



2012 Year Book Australia



A comprehensive source of information about Australia.



2012

YEAR BOOK

AUSTRALIA

2012

**YEAR BOOK
AUSTRALIA**

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Australian Statistician

NUMBER 92

AUSTRALIAN BUREAU OF STATISTICS
CANBERRA

ABS Catalogue No. 1301.0

ABS catalogue no. 1301.0

ISSN 0312-4746

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Produced by the Australian Bureau of Statistics

Cover: Both the National Year of Reading and Australian Year of the Farmer have been declared for 2012. The National Year of Reading promotes the importance of reading and literacy to encourage Australia to become a nation of readers. The Australian Year of the Farmer recognises the vital contribution farmers make to Australia whilst establishing close ties between rural and urban communities.

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Preface

Year Book Australia is the principal reference work produced by the Australian Bureau of Statistics (ABS). It provides a comprehensive statistical picture of the Australian economy, society and environment. In addition, it contains information on Australia's geography and climate, system of government, government services, international relations and defence.

The first Official Year Book of the Commonwealth was published in 1908, although individual Australian states and colonies had been producing year books for several decades previously. Over more than 100 years, the ABS and its predecessor, the Commonwealth Bureau of Census and Statistics, have maintained the tradition of publishing the Year Book. This is the 92nd edition of *Year Book Australia*, and as with previous editions, a number of additional articles are included.

In 2012, Australia celebrates both the National Year of Reading and the Australian Year of the Farmer. Feature articles recognising both years are included in this edition and special articles are also presented in several chapters consistent with these themes.

Also, for the first time, a separate chapter on Aboriginal and Torres Strait Islander peoples has been included. The chapter presents information based on nine broad domains of wellbeing that are of specific importance to the Aboriginal and Torres Strait Islander population.

In 2012, Australia also celebrates the United Nations International Year of Co-operatives. A feature article recognises the year by looking at the activities of co-operatives in Australia. The Australian International Year of Co-operatives Secretariat co-ordinated the many contributions to the article and to several special articles on co-operatives.

I am very grateful to all contributing organisations for their excellent contributions. ABS products rely on information provided freely by individuals, businesses, governments and other organisations. Their continued co-operation is very much appreciated.

My thanks also go to the many ABS staff who contributed to the preparation and production of *Year Book Australia 2012*.

Brian Pink
Australian Statistician
May 2012

Introduction

Year Book Australia provides a comprehensive overview of the economic, social and environmental conditions of contemporary Australia. It is a statistically-oriented publication with sufficient background information to establish a context for the statistics and to assist in understanding and interpreting them.

The source of many of the statistics are surveys and other collections conducted by the Australian Bureau of Statistics (ABS), the national statistical agency that produces the Year Book. However, a great deal of information is contributed by other, predominantly Australian Government, organisations. The official nature of the contributors to the Year Book ensures a high degree of objectivity and reliability in the picture presented of contemporary Australia.

This edition, the 92nd, is the latest in a long series of editions extending back to the first in 1908. They provide a valuable source of information on the state of Australia at any point during this period.

Statistics contained in this edition are the most recent available at the time of preparation. In many cases, the ABS website <<http://www.abs.gov.au>> and the websites of other organisations provide access to more recent data. On the ABS website, readers can browse tables, time series spreadsheets, data cubes, information papers, associated products and media releases that relate to topics covered in the Year Book, and download the information at no cost.

Finding information

The contents pages at the beginning of the Year Book provide a guide to the broad subjects contained in each chapter. The index assists in locating information on more specific subjects. A list of articles from the previous ten editions is located at the end of this edition.

Tables, graphs and other figures are numbered and text is cross-referenced, as necessary, to the table, graph or other figure to which it relates.

Further information

While the statistics and descriptive information contained in the Year Book provide a comprehensive overview of Australia, they represent only a small part of the statistics and other information available. The Year Book is aimed primarily at providing a ready and convenient source of reference, both to those familiar and unfamiliar with a particular subject. In other words, because of the range of subjects, and limitations on the size of the Year Book, it aims at breadth rather than depth of information.

For those requiring information in greater depth, the Year Book serves as a directory to more detailed sources, with the source shown for each statistical table, graph and other figure. Where the ABS is the source, the title and catalogue number of the relevant product are quoted. For other sources, the name of the organisation is shown, and the product title where appropriate. Relevant ABS and other products, together with a selection of websites, are listed at the end of each chapter.

As well as the information included in this Year Book and available on the ABS website, the ABS may have other relevant data available on request. Charges are generally made for such information. Inquiries should be made to the National Information and Referral Service on 1300 135 070.

Annual reports of government departments and agencies also provide a valuable source of more detailed information on subjects covered in the Year Book.

For a variety of reasons, it is not possible for all statistics in the Year Book to relate to the latest or same year. Readers wishing to obtain or clarify the latest available statistics should contact the relevant source or website.

Reference to the national government

Australia has a federal system of government comprising a national government, and the governments of the six states and two territories. In *Year Book Australia 2012*, the national government is generally referred to as either 'the Australian Government' or 'the Commonwealth Government'. On occasions, the shortened term 'the Commonwealth' or 'the Government' is used when referring to the national government.

Reference to Aboriginal and Torres Strait Islander peoples

In *Year Book Australia 2012*, the term 'Indigenous' is now only used where it is part of an organisation name or a title. The preferred term, Aboriginal and Torres Strait Islander, has been used in other situations.

Reference to countries

The appropriate edition of the *Standard Australian Classification of Countries (SACC)* (1269.0) has generally been used to describe countries where it is clear that the country so described is equivalent to that shown in the original data source. In some cases, contributing organisations prefer to use other nomenclature, in which case their usage has been preserved.

Symbols and abbreviations

The following symbols and abbreviations are shown in tables, graphs and diagrams:

'000	thousand
\$	dollar/s
\$'000	thousand dollars
\$m	million dollars
\$b	billion dollars
%	percentage
—	nil or rounded to zero (including null cells)
..	not applicable
^	estimate has a relative standard error of between 10% and 25% and should be used with caution
*	estimate has a relative standard error of between 25% and 50% and should be used with caution
**	estimate has a relative standard error greater than 50% and is considered too unreliable for general use
°C	degrees Celsius
ABS	Australian Bureau of Statistics
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industrial Classification
ANZSOC	Australian and New Zealand Standard Offence Classification
ATO	Australian Tax Office
bill.	billion
COAG	Council of Australian Governments

CO ₂ -e	carbon dioxide equivalent
COFC	consumption of fixed capital
c	carat
Cwlth	Commonwealth
EDR	economic demonstrated resources
e.g.	for example
ERP	estimated resident population
etc.	etcetera
EVAO	estimated value of agricultural operations
excl.	excludes/excluding
FOB	free-on-board
FTE	full-time equivalent
GDP	gross domestic product
GFS	government finance statistics
GJ	gigajoule
GL	gigalitre
GOS	gross operating surplus
GST	goods and services tax
Gt	gigatonne
GVA	gross value added
ha	hectare
i.e.	that is
incl.	includes/including
IPD	implicit price deflator
IVA	industry value added
kbps	kilobits per second
kg	kilogram
km	kilometre
kt	kilotonne
L	Litre
m	metre
m ²	square metre
m ³	cubic metre
Mbps	megabits per second
Mc	million carats
MFP	multifactor productivity
mill.	million
ML	megalitre
Mm ³	million cubic metres
mm	millimetre
Mt	megatonne
na	not available
NDP	net domestic product
n.e.c.	not elsewhere classified
n.e.s.	not elsewhere specified
n.f.d.	not further defined
n.i.e.	not included elsewhere
NIPIND	National Income and Production Industry Classification
NOS	net operating surplus
no.	number

np	not available for publication but included in totals where applicable, unless otherwise indicated
nya	not yet available
OPBT	operating profit before tax
p	preliminary figure or series subject to revision
p.a.	per annum
PAYG	Pay As You Go
PJ	petajoule
R&D	research and experimental development
SAR	special administrative region
SDR	standardised death rate
SITC	Standard International Trade Classification
SLA	statistical local area
sq km	square kilometre
t	tonne

Abbreviations may be used for the following Australian states and territories:

NSW	New South Wales
Vic.	Victoria
Qld	Queensland
SA	South Australia
WA	Western Australia
Tas.	Tasmania
NT	Northern Territory
ACT	Australian Capital Territory
Aust.	Australia

Yearly periods shown, for example, as 2011, generally refer to the year ended 31 December 2011. Those shown, for example, as 2010–11, generally refer to the year ended 30 June 2011. Other yearly periods are specifically indicated. The range of years shown in the table headings, for example, 1901 to 2004, indicates the period covered, but does not necessarily imply that each intervening year is included or that the yearly period has remained the same throughout the series.

Values are shown in Australian currency unless another currency is specified.

Where figures have been rounded, discrepancies may occur between sums of the component items and totals.

Comments from readers

The ABS endeavours to keep the balance of the contents of the Year Book in line with the ever-changing nature of the nation. For this reason, comments on the adequacy and balance of the contents of the Year Book are welcomed and should be directed to the attention of the Editor of the Year Book, Australian Bureau of Statistics, Locked Bag 10, Belconnen ACT 2616.

National Year of Reading 2012

In 2012, Australia celebrates the National Year of Reading. This feature article recognises the year and is in two parts. The first part describes the role of libraries in helping to make Australia a nation of readers and was contributed by Paula Kelly of the State Library of Victoria and Sue McKerracher, Director of the Library Agency. The second part considers reading in a home and family context and was contributed by Dr Killian Mullan and Dr Galina Daraganova of the Australian Institute of Family Studies.

A special article, *Cherbourg State School Language for Life project*, also recognises the National year of Reading and can be found in chapter 3 *Aboriginal and Torres Strait Islander Peoples*.

The 2012 National Year of Reading provides a focus for the libraries and library associations of Australia – in partnership with governments, the media, writers, schools, publishers, booksellers and others – to encourage reading throughout the community.

The National Year of Reading campaign has the broad vision of Australia as a nation of readers. It addresses a concern that many Australians lack the literacy skills to participate fully in modern society, as highlighted by the 2006 ABS Adult Literacy and Life Skills Survey finding that nearly half of Australia's adult population lacked the minimum literacy skills necessary to meet the complex demands of everyday life and work.

Kelly and McKerracher's essay looks at how Australian libraries are promoting a culture of reading, and in particular, how their participation in the National Year of Reading is contributing to this goal. The article emphasises the key role that libraries play in promoting reading within the community and highlights the range of programs being undertaken to ensure that everyone has access to reading material and is encouraged to read.

Mullan and Daraganova's essay draws on data from *Growing up in Australia: The Longitudinal Study of Australian Children* and examines the factors that influence reading in the critical childhood years. While most children enjoy reading and a substantial minority read every day, a small but persistent group of children neither read nor enjoy reading. The article highlights the ongoing benefits of parents reading to their children when they are very young.

The National Year of Reading: libraries helping to make Australia a nation of readers

"It's easy to be blasé about reading and books – easy to take them for granted. Yet when I think about it, reading to me is the key to so much. The key to a wider reach of information, a path to learning, the joy of entertainment and the exciting of the imagination. It's just so much fun."¹

William McInnes, Australian actor and author and patron of the National Year of Reading.



Image: National Year of Reading.

For the nearly half of Australia's adult population who lack minimum literacy skills, reading for pleasure may not be possible. This not only prevents them from partaking of one of life's great joys – a 'good read' – but means that they are unable to access sources of knowledge and learning through reading. The National Year of Reading is highlighting the joy of reading and the benefits of fostering a love of books. It is also bringing into focus the role of Australian libraries in working with communities to encourage reading and to promote literacy.

This article explores the aims of the 2012 National Year of Reading and how, through its activities, it is contributing to making Australia a nation of readers. The article also considers more generally how libraries contribute to this aim by fostering a reading culture, including among disadvantaged populations.

Why reading and writing matter

TVs in the 1960s, PCs in the 1980s, Internet in the 1990s, laptops, tablets and smartphones in the noughties – work, study and leisure have become screen-based, online and virtual. Some may question the need for high levels of literacy in a digital age. However, the ability to

read and write has never been so important. When you are communicating online, more than ever you need the ability to use words, the power of description, and the gift of storytelling. Whether it is a Facebook post, a text message or a daily blog, good use of words is an essential element of communication.

Literacy used to be just about prose, but it has developed new meanings for the 21st century. People now need document literacy for everyday, but vital, tasks such as reading and understanding occupational health and safety instructions in the workplace, or being able to fill out forms. Increasingly, they also need to be proficient in the use of information technology for communicating with others.

At its core, literacy is about the ability to use words, make meaning and access information in the written form. From a personal and societal perspective, it has come to mean the ability to function well in our increasingly complex lives. Nationally, a literate population is essential if Australia is to prosper in the global knowledge economy. Literacy also provides the gift of reading for pleasure – an engaging, rewarding, mind expanding and

emotionally enriching activity. Those who are struggling with basic literacy will find that reading is a chore, a task, a complex system of symbols to be decoded. The black marks on the page will barely have meaning, so reading will not be a pastime of choice for these Australians – let alone a vehicle for success in life.

“The links between literacy, the ability to read and write the printed word, school performance, self-esteem and adult life chances have been widely documented ... poor literacy skills are associated with generally lower education, employment, health and social outcomes as well as being linked to high rates of welfare dependence and teenage parenting.” (Centre for Community Child Health, 2004). The critical implications, in terms of future skill attainment, life outcomes and productivity levels are noted in the Victorian Government’s Young Readers Program Report (Kelly et al., 2011).

Outside health and housing, encouraging a child to read and keeping them reading is arguably the single most important thing that can be done to influence positive outcomes in young people’s lives – socially, culturally, educationally and economically. “At its most basic level, reading is a pleasurable pastime that has many positive outcomes for the individual. It provides inexpensive entertainment, contributes to a person’s wellbeing, and provides a connection with others. It is a means of acquiring knowledge and self-development, enabling readers to understand and empathise with people of different eras, cultures and situations.”(McKerracher, 2009). Not surprisingly, it also helps with vocabulary development, attention span, and the ability to concentrate and focus. Maryanne Wolf, in her book *Proust and the Squid: The Story and Science of the Reading Brain*, states that the process of learning to read actually teaches the brain how to learn (Wolf, 2007).



Image: *Libraries Building Communities Report* (State Library of Victoria, 2008).

How Australia rates for literacy

The Adult Literacy and Life Skills Survey (ALLS) was conducted in Australia in 2006 by the Australian Bureau of Statistics (ABS). It was part of an international study co-ordinated by the Organisation for Economic Co-operation and Development (OECD) and Statistics Canada, and examined adult literacy in the official language(s) of participating countries. ALLS was a follow-up to the Survey of Aspects of Literacy (SAL) conducted in 1996 as Australia's contribution to the International Adult Literacy Survey (IALS). Both the Australian studies looked at prose literacy (the ability to understand and use information from various kinds of narrative texts, including texts from newspapers, magazines and brochures) and document literacy (the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts). The 2006 Australian survey added a more comprehensive domain on numeracy and new domains on problem-solving skills, and the ability to understand health-related information (such as reading the labels on medicine packets).

Participants in the studies were rated on their skill level, graded from 1 to 5. Individuals with a skill level for prose literacy below 3 are considered to lack the minimum skills required to meet the complex demands of everyday life and work in the emerging knowledge-based economy. ALLS showed that almost half (46%) of all Australians aged 15 and over did not meet this requirement.

In an international context, prose literacy skill levels in Australia are comparable to those in Canada but are behind leading countries, such as Norway (graph 1).

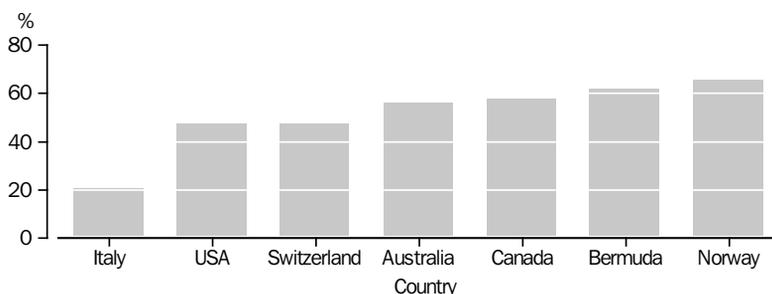
Australia, in common with many of the other participating countries, exhibited only a modest improvement in literacy between 1996 and 2006. In Australia, the proportion of people with the poorest literacy (skill level 1) declined slightly for both prose (from 20% in 1996 to 17% in 2006) and document literacy (from 20% in 1996 to 18% in 2006). This was counter-balanced for prose literacy by slight increases at skill levels 2 (28% to 30%) and 3 (35% to 37%). For document literacy, the proportion of people at skill level 2 remained stable, while the proportion of people attaining skill level 3 increased from 28% to 30%.

The 2006 Australian survey found that literacy skill levels were generally higher for those with a higher level of educational attainment but that the correspondence was not exact. Among people whose highest qualification was a Bachelor degree, just over one-fifth (21%) were not prose literate, compared to 37% among people whose highest attainment was Year 12 and 73% among people with Year 10 or below.

In Australia, migrants who did not use English as their first language had lower literacy skills (in English), but there was a marked reduction in the gap between the 1996 survey (SAL) and the 2006 survey (ALLS).

While poor literacy is a concern for all ages, the 2006 Australian survey found lower skill

1. PROSE LITERACY, PROPORTION AT SKILL LEVEL 3 OR ABOVE, International comparison(a)—2006(b)



(a) Based on age range of 16-65 years.
(b) Or nearest available year.

Source: *Adult Literacy and Life Skills Survey, Summary Results, Australia, 2006 (4228.0)*.

levels for older people. Literacy decreased with age, in part, because of lower educational attainment, but perhaps also because some older people were no longer using more advanced literacy skills, particularly once they had retired. While 37% of people aged 20–24 and 41% of 40–44 year olds had low prose literacy skills, 73% of people aged 65–74 years did so.

Literacy levels in both the 1996 and 2006 Australian surveys were substantially lower among people who were unemployed or not in the labour force, compared with those who were employed. The final report on the 1996 International Adult Literacy Survey (IALS) observed that, across all participating countries, people with low literacy were “... less likely to be in employment, less likely to find work when looking for it and less likely to work regularly when a job is obtained. Because the world of work also is a significant factor in the acquisition and building of skills, adults with low skills find themselves at a distinct disadvantage.” (OECD and Statistics Canada, 2000).

Another international study, the Programme for International Student Assessment (PISA), is a study conducted by the OECD every three years, with the aim of providing a comparable measure of the achievement of 15-year old students in a range of core capabilities. While Australia ranked quite highly in the 2009 study (receiving results above the OECD average for every category), nevertheless, 14% of Australian students aged 15 had failed to reach the baseline level of reading proficiency considered essential for future development in a number of areas of knowledge acquisition. Another 20% were functioning at the minimum baseline proficiency level (OECD, 2011). More information on the PISA study can be found in *International comparisons* in chapter 12.

The final report on the IALS noted that “... literacy skills are maintained and strengthened through regular use. While schooling provides an essential foundation, the evidence suggests that only through informal learning and the active use of literacy skills in daily activities – both at home and at work – will higher levels of proficiency be attained. The creation of literacy-rich environments, in the

workplace and more generally, can have lasting, intergenerational effects.” (OECD and Statistics Canada, 2000). This finding emphasises the importance of activities, such as those being undertaken under the umbrella of the National Year of Reading, in building and maintaining critical literacy skills.

The role of libraries

The National Year of Reading is also highlighting the changing role of libraries in the community. Libraries were once seen as simply repositories of reading materials, but in recent years they have taken a more active approach to their core business. They have become community hubs providing services for a broad range of community members, with a focus on the most disadvantaged. In addition to being key linkage agents for activity across local areas for collaborative and co-operative projects, a broader range of materials is now available through these partnerships – both online and in print. This diversity means that libraries are a first contact point for people seeking all kinds of information, from all walks of life and for all sorts of reasons

There are many types of libraries: school libraries, state and territory libraries, government libraries, business libraries, prison libraries, special libraries, mobile libraries, university libraries, health libraries, TAFE libraries and, of course, public libraries. Public libraries alone represent a network of more than 1,500 sites, most of them located in the heart of towns and cities, forming an essential part of a community hub. Add 9,000 school libraries, plus university and TAFE, health, government, business, prison and other special libraries, and there are more than 10,000 high profile centres in metropolitan, rural and remote Australia, all with the shared goal of ‘Australia, a nation of readers’.

Reader development is a relatively recent focus for public libraries, although books and reading have always been at the heart of what a library has to offer its users. Reader development librarians are trained to support reading for pleasure and literacy initiatives – from new ways of displaying books and magazines to attract keen readers, through to programs and events for people with low and developing literacy levels.



National Year of Reading 2012

The alarming 2006 ABS statistic that just under half (46%) of adult Australians cannot confidently read newspapers, follow a recipe, make sense of timetables, or understand the instructions on a medicine bottle, was a motivator for Australian libraries to found the National Year of Reading. The idea was based on the success of the United Kingdom National Year of Reading in 2008,² a year-long celebration of reading that aimed to build a greater national passion for reading in the United Kingdom. Critically, here in Australia, the initiative began with libraries and has subsequently been well supported by government as a key strategy contributing to the goal of a 'Literate Nation'. The campaign in Australia is based on three goals and four strategies:

Three goals ...

1. For all Australians to understand the benefits of reading as a life skill and a catalyst for wellbeing.
2. To promote a reading culture in every home.
3. To establish an aspirational goal for families, of parents and caregivers sharing books with their children every day.

Four strategies ...

1. Belief in the positive power of reading. The NYR aims to spread the message to the wider community of the benefits of reading, to help change behaviours and to encourage a reading culture in all homes.
2. Accessibility and inspiration for struggling and reluctant readers. The NYR will give people a taste of what is out there, in an easily digestible form – not weighty tomes, but novellas, magazine articles, audio books, e-zines and short stories; across many different genres; covering diverse cultural perspectives, and in some cases in languages other than English. The NYR will also appeal to book lovers. It is an opportunity for readers to try new things and to become advocates for reading with their peers. The year's activities focus on all readers – avid, emergent, reluctant, developing and those struggling to learn to read, or to become better, or more proficient readers.
3. Good government policy and practice. The NYR will give all three levels of government – local, state/territory and federal – the opportunity to showcase best practice from family literacy initiatives through to reading therapy for people in aged care facilities. This campaign provides the opportunity to create a new level of cross-government, cross-council involvement in literacy, which it is hoped will continue far beyond the end of 2012.
4. A joined up approach, linking all the government agencies, organisations and programs engaged in reading and literacy. The NYR will link the good things that are already happening in promoting reading and add a catalyst for action into the mix. For example, the Australian Children's Literature Alliance's (ACLA) first Australian Children's Laureate³ will promote engagement with children and reading, and appreciation of Australian children's and young adult literature.

Family literacy

The National Year of Reading is engaging families through various components of the program, for instance, supporting and advocating the role of families in literacy development. This is adding to libraries' already active role in developing strategies and resources for promoting literacy and a reading culture by supporting families in their role as first teachers.

International studies show that sharing books with young children before they go to school greatly improves their chances of developing good literacy skills.⁴ The Nobel Prize-winning economist James Heckman, put a strong economic argument to support the case for investment in early childhood initiatives, with programs targeted at children aged under six delivering a high rate of return on investment (Beckman, 2008).

Recent Australian research into parents' understanding of the importance of reading

to very young children has revealed that more than a quarter of parents are not aware of the impact of this activity (MCEECDYA parents survey, quoted in Hill, 2011). *Evaluation of the Better Beginnings* project conducted by Dr Caroline Barratt-Pugh at Edith Cowan University in Western Australia, identified that providing free books in the home, and literacy support materials for parents, positively affected their reading habits with their children. As a result, increased library membership rates and book borrowing activities were also evident in the communities studied (Barratt-Pugh, 2010).

Parents and caregivers are the first teachers. The more stimulation they provide by talking to their babies, singing to them, and sharing rhymes and stories, the better the outcomes for their children. Economic and life-changing benefits can be achieved if parents or caregivers introduce their children to books at home, facilitated by sessions at their local libraries.



Image: Never too early, baby with *It's Rhymetime* booklet (courtesy West Gippsland Regional Library).

Children's book creator and co-winner of the Prime Minister's Literary Award for children's fiction, Boori Monty Pryor, and award winning children's book illustrator and author, Alison Lester, have been jointly named as the nation's first Children's Laureates.

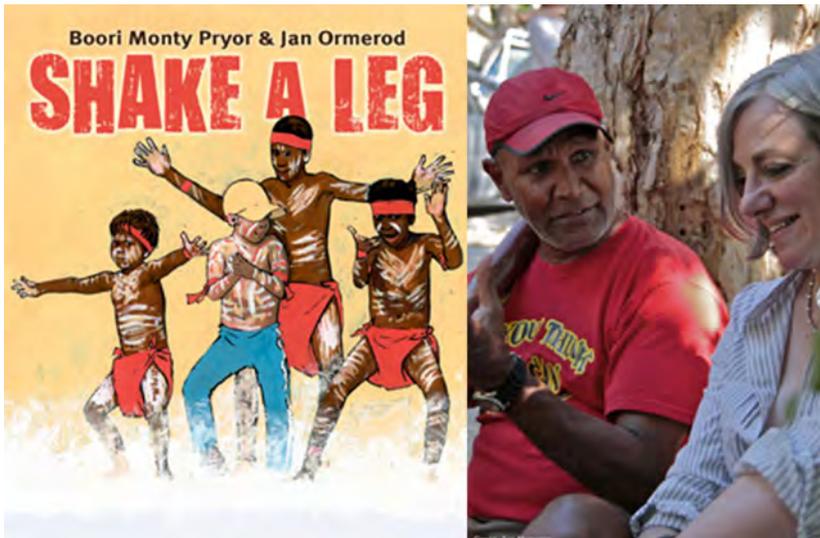


Image: Winners of the 2011 Prime Minister's Literary Awards (children's fiction) – *Shake a Leg* – Boori Monty Pryor and Jan Ormerod.⁵

Alison Lester's book, *Are We There Yet?* is the younger readers' featured book of the One Country Reading campaign – a hallmark component of the National Year of Reading. One Country Reading has a child, teen and adult target audience and is designed to get the country reading through active engagement. In the campaign, readers are encouraged to vote for their favourite books and share creative responses to reading.



Image: Alison Lester, from *Are We There Yet?* (Lester, 2004).

Families have traditionally been heavy users of public library services, which are free, accessible, local and informal. Families borrow from libraries' collections of books, DVDs and other print/online materials. They participate in baby, toddler and children's rhyme, song and storytelling sessions, and parents/caregivers seek advice from library staff about sharing books with their infants. Libraries are helping parents to be their children's first teachers. The most active period of human brain growth and development is from birth to three years of age, and libraries employ specialist children's and youth services staff to help parents/caregivers give their children the best start by sharing books with them.

Libraries already play an active role in developing strategies and resources for promoting literacy and a reading culture. In the National Year of Reading, initiatives such as those identified here will be used as models for best practice and implemented in communities where funding and partnerships are aligned to support their delivery.

The State Library of Queensland is leading a project to develop an Australian national early literacy strategy for public libraries and there are active programs and strategies at state and territory level. In Western Australia, the Better Beginnings program offers free books to families and literacy resources.⁶

Between 2007 and 2011, the Victorian Government ran the Young Readers Program through the State Library of Victoria. This program provided free picture books for every two-year old in the state; professional development for librarians and maternal and child health nurses, and the early childhood workforce; and free early literacy materials for new parents. Other agencies strongly associated with libraries' work in this area include Let's Read,⁷ based in Victoria and conducted by the Centre for Community Child Health,⁸ and the Little Big Book Club (LBBC),⁹ based in South Australia. Let's Read provides books and literacy strategies to support highly disadvantaged communities. LBBC developed and distributes literacy resources in many states including the *It's Rhymetime* booklet and DVD (Little Big Book Club Inc, 2006).

The professional development program, *Building Literacy Before School@your Library*

(Hill, 2009), was developed and conducted by Associate Professor Susan Hill of University South Australia, in partnership with both the LBBC and the Young Readers Program in Victoria. It focuses on family literacy in the context of supporting library staff to share the importance of rich early literacy experiences. The support provided by library resources and specialist staff expertise is fundamental work that librarians and early childhood educators and carers are involved in.

Programs for young people

Young people are a focus of the National Year of Reading campaign. Keeping young Australians reading is critical to help them to continue building vocabulary and increase their understanding of themselves and of others. Whilst the brain remains able to continue adapting and growing throughout life, the teenager's brain is at its most receptive to new information since its initial growth in early childhood (Mendelsohn, 2009). However, these are also years when reading for pleasure can drop off as other interests become more enticing. Teenage boys, in particular, are likely to do less recreational reading than when they were younger.

School and public libraries play an important role in keeping young people reading. Putting the right book, in the right hand, at the right time is a critical task, as young people's reading advocate Agnes Nieuwenhuizen points out in her book *Right Book, Right Time – 500 great reads for teenagers* (Nieuwenhuizen, 2007). Developing knowledge and skills for both school and public librarians so they can play an active role in the development of readers is vitally important. Libraries also offer spaces for study and homework clubs outside of school hours.

Nationally, the State Library of Victoria's Centre for Youth Literature provides the *insideadog.com.au* website¹⁰ for keen teen readers to exchange book reviews and participate in the voting for the annual Inky Awards for young adult fiction. The website reflects the Australian youth literature landscape and although built for a teenage audience, teachers and librarians use it readily for its resources, ideas about what teens like to read, and to direct keen readers

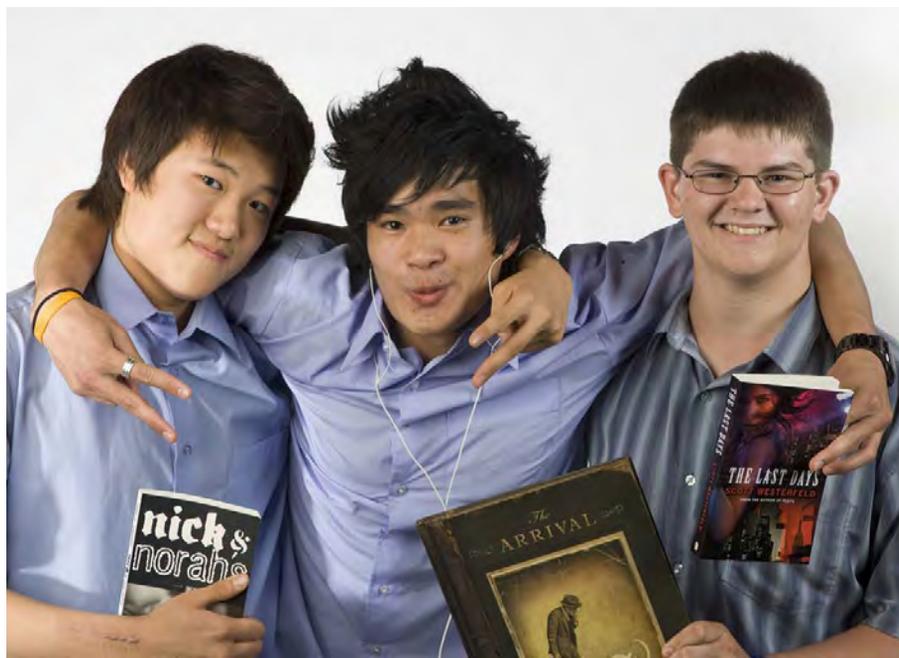


Image: Keeping Young Australians Reading (McKerracher, 2009), photo State Library of Victoria Image Resources.

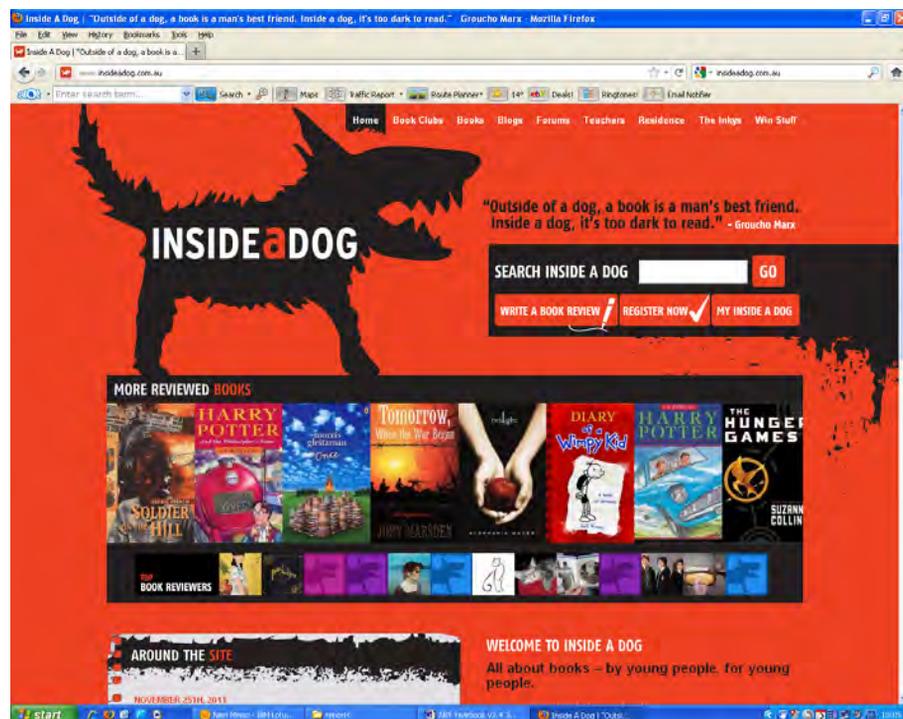


Image: insideadog.com.au website.¹¹

to reading choices. The Centre also runs the country's only youth literature specialist conference – the biennial Reading Matters conference.¹² Among others, it attracts library reader development officers, teacher-librarians and students. It features both international and Australian authors and illustrators. Additionally, the Centre provides professional development for school and public librarians through its annual program and the Read Alert blog,¹³ which keeps professionals and parents abreast of news in the young adult literature landscape.

Other literature and reading promotion initiatives for young people include: the Western Sydney Young People's Literature Project,¹⁴ hosted by Blacktown City Council; the Voices on the Coast Festival¹⁵ and the Ipswich Festival of Children's Literature,¹⁶ both in Queensland; and the Fremantle Children's Literature Centre in Western Australia.¹⁷ These initiatives support educational reading programs for young people in school, public library and community settings. Public libraries also partner with other festivals around Australia to support and promote their education programs with specialist primary and secondary school programs.

Adult literacy

One of the other major themes of the National Year of Reading is adult literacy and its focus on specifically addressing literacy in the workplace. This acknowledges the impact that adult literacy has on productivity, promotional opportunities and occupational health and safety issues in the workplace.

Libraries provide support for lifelong learning in the community. Their collections include audio/text materials for people who want to improve their literacy skills and a variety of other print and online resources. They host conversation classes for people for whom English is a second language, and they provide connections to other service providers, for example, the Australian Government's Reading Writing Hotline.¹⁸

A major initiative targeted at speakers of languages other than English is the MyLanguage website.¹⁹ Libraries ACT, the Northern Territory Library and the State Libraries of New South Wales, Queensland, South Australia, Victoria and

Western Australia together created this Internet portal, enabling access to information in more than 60 languages, with over six million links to search engines, web directories, government websites, digital library projects and news. The website supports libraries in providing information to culturally and linguistically diverse communities that would not be possible via print collections alone.

Aboriginal and Torres Strait Islander peoples' literacy

The National Year of Reading is supporting the development of literacy among Aboriginal and Torres Strait Islander peoples through supporting the Indigenous Literacy Foundation's activities, as well as the Children's Laureate program which will tour the Laureates to remote communities in 2012. Libraries are also playing their part in a variety of ways.

The 2009 National Assessment Program: Literacy and Numeracy (NAPLAN) figures²⁰ show that only two-thirds (67%) of Year 5 Aboriginal and Torres Strait Islander students achieved Australia's national minimum standard in reading, compared with 93% of non-Indigenous students. The percentage of Year 5 Aboriginal and Torres Strait Islander students achieving the national minimum standard in reading was less than half (47%) in remote areas and barely one-quarter (26%) in very remote areas (National Assessment Program: Literacy and Numeracy, 2009).

A number of specialists are working to improve the literacy standards of Aboriginal and Torres Strait Islander peoples. They include the Indigenous Literacy Foundation,²¹ the Australian Literacy and Numeracy Foundation's Centre for Aboriginal Literacy,²² the Aboriginal Literacy Foundation,²³ the Fred Hollows Foundation²⁴ and the Smith Family.²⁵

State and territory libraries are active in supporting the development of literacy in Aboriginal and Torres Strait Islander communities. The State Library of Queensland has developed a network of Indigenous Knowledge Centres,²⁶ which offer traditional library services as well as a means and a place to capture and preserve local history and traditions. The Northern Territory Library's Libraries and Knowledge Centres (LKC) program works to

bring together technology-enhanced services and Aboriginal and Torres Strait Islander people within a community networking framework. The Our Story project has developed a database that allows for the collection, holding and display of "... both repatriated and contemporary, including born-digital, cultural material relevant to local communities" (Gibson et al., 2011). Access to information, oral histories and the documentation of local stories in this way is an important and significant way to bridge oral and print (ink and online) cultures.

The Walk to School is "An Indigenous Early Years Literacy Strategy for Northern Territory Public Libraries and Knowledge Centres" (Northern Territory Library, 2008). The Strategy supports caregivers of Aboriginal and Torres Strait Islander children aged from birth to five years in creating rich literacy environments through behaviours and practices. It also facilitates access to age-appropriate literacy oriented activities and resources in library settings. This program is funded by a Bill & Melinda Gates Foundation Access to Learning Award that the Northern Territory Library received in 2007, in recognition of its innovative approach to the delivery of appropriate library services for Aboriginal and Torres Strait Islander communities.

Outreach

Outreach activities are vital to bridge the literacy gap for certain groups, for example, people who live in remote areas of Australia or people with non-English speaking backgrounds. Such activities may decrease the

likelihood of non-completion of secondary school, which in turn, should help improve employment outcomes and reduce long-term economic disadvantage (State Library of Victoria and Library Board of Victoria, 2008).

Libraries are increasingly active in providing services beyond their walls, reaching out to those most in need – those who cannot or may not otherwise access the resources available to them. In the National Year of Reading, libraries are showcasing their efforts in this area, with activities and programs that foster a sense of community. For example, there are programs that support volunteers delivering books to people who are housebound (the home library service) while other programs encourage parents to read to their children by providing storytimes in English and other languages. Many library services conduct local needs analysis studies to develop appropriate community programs. Outreach programs are often delivered in partnership with maternal and child health services or community-based outreach programs like the Smith Family's Communities for Children²⁷ programs.

Reaching the hard-to-reach

Community publishing projects offered through libraries provide an opportunity for storytelling and cultural exchange. These projects 'join the dots' between oral and print culture, creating high quality picture books that are relevant to culture and language for disadvantaged or marginalised groups. This approach has been developed by Kids Own



Images: Beautiful Samoa – Community Publishing Project (Victorian Government Young Readers program, 2010).

Publishing,²⁸ a not-for profit arts organisation, and has been implemented in partnership with the State Library of Victoria as the Making Books Making Readers program in Victoria. This program is also delivered in Western Australia. It involves a community artist working with a local community group, usually bringing together children and parents and significant community members and elders, to tell their stories in words and pictures and produce the result as a high quality picture book.

Other outreach programs providing library services and literacy resources and activities for marginalised and disadvantaged sections of the community include Book Well (McLaine, 2010). The program partners public libraries in Victoria with community-based organisations and uses read aloud sessions as therapy for people experiencing mental health issues, hospital patients, prison inmates and residents in aged care facilities. In Tasmania, libraries are supporting the Reading Together²⁹ initiative at Risdon Prison, whereby male inmates are able to record themselves reading stories that can then be sent home to their children. This has many benefits, including restoring a form of family connection, introducing the role model of a father reading, and improving the literacy skills of those prisoners who struggle with reading.

The Vision Australia library service³⁰ is designed for Australians with a print handicap. It not only provides audio books for subscribers,

but also Feelix kits for children to help vision impaired children enjoy picture books. These kits include Braille overlays and hand created physical artefacts related to the story that can be played with. The service also creates DAISY (Digital Accessible Information Systems) versions of all audio materials. Vision Australia has produced a Braille version of *Are We There Yet?* – the featured children’s book for the National Year of Reading.

Both the Royal Children’s Hospital in Melbourne and Westmead Hospital in Sydney offer reading programs, supported by Scholastic Australia. The newly-opened Royal Children’s Hospital will encourage reading in 2012 with programming created by the Education Institute.³¹ The program enables children who have a long-term illness, and who may miss out on lengthy periods of schooling, to access books, information and reading activities through a Book Bunker.³²

Outreach in the general community

During the National Year of Reading in 2012, travelling exhibitions like Look! The Art of Australian Picture Books Today and Alison Lester’s book, *Are We There Yet?* will provide families with a heart-warming experience, enjoying original picture book art at close range, thus encouraging connections with the featured books and stories. These exhibitions are visiting libraries and community centres in capital cities, regional centres and towns right around Australia.



Image: Illustration by Ann James, from *Lucy Goosey*³³ (courtesy State Library of Victoria).

The Children's Book Council of Australia (CBCA)³⁴ promotes high standards in children's book creation and advocates the love of reading. It runs the Children's Book Awards each year and state and territory committees partner with local libraries, schools and organisations on large and small scale initiatives. One example was the first joint Children's Book Festival³⁵ delivered in partnership between the Wheeler Centre for Books, Writing and Ideas, and the State Library of Victoria in 2011. The second festival, in 2012, will help establish an annual calendar event in Melbourne – Australia's UNESCO City of Literature.³⁶ The Children's Book Festival's success was aided by its relationship with many partners including the Children's Book Council (Victorian Branch). Other CBCA branches partner with libraries, schools and communities to deliver a variety of initiatives across the year. In 2012, Adelaide will be the home of the CBCA National Conference, supporting the professional development of librarians and booksellers in the National Year of Reading.³⁷

The Australian Government continues to support the promotion of reading with the Get Reading!³⁸ campaign, which takes place each September. Get Reading tours authors across the nation with events in libraries and community centres. Organisations such as the Literature Board of the Australia Council for the Arts, and the Copyright Agency Ltd for Australian authors and illustrators also promote reading via libraries and bookshops.

Independent booksellers that utilise the expertise of staff in recommending up-to-date reading suggestions, in the same way that a skilled librarian does, also play a crucial and important role in putting the right books in the right hands.

Reaching out online

The State Library of Victoria also works with SuperClubsPLUS (SCP),³⁹ a children's safe social learning network supported by the Department of Education and Early Childhood Development in Victoria as well as by other government bodies and organisations around the world. A 'Reading Badge' has been developed designed to stimulate young readers. Primary aged students participate



Image: Super Clubs Plus.⁴⁰

in author 'hot seats', interacting online with their favourite authors, reviewing books, making peer to peer recommendations for reading and entering competitions designed to encourage creative responses to reading. This is an innovative outreach activity accessible anywhere with an Internet connection, capitalising on young people's affinity with technology and social networking. In 2012, a separate junior reading online project will be developed building on the success of this earlier collaboration between the State Library of Victoria and SCP, with additional partners including libraries, schools, publishers and, of course, young people themselves across the nation.

The National Year of Reading and the future for libraries

The National Year of Reading provides a spotlight on the changes that are occurring in the reading environment and on the role of libraries. The book industry is in a state of flux, due to the economic climate and technological developments, while the very nature of what is being read and how it is provided to the reader is changing. These changes are providing both challenges and opportunities to libraries. Most libraries are investing, or planning to invest, in the devices and e-resources that will enable library users to download and borrow e-books alongside other e-formats. In many ways, this is a new age for libraries, with borrowers now able to use the service remotely; space freed up by reference collections going online; and more room for reading, studying and taking part in events and activities. WiFi is already offered by many libraries and the arrival of the National Broadband Network will further

increase the speed and connectivity, both for users of the libraries' own terminals and for people with their own devices.

The library can be many things to many people. The Australian Library and Information Association's Little Book of Public Libraries (ALIA, 2009) describes libraries' multiple contributions to society, including strengthening family relationships; improving quality of life; building safer, stronger, sustainable communities; making citizens healthier; and contributing to economic prosperity. However, the core business of libraries remains around books and reading. Given this, it is appropriate that the peak body, National and State Libraries of Australasia, has

commenced a review of the role of libraries in the literacy landscape that will recommend on strategic directions for the future.

The National Year of Reading in 2012 involves many partners, ambassadors, friends and supporters, but the driving force throughout 2012 is state, territory, public and school libraries. The NYR also looks beyond 2012 to build enduring partnerships between the many community and public contributors to Australia's reading culture. The legacy of the NYR rests on the identification of ways forward for libraries to continue to focus the nation on one of its most enabling attributes – the literacy and reading experiences of its people.

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Reading: the home and family context

Reading is an activity enjoyed by many, and widely held to be an essential component for success in education. Therefore, educators and policy-makers have been keen to promote an appreciation for, and engagement in, reading by children. Reflecting this, the National Year of Reading 2012 seeks to support "... children learning to read and keen readers finding new sources of inspiration."¹ Parents, and the family context more generally, are known to play an important role in helping children learn to read and in stimulating a continuing interest in independent reading. This article examines the important relationship between family context and children's reading in Australia, using the available data from *Growing Up in Australia: The Longitudinal Study of Australian Children* (LSAC).

Data from LSAC indicate that family context, according to such measures as visits to the library or reading to the child, strongly influences children's engagement in reading. The study also finds that while the majority of children enjoy reading, only a minority are very frequent readers. About one in ten children do

not enjoy reading and did not read on the diary day, though this proportion varies according to family context.

Measuring children's reading

There are different ways to measure children's engagement in reading. Some studies ask children to report the frequency of reading using predetermined categories such as 'reads every day', 'a few times per week', 'per month', 'per year', or 'not at all' (e.g. Clark and Foster, 2005). A second option is to ask children whether they read during a specified time period. For example, the ABS publication *Children's Participation in Cultural and Leisure Activities* (4901.0) reports on whether children read at all in the two weeks prior to interview. A third source of information on children's reading is time-diaries, where individuals report all their activities on a specified day or days (Egerton and Gershuny, 2004).

These measurement options vary in the extent to which they place restrictions on the time period over which children are asked



Image: National Year of Reading.²

to recall information on their engagement in reading. The first option tends to place few or no restrictions on the time period, while the second and third options are increasingly restrictive (two weeks and specified days respectively). As the time period narrows, there is an increasing likelihood of capturing the most frequent readers only (Mullan, 2010). This article uses information about children's reading for leisure gleaned from children's time-diaries in LSAC. As this measure tends to capture relatively more frequent readers, it is combined with information in LSAC about whether or not children enjoy reading. The results provide a comprehensive insight into children's reading in Australia.

Measures of children's reading in LSAC

Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) is conducted in partnership between the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA); the Australian Institute of Family Studies (AIFS); and the Australian Bureau of Statistics (ABS). However, the findings and views reported in this paper are those of the authors and should not be attributed to FaHCSIA, AIFS or the ABS.

LSAC is a major study that follows the development of children and families from all parts of Australia. The study commenced in 2004 with two cohorts – 5,107 families with children aged 0–1 year and 4,983 families with children aged 4–5 years. By following children over time, the study is able to examine the individual, family, and broader social and environmental factors that influence a child's development. *Growing Up in Australia* is investigating the contribution of children's social, economic and cultural environments to their adjustment and wellbeing. A major aim is to identify policy opportunities for improving support for children and their families and for early intervention and prevention strategies.

The older cohort of children, aged 4–5 years at the commencement of the study and 10–11 years by the time of the collection wave in 2010, is the focus of this article. LSAC collected responses from the 10–11 age group using time-diaries completed by children. This was the first time that time-diaries had been collected from children in an Australian

context. They have been used previously in other countries including the United States of America and the United Kingdom. A time-diary is a record of the sequence of all activities the child engaged in during the day prior to interview, and represents one of the most reliable methods of collecting information about children's engagement in different activities (Robinson, 1999). In addition to collecting information on children's engagement in reading for leisure on the diary day, LSAC asked the children whether they enjoyed reading. Enjoyment of reading is a natural precursor to engagement in reading and in particular reading for pleasure, which has been highlighted as an important aspect in the promotion of children's reading (Clark and Rumbold, 2006). Results from the 2009 Programme for International Student Assessment (PISA) show that, in Australia, more than a quarter of the differences in reading performance are associated with students' reading enjoyment.

To maximise the information about children's reading available in LSAC, data about children's self-reported enjoyment of reading and children's engagement in non-school reading for leisure (recorded in the time-diary) have been combined, creating a four-point indicator of children's reading, namely:

1. children who enjoy reading and who read for leisure on the diary day
2. children who enjoy reading but who did not read for leisure on the diary day
3. children who do not enjoy reading but read for leisure on the diary day, and
4. children who do not enjoy reading and did not read for leisure on the diary day.

The first part of the analysis is cross-sectional. Children's reading habits are examined in terms of their current characteristics, for example their mother's employment status. The second part of the analysis looks at the children's current reading habits, at age 10–11 years, in light of the family reading context when the child was aged 4–5 years, for instance, the numbers of days they were read to each week. The data here are particularly useful because LSAC is a longitudinal study. This means that the necessary data were

collected at the time and hence are much more accurate than retrospective data collected at a later time, which may be affected by recall bias (i.e. when people's recollection may overstate or understate past behaviours). LSAC therefore has the potential to identify early childhood influences on reading accurately.

LSAC sample description

In 2010, the older cohort comprised 4,164 children; of these, 3,961 completed a time-diary and reported whether they enjoyed reading or not, yielding a response rate of 95%. Although the sample is restricted to children aged 10–11 years, it encompasses the period of middle childhood, which is critical for later adolescent development (McHale, Crouter and Tucker, 2001), and in which the influence of the family context is particularly important (Hofferth, 2010).

The sample is split almost equally between boys and girls. Just over two-fifths (43%) of children

live in families where at least one parent has a university degree. For 77% of children, the mother is employed either full-time (36%) or part-time (41%). In 13% of families, the mother speaks a language other than English at home. Most children (86%) live with two parents (including step-parents). The sample is split fairly equally between those who did and those who did not visit a library (any type of library, in the month prior to the parent interview) when they were aged 4–5 years. The majority of children (85%) had more than 30 books in their home when they were aged 4–5 years, and 97% of children were read to at least one day per week (79% being read to at least three days per week) when aged 4–5 years (table 1).

Results from LSAC³

Reading by children aged 10–11 years

Overall, 30% of children enjoy reading and report reading on the diary day. A further 1% read on the diary day but do not enjoy

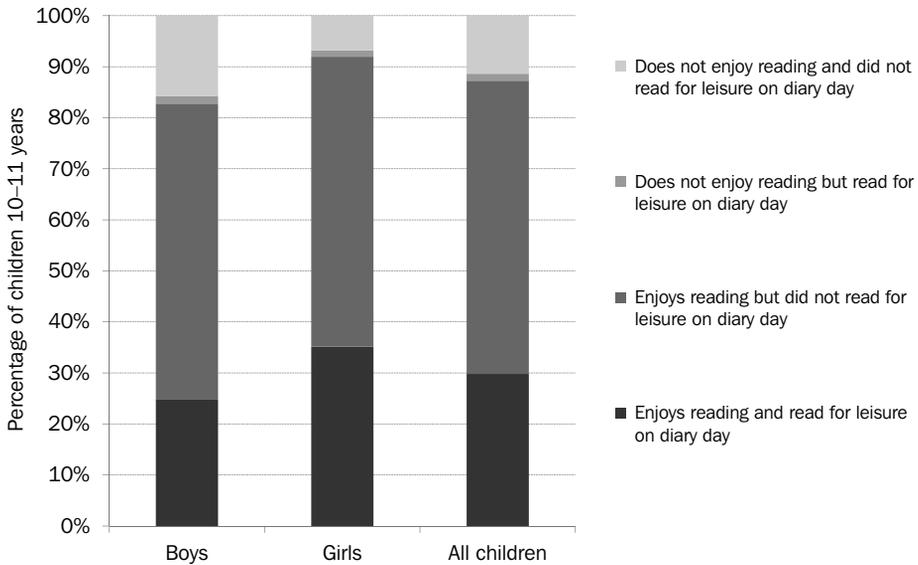
1. SAMPLE DESCRIPTIVE STATISTICS(a)

	CHILDREN 10–11 YEARS	
	Number	%
Child gender		
Boy	2 022	51
Girl	1 939	49
Parental education		
No degree	2 251	57
Degree	1 709	43
Mother's employment status		
Employed full-time (30+ hours/week)	1 406	36
Employed part-time (less than 30 hours/week)	1 591	41
Not currently employed	913	23
Mother's language spoken at home		
English	3 384	87
Non-English	509	13
Family type		
Dual parents family	3 357	86
Lone mothers	558	14
Visited library aged 4–5 years		
No	1 857	47
Yes	2 103	53
Number of books in household when aged 4–5 years		
0–29 books	576	15
30 or more books	3 384	85
Days read to in previous week when aged 4–5 years		
None	109	3
1–2 days	706	18
3–5 days	1 168	30
6–7 days	1 976	49

(a) Numbers may not sum to total due to missing values on some variables.

Source: LSAC Wave 4.

2. READING OF CHILDREN AGED 10–11 YEARS(a), By gender



(a) Weights applied.

Source: LSAC Wave 4.

reading. Therefore, a total of 31% of children read on the diary day, with the vast majority of children (87%) enjoying reading (graph 2). This is comparable with results from children's time-diary data in the United States of America showing that 27% of children aged up to 12 years were engaged in reading (Bianchi and Robinson, 1997).

The largest group of children enjoys reading but did not read on the diary day (57%). This group is likely to encompass less frequent readers, many of whom may read at least once over a period of at least a couple of weeks. The data on children's reading from LSAC are consistent with figures from the ABS Survey of Children's Participation in Cultural and Leisure Activities, 2009 stating that 72% of children aged 5–14 years participated in reading at least once over a two-week period.

Just over one child in ten (11%) does not enjoy reading and did not read on the diary day. This group is broadly comparable with non-readers or extremely infrequent readers in other studies. In the United Kingdom, Clark and Foster (2005) reported that 15% of children

aged 6–16 years never or almost never read. In the United States of America, Yankelovich and Scholastic (2008) reported that 9% of children aged 5–17 years never or almost never read. The age range of children varies in both these studies, but LSAC data on low or no reading engagement seems comparable with data elsewhere.

More girls than boys enjoy reading and read for leisure on the diary day, while fewer girls than boys do not enjoy reading and did not read on the diary day. Girls and boys are equally likely to enjoy reading but not to have read on the diary day. They are also equally likely to be reluctant readers. Overall, girls read more often, and are more likely to enjoy reading.

Family characteristics

Parental education

Research has consistently shown that children with more highly educated parents are more likely to enjoy reading and to read more often (e.g. Hofferth and Sandberg, 2001; Mullan, 2010). This finding is confirmed by the LSAC data.

Overall, children with highly educated parents are more likely to enjoy reading than those in low education households (90% compared with 85%). However, parental education has a stronger association with children's engagement in reading on the diary day. Almost twice as many children in high education households enjoy reading and read on the diary day (41%) as children in low education households (23%). Moreover, twice as many children in low education households (14%) do not enjoy reading and did not read on the diary day as those in high education households (7%). The overall association between children's reading and parental education is clear (graph 3).

Mother's employment status

Many studies on the impact of maternal employment on children's cognitive and socio-emotional outcomes have failed to find significant differences between children with a mother in employment and those without (Russell and Bowman, 2000; Pleck, 1985; Yunos and Talib, 2009). Similar results from LSAC

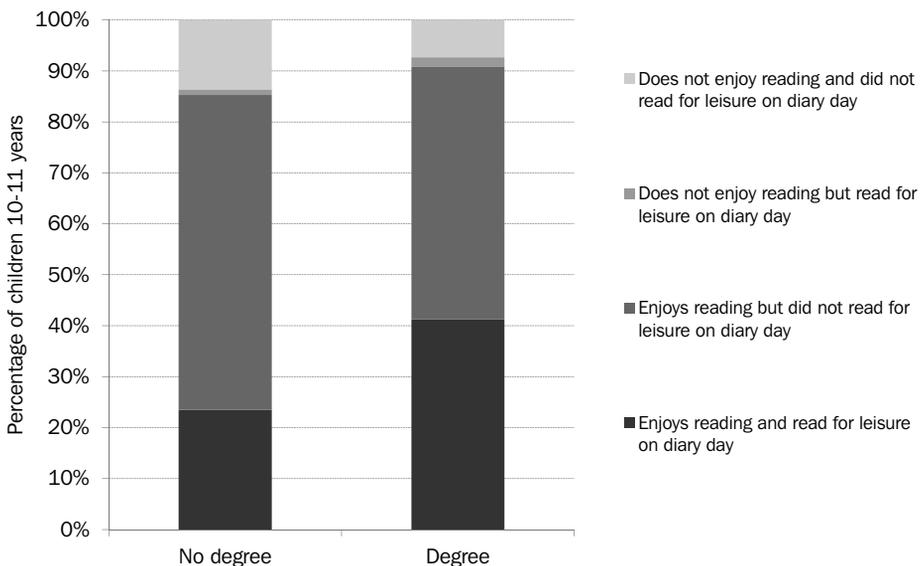
suggest that the reading behaviour of children aged 10–11 years does not vary according to mother's employment status (graph 4).

Irrespective of whether the mother was employed full-time, part-time or not employed at the time of the survey, around 87% of children reported that they enjoy reading, with around 30% reading on the diary day. Among children who enjoy reading, those who live in a household with mothers employed part-time are slightly more likely to report reading on the diary day (32%) than are children living in a household with mothers employed full time (28%) or not employed (28%).

Mother's language spoken at home

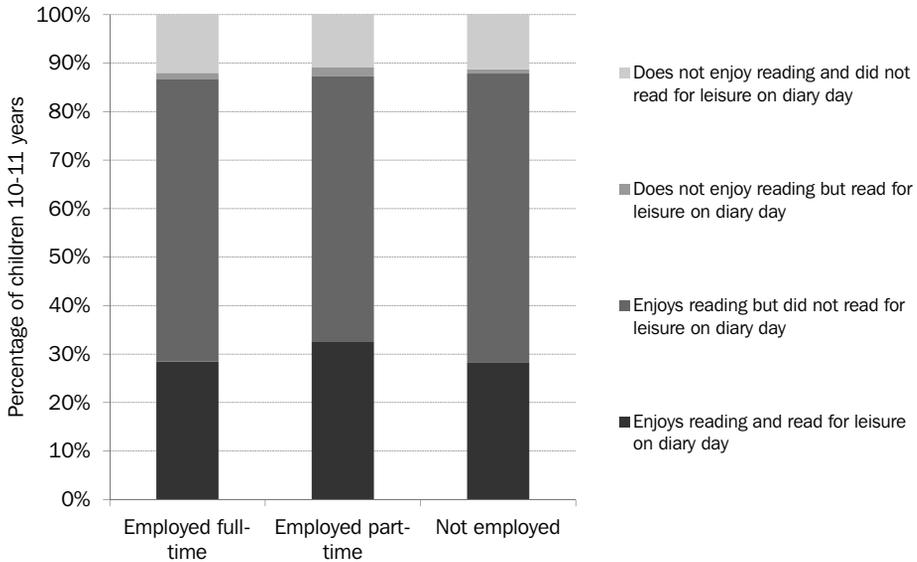
Results from LSAC show that, in Australia, children's reading may well benefit from having a mother who speaks a language other than English at home. Overall, children aged 10–11 years in households where the mother speaks a language other than English at home are more likely to enjoy reading (91%) than are children in households with a mother who only speaks English at home (87%) (graph 5).

3. READING OF CHILDREN AGED 10–11 YEARS(a), By parental education



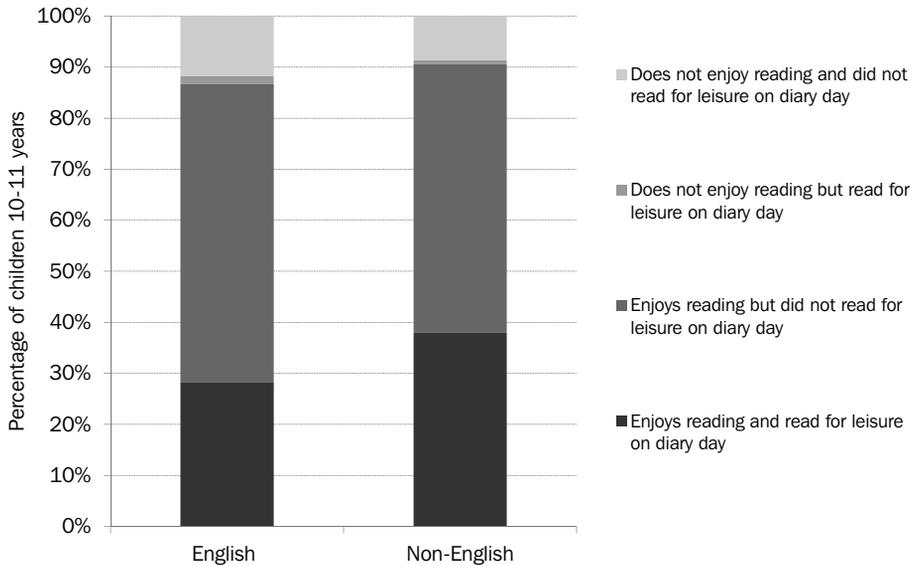
(a) Weights applied.
Source: LSAC Wave 4.

4. READING OF CHILDREN AGED 10–11(a), By mother’s employment status



(a) Weights applied.
Source: LSAC Wave 4.

5. READING OF CHILDREN AGED 10–11(a), By mother’s language spoken at home



(a) Weights applied.
Source: LSAC Wave 4.

Mothers speaking a language other than English at home also had a strong positive effect on whether a child read on the diary day. The proportion of children who enjoy reading and who read on the diary day was 38% for those living in a household with a mother speaking a language other than English, compared to 28% of children in households with a mother who spoke English only.

Family type

A considerable body of research shows that children growing up in a single mother family face a number of disadvantages compared to children growing up in two-parent families (Haurin 1992; McLanahan and Sandefur, 1997). However, the differences in children's reading outcomes may be related to broader socio-economic characteristics rather than family type alone (Edwards et al. 2009; OECD, 2011). For example, results from the 2009 PISA suggest that there is no significant relationship in reading performance between children in single parent families and children from dual-parent families, once socio-economic

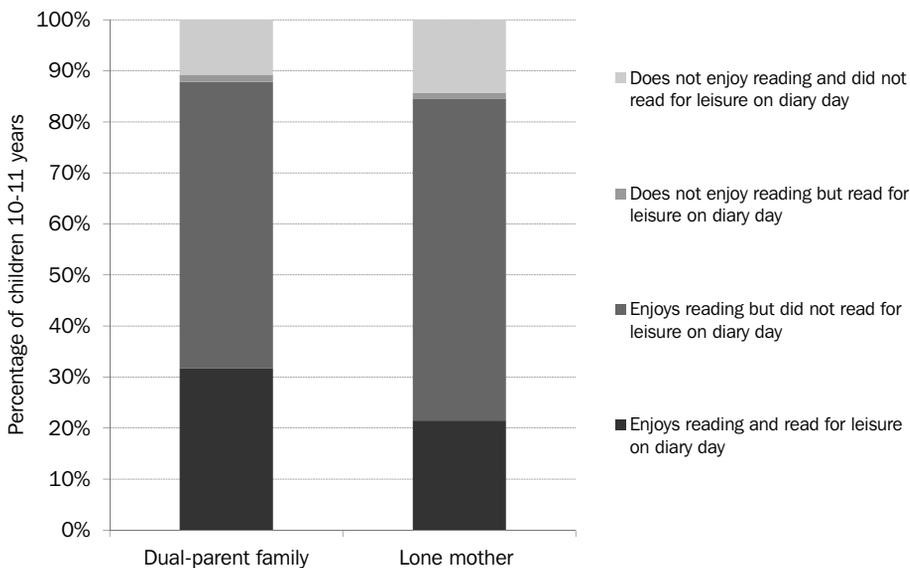
background had been taken into account (OECD, 2011).

Results from LSAC show that 88% of children in households with two parents enjoy reading, and 32% of children in dual-parent families enjoy reading and report reading on the diary day. The vast majority of children in lone mother households enjoy reading (85%), with 21% enjoying reading and reading on the diary day (graph 6). These results suggest that family type has no effect on overall enjoyment of reading, but there is a significant difference by family type in whether a child who enjoys reading actually read on the diary day. The difference in reading behaviour on the diary day might also be due to other factors (e.g. different daily routines between children from different family structures).

The family reading context

We now use the longitudinal dimension of LSAC to look back at the family reading context of the older cohort when they were aged 4–5 years. The influence of the family reading

6. READING OF CHILDREN AGED 10–11(a), By family type



(a) Weights applied.
Source: LSAC Wave 4.

context in children’s early years strongly influences children’s reading later in life (Baker, Scher and Mackler, 1997; Senechal and Le Fevre, 2002). Moreover, using indicators derived when children are aged 4–5 years enables the exclusion of any influence of school upon children or parents, thus keeping the influence of the family context separate from potential school effects. Factors related to the family reading context available from LSAC are: the number of books in the family home, whether the child visited a library, and the extent to which the child was read to in the week prior to interview.

Number of books in household at age 4–5 years

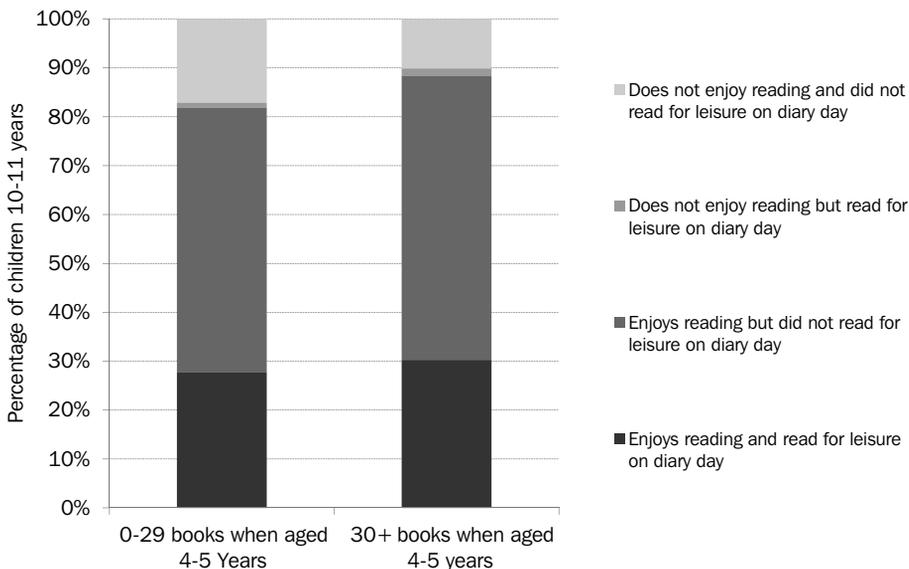
Children who lived in households with 30 or more books when aged 4–5 years are more likely to enjoy reading (88%) at age 10–11 years than are those who lived in households with fewer than 30 books (82%). Those from households with 30 or more books are slightly more likely to enjoy reading and read on the diary day (30%) than those from households with fewer than 30 books (28%). This suggests

that for those aged 10–11 years, the presence of a relatively large number of books in the home when aged 4–5 years is more strongly associated with the enjoyment of reading in general than with reading on the diary day. Finally, a higher percentage of children from households with fewer than 30 books do not enjoy reading and did not read on the diary day (17%) than of those from households with 30 or more books (10%) (graph 7).

Library visit at age 4–5 years

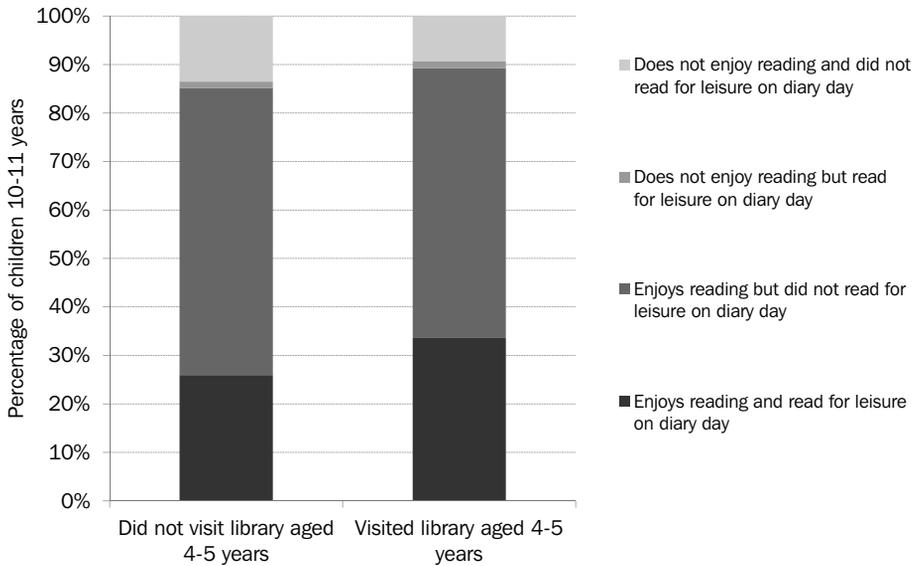
A ‘library visit’ refers to a visit to any type of library in the month prior to interview. Results show that visiting a library when aged 4–5 years is positively associated with children’s engagement in reading at age 10–11 years. Children who had visited a library when aged 4–5 years were more likely to read on the diary day and enjoy reading (34%) than those who had not (26%). Children who did not visit a library when aged 4–5 years are more likely to not read on the diary day and not enjoy reading (14%) than children who visited a library (9%) (graph 8).

7. READING OF CHILDREN AGED 10–11(a), By number of books at home at age 4–5 years



(a) Weights applied.
Source: LSAC Wave 4.

8. READING OF CHILDREN AGED 10–11(a), By library visits at age 4–5 years



(a) Weights applied.

Source: LSAC Wave 4.

Reading to a child at age 4–5 years

Graph 9 shows that children aged 10–11 years who were read to when aged 4–5 years were more likely to enjoy reading and to have read on the diary day than were children who were not read to.

A relatively high proportion (37%) of children who were read to six to seven days per week (in the week prior to interview) when aged 4–5 years enjoy reading and read on the diary day. By contrast, only one-fifth (21%) of children who were not read to when aged 4–5 years or read to only one to two days per week enjoy reading and reported reading on the diary day. Children who were read to three to five times by a carer in the week prior to interview lie between these two extremes (27%).

Children who were not read to when aged 4–5 years are reasonably likely to not enjoy reading and to have not read on the diary day (18%). This proportion is 8 percentage points higher than for children who were read to six to seven days per week (10%).

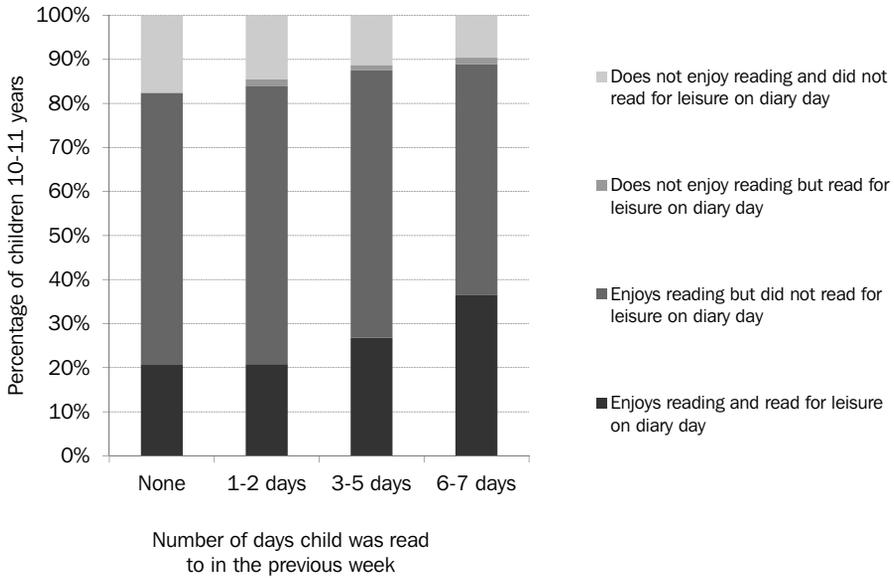
Reading and other activities

Looking again at the diary day without reference to the past, children aged 10–11 years who watch TV and play computer games are less likely to read for leisure while children who do homework and play board games are more likely to do so (table 10). It is important to stress that these are cross-sectional associations and are not conclusive evidence of the displacement of one activity for another.

There were no significant differences between boys and girls aged 10–11 years with respect to the association between reading and other activities.

Television viewing is the most common activity among children aged 10–11 years, with 86% of all children reporting this activity on the diary day. The proportion of children who watched TV is lower among those who read on the diary day (81%) than among those who did not read (88%). Boys who engage in organised sports were less likely to report reading than boys who did not. However, this association was not observed for unorganised sports, or among girls.

9. READING OF CHILDREN AGED 10–11 YEARS(a), By parental reading at age 4–5 years



(a) Weights applied.

Source: LSAC Wave 4.



Image: Victorian Government's Young Readers Program 2007–11 Final Report (Kelly et al., 2011) (photo by Andrew Lloyd, courtesy State Library of Victoria).

**10. ENGAGEMENT IN OTHER ACTIVITIES FOR ALL CHILDREN 10–11 YEARS(a),
By those who report reading for leisure, and those who do not**

	TV (%)	Sport (%)	Computer games (%)	Homework (%)	Board games (%)
No reading	88	79	49	30	25
Reading	81	78	45	35	30
Total	86	79	48	35	27

(a) Weights applied.

Source: LSAC Wave 4.

Children who reported reading were less likely to report playing computer games (45%) than those who did not report reading (49%). This association is concentrated in games using 'PlayStation' or other similar game consoles, rather than games played on a personal computer. This may be associated with differences in the cognitive or other developmental aspects of different types of computer game formats.

Reading is positively associated with homework and board games. The proportion of children who report doing homework is higher among those who read (45%) than among those who do not read (30%). This represents the largest gap between children who read and those who do not read on the diary day in engagement in any of the other activities. This result likely highlights a correlation between interest in reading and concern with doing well at school on the part of both parents and children, which is likely related to parental education and socio-economic status.

Conclusion

This article has described children's engagement in, and enjoyment of, reading using data from LSAC, including data from the first self-completed child time-diary in Australia. It highlights the importance of the family context in promoting children's reading, in particular in more active involvement such as organising visits to the library or by reading to children. In this National Year of Reading, it is important to note that while the majority of children enjoy reading, only a minority are frequent readers. Furthermore, the data from LSAC show that overall about one in ten children do not enjoy reading and did not read on the diary day, ranging from 7%–18% depending on family context. Efforts to increase children's engagement in reading will likely be enhanced if the full range of children's attitudes towards, and engagement in, reading are taken into consideration in the design of specific programs.

Endnotes

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2. National Year of Reading 2012, website, last viewed 24 November 2011, <http://www.love2read.org.au/library/nyor2012_A4_flyer_FINAL.PDF>.
3. All differences presented in the text are statistically significant at the 5% level or higher, unless stated otherwise.

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Australian Year of the Farmer 2012

In 2012, Australia celebrates the Australian Year of the Farmer. This feature article recognises the year by looking at the contribution of farming in Australia to the economy, society and environment. The article was based on text kindly provided by the Australian Year of the Farmer Secretariat.

Other articles in this edition of *Year Book Australia* also celebrate the Australian Year of the Farmer. Chapter 8 *Labour* has a special article, *Labour force and other characteristics of farmers*, and chapter 23 *Tourism* has a special article, *Farm visits in Australia*.

Chapter 16 *Agriculture* has three articles on farming – *Agricultural land and water ownership*, *Migrant farmers* and *Organic food and farming in Australia*.

Farming in Australia

Like many countries, farming has been at the forefront of Australia's development. It has fed the growing population and provided an underlying economic lynchpin that has been vital to Australia's prosperity. For instance, the expression "riding on the sheep's back" was once associated with the prosperity that Australia derived from producing and exporting wool.

Australia's agriculture sector continues to be a significant contributor to our economy, with the gross value of agricultural production in 2009–10 estimated at just under \$40 billion (*Value of Agricultural Commodities Produced, Australia, 2009–10, 7503.0*).

Australia's agricultural businesses not only provide for Australia's population, but the sector is also a significant exporter and contributor to our economy, with farm exports in 2010–11 valued at \$32.4 billion (ABARES, 2011a). Food and clothing are fundamental requirements of life and our farmers produce

most of the food that Australians put on their tables as well as wool and cotton – raw materials for clothes we wear.

The farming sector helps connect all Australians, both urban and rural, through what it does and what it provides. Farming has helped shape our nation – it is embedded into our daily life, is a major contributor to our economy and will help sustain our population and those of our export partners in the years to come.

How it all began

Farming has come a long way from the first agricultural endeavours; no-one would have envisaged the huge farming industry that has subsequently developed in less than 250 years.

The birth of farming, as we know it today, started from very humble beginnings. Three months after the arrival of the 'first fleet' in January 1788, the livestock in the colony





Old farm equipment on foggy morning, South Australia.

consisted of seven horses, seven cattle, 29 sheep, 74 pigs, five rabbits, 18 turkeys, 29 geese, 35 ducks and 209 fowls (*Year Book Australia 2001*, 1301.0).

Shortly after the fleet's arrival at Port Jackson, Sydney in January 1788, farming was initiated at Farm Cove, now the site of the Royal Botanic Gardens in Sydney. This was also the site for the launch of the Australian Year of The Farmer by the Governor-General of Australia, Her Excellency, Ms Quentin Bryce AC, in October 2011. On the day, Ms Bryce planted a citrus tree and installed a plaque within the first farm garden to mark the start of the celebration of the continuing importance of Australian farming to all Australians and the contribution it makes to our daily lives.

About two years after the arrival of the first fleet from England, Captain Arthur Phillip assigned land to the ex-convict James Ruse at Rose Hill (now Parramatta). This was the first land grant in Australia for the purpose of establishing farming on a larger scale. 'Experiment Farm' as it was known, was the location of Australia's first wheat farm (National Trust of Australia, 2005).

By 1860, after only 70 years of European farming settlement, there were already 1.2 million acres (or 480,000 hectares) under crop and livestock numbers had increased to 25 million head (*Year Book Australia 2001*, 1301.0).

The changing nature of the Australian farmer

There have been many changes in farming methods over the decades, but the image of Australian farmers incorporates a strong sense of tradition, adaptability and resilience born of necessity. Indeed, this strength of character and resolve was required to make farming in our dry continent a success.

While the world of farming has changed significantly since the First Fleet landed, the image of the Australian farm remains a recognisable icon for the Australian way of life. It is captured by mental images of kelpies rounding up sheep, dusty utes, fields of shimmering wheat and stockmen in battered Akubras.

Increasingly, however, these images are joined by a more contemporary picture of well-



educated and environmentally-aware farmers using laptop computers and sophisticated farming equipment to remain viable players in a keenly competitive international market.

According to the 2006 Census, almost one-third (31%) of those employed in the agriculture industry had achieved post-secondary education levels, predominantly at certificate, diploma or bachelor degree levels (Census of Population and Housing, 2006). This is more than double the 14% recorded 25 years earlier in the 1981 Census (*Census of Population and Housing, 1981*, 2103.0).

In 2010, over 77,000 students were enrolled in agriculture, environmental and related studies through Vocational Education and Training (VET) programs across Australia (NCVER, 2011).

The speed of change over the past 200 years has been exceptional and has accelerated significantly over the past 60 years. An obvious example is the adoption of information and communication technologies.

In June 2011, there were an estimated 10.9 million Internet subscribers in Australia and a

further 9.7 million mobile handset subscribers with the capability to access the Internet (*Internet Activity, Australia, June 2011*, 8153.0). Australian farmers today use a range of technologies to continuously adapt and improve their farming practices. For example, in 2007–08, over 92,000 farm businesses (or 66%) used the Internet for their business operations (*Use of the Internet on Farms, Australia, 2007–08*, 8150.0).

Australian agricultural ingenuity and productivity

Australia is a land of climatic extremes that have brought numerous challenges to farming. These have led to inventions and methods of production that have often put Australia at the forefront of world agricultural development.

The invention of the combine header harvester and stump-jump plough, and improved strains of drought and disease-resistant wheat, are just several inventions or adaptations that show the ingenuity of Australian agriculture. Australian farmers have also been quick to adopt large scale mechanisation, irrigation practices and

grain handling and storage systems in order to remain price-competitive.

The gains in production made by Australian farmers over the decades have been impressive. For example, in 1966–67, less than 50 years ago, Australia's dairy cattle herd was producing around 2,380 litres of milk per cow annually. In 2010–11, annual production had more than doubled to 5,675 litres per cow (ABARES, 2011b).

Increases in productivity have occurred due to a combination of factors, including innovative farming techniques, scientific developments in areas such as plant and animal breeding, and improvements in management of crops, livestock, land, water and pests. Supporting these innovations is the increased availability and use of sophisticated machinery and information technology that allow our farmers to work smarter.

Investment in innovation and research and experimental development (R&D) also ensures that our farming practices remain competitive. In 2009–10, more than 32% of agriculture, fishing and forestry businesses were actively engaged in innovation activities

(*Summary of IT Use and Innovation in Australian Business, 2009–10*, 8166.0). In the same period, agricultural businesses spent almost \$102 million (of which just under \$98 million was self-funded) on R&D into agriculture (*Research and Experimental Development, Businesses, Australia, 2009–10*, 8104.0).

Over the period 2000–01 to 2010–11, the Agriculture, forestry and fishing industry recorded an average annual growth rate in labour productivity of 5.3%, the highest of all industries (*Australian System of National Accounts, 2010–11*, 5204.0).

The environment and sustainability

For the first farmers, the challenges were all about adapting to Australian conditions. This emphasis remains today, with droughts, floods, storms and bushfires often affecting agricultural production.

With farmers using over half of Australia's landmass, managing land and water-based natural resources is critically important, both environmentally and economically. In 2006–07, more than 94% of agricultural businesses



reported undertaking activities, costing almost \$3 billion, to prevent or manage weeds, pests, and land and soil problems (*Natural Resource Management on Australian Farms, 2006–07*, 4620.0).

In 2010, 65% of all agricultural businesses reported having native vegetation on their holding and 55% of these businesses protected this native vegetation for conservation purposes. Similarly, half of all agricultural businesses reported rivers or creeks on their holding, with 55% of these protecting their river or creek banks. Wetlands were reported by 12% of all agricultural businesses, with 57% of these businesses reporting that they had protected these wetlands (*Land Management and Farming in Australia, 2009–10*, 4627.0).

Technological and scientific advancements to protect the environment have included:

- the introduction of the *Cactoblastis* moth, to control spread of the Prickly Pear cactus
- the introduction of the myxoma virus (myxomatosis), and more recently the rabbit calicivirus, to control rabbit numbers
- the implementation of holistic systems such as integrated pest management and cell grazing, and
- the use of satellite positioning systems to assist in land management by, for example, controlled traffic farming to minimise soil compaction.

Rising to the challenge of future population growth

Much has been written about food security, which refers to availability of, and access to, suitable food. The United Nations Food and Agriculture Organization (FAO) defines food security as existing:

“... when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” (FAO, 2009a)

Australia’s resident population is estimated to increase to 35.5 million by the year 2056, based on current trends in fertility, life

expectancy at birth and net overseas migration (*Population Projections, Australia, 2006 to 2101*, 3222.0).

The world’s population continues to grow at a rapid rate and in late 2011 was estimated at just under 7 billion. By 2050, it is projected that there will be 9.3 billion people on our planet, with nearly all of the population growth occurring in developing countries, including sub-Saharan Africa and India (United Nations, Department of Economic and Social Affairs, 2011). With a third more mouths to feed than there are today, FAO has estimated that by 2050, food production worldwide will need to increase by 70% (FAO, 2009b).

In addition, increasing disposable income in developing countries is stimulating a different pattern of food consumption in these countries, with higher demand for livestock products (meat, milk and eggs), vegetable oils and to a lesser extent, sugar (ABARES, 2011c).

In 2010, there were an estimated 134,000 agricultural businesses across Australia operating on 400 million hectares (or 52% of the nation’s landmass), including 26 million hectares under crop (*Agricultural Commodities, Australia, 2009–10*, 7121.0). These businesses not only help feed and clothe over 22 million Australians, but Australia also contributes to food supply internationally, with around 60% of our agricultural production exported (ABARES, 2011b).

Although imports are playing a larger role in Australia’s food supply, particularly imports of processed and frozen fruit and vegetables, overall Australia remains a net exporter of food. In 2010–11, 67% of Australia’s wheat production, 70% of our sugar production and 57% of the nation’s barley production were exported (ABARES, 2011b).

Australia’s net food exports were valued at \$16 billion in 2010–11, with grains and oilseeds, meat, wool and dairy the main food types, by value, exported. Our main food export partners, in terms of value, were Japan, Indonesia, the United States of America and China (ABARES, 2011a).

Advances in agricultural productivity have been the main factor behind increased food



production in the past. Further productivity advances, through continued adoption of technical change, improvements in technical efficiency and structural adjustment within the farming sector will be critically important to the ability of humankind to feed itself in the future.

Australian farmers have a critical role to play in not only ensuring that every Australian family has access to sufficient, safe and nutritious food, but also in reaching out to help support the global community.

Connecting with urban communities

More than 60% of Australia's population lives in the five largest cities (Sydney, Melbourne, Brisbane, Perth and Adelaide) (*Regional Population Growth, Australia, 2009–10*, 3218.0). Whilst farming is intrinsically linked to every urban dweller (in its simplest form, through the food that we eat), there are many city-dwellers who have never had a farm experience or who do not consider from where the meal on the table has originated.

To a degree, this gulf is being reduced by the burgeoning number of farmers' and growers' markets opening up across Australia. There is significant community interest in being able to procure fresh local produce directly from growers and in having the opportunity to interact directly with them.

One of the main aims of the Australian Year of the Farmer 2012 is to recognise and enrich the connections between rural and urban Australia.

The Year aims to build on the respect and interest city people already have for life in the rural sector. This is evident from high levels of attendance at the annual Royal Agricultural Shows in the capital cities, with hundreds of thousands of people attending the Sydney Royal Easter and Royal Melbourne Shows each year.

Yet there are more ways that urban and farming communities are connected. While the share of people employed in the Agriculture industry nearly halved (from 4.8% to 2.5% of all persons employed) in the two decades to February 2012 (*Labour Force, Australia, Detailed, Quarterly, Feb 2012*, 6291.0.55.003), agricultural



production has significant multiplier effects for other industries. These include activities such as supply of the goods and services that are inputs to agricultural production, and the downstream activities supported by agriculture (such as transport, processing and sale of agricultural commodities). Particular examples can be found in the Food retailing industry, which employed 434,000 people in Australia in 2009–10, and the Food product manufacturing industry, which employed 210,000 people (*Australian Industry, 2009–10*, 8155.0).

The Australian Year of the Farmer 2012 is about celebrating and enriching the connections between rural and urban Australia. It provides an opportunity for all Australians to better understand and value the ongoing significance of agriculture and the role of farmers in our daily lives. Various events, initiatives and educational programs are being held across the nation throughout 2012, as part of the program. Plans include:

- a roadshow travelling more than 56,000 kilometres and attending more than 300 events, including agricultural shows, field days and other cultural events

- an Agricultural Innovation and Technology Expo, incorporating the most significant food event to be held in Australia, the Food of Origin Extravaganza, which will promote the quality and origin of Australian food products – from ‘wheat to bread’ and ‘paddock to plate’, and
- a Living Farm Display.

Education will be a strong focus, as will the career opportunities available in the agribusiness sector.

Some icons of Australian farming

John Macarthur (1767–1834) and his wife Elizabeth are recognised for their early development of the Australian Merino sheep breed and the birth of the Australian wool industry. Older Australians would remember Macarthur from his place on our old two-dollar note.

Frederick York Wolseley (1837–1899) emigrated from Ireland in 1854 and worked initially as a jackaroo on a sheep station near

Deniliquin, New South Wales. In 1872, he developed a working model for a mechanical sheep shearing machine. By the mid 1880s, Wolseley's sheep shearing machine was being demonstrated around the country to the delight of woolgrowers and the horror of blade shearers. In 1888, Dunlop station, at Louth in New South Wales, had become the first large machine shed, with 40 Wolseley shearing stands operating.

Richard Bowyer Smith (1837–1919) was the inventor of the stump-jump plough, which solved the problem of preparing mallee scrub lands across much of southern Australia for cultivation. The plough consisted of hinged shares which would rise out of the ground when the blade encountered an underground obstacle such as a mallee tree stump or large stone, with weights then forcing the blade back into the ground after the obstruction was passed. The invention was adopted almost universally across the mallee lands.

William James Farrer (1845–1906) is most famous as a wheat breeder who developed varieties that tackled issues particular to Australia. His Federation variety had drought and rust disease resistance that helped expand wheat farming in Australia.

Sir Sidney Kidman (1857–1935) was known as the Cattle King and famously used his experience and understanding of the Australian environment and business to build an empire of cattle stations. He ended up with over 100 properties, from the top of the Northern Territory and Western Australia to South Australia. They were in two 'chains' and used river systems to 'drought-proof' the empire and move cattle in good condition from the north to markets in the south. Sir Sidney was involved in many other business and entrepreneurial activities during his lifetime, but is most famous for this strategy and for becoming the world's largest private landholder.

Hugh Victor McKay (1865–1926) developed the stripper harvester in a workshop on his family's farm in Central Victoria. The machine could

gather and thresh ripe grain heads, separate the grain from the chaff and deliver the grain for bagging. Though not the first to develop the technology, his Sunshine Harvester became a very popular harvester of the era, with sales domestically and exports to North and South Africa, and South America. McKay went on to become Australia's largest industrialist and manufacturing exporter and his company's factory was the largest in Australia for a time. His business founded and developed the town of Sunshine, now a suburb of Melbourne.

Reginald Murray (RM) Williams (1908–2003) was born on a farm in mid-north South Australia. Like many early rural Australians, he had many careers – camel boy, drover, well-digger, bookmaker, miner, businessman, historian, author and leatherworker. He is most famous as the founder of the R.M. Williams boots and clothing brand that has become an icon of rural Australia. He was also a chief instigator for establishment of the Stockman's Hall of Fame and Outback Heritage Centre in Longreach, Queensland.

Lewis Bandt (1910–1987) invented the 'ute' (short for 'utility') that has become an icon of farming throughout Australia. An unknown Gippsland farmer's wife started it all in 1932 when she wrote a letter to the Ford Motor Company in Australia, asking the company to "... build her a vehicle that could take her family to church on Sunday and the pigs to market on Monday". Ford, through Bandt, produced the first production 'ute' in 1934. The idea quickly spread to the United States of America and in a short time from that initial letter, utes (or 'pickups' in the USA) became vital pieces of farm equipment.

Dame Mary Durack (1913–1994) was a member of the famous Durack family, linked with the development of agriculture in Northern Australia, particularly in the Kimberley region of Western Australia. Dame Mary captured the strategies used and the pioneering history of those regions in her famous books *Kings in Grass Castles* and *Keep Him My Country*.

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International Year of Co-operatives 2012

In 2012, Australia celebrates the United Nations International Year of Co-operatives. This feature article recognises the year by looking at the role of co-operatives in the Australian economy and society. The Australian International Year of Co-operatives Secretariat co-ordinated contributions to the article and individual contributors are acknowledged with their contribution.

There are also special articles in Year Book Australia 2012, recognising the Year. These articles were also arranged by the Secretariat and can be found in chapters 3 *Aboriginal and Torres Strait Islander Peoples*, 10 *Housing*, 11 *Health*, 17 *Forestry and fishing* and 27 *Financial system*.

On 18 December 2009, the United Nations proclaimed 2012 as the International Year of Co-operatives (IYC). The UN recognises that the co-operative business model is a major factor in realising economic and social development. It called on governments, international institutions, co-operatives and other stakeholders to support the development and growth of co-operatives worldwide.

The Australian Government supported the resolution and endorsed the Australian International Year of Co-operatives Secretariat as the national focal point for the Year in Australia in 2012.

At the outset, it is useful to distinguish the legal from the functional form of co-operatives. Co-operatives in Australia operate under different legal structures depending on the nature and regulatory requirements of their business activities. The varying incorporations and legal structures include state-regulated co-operatives, Commonwealth-regulated public companies, associations and specially regulated financial or insurance mutuals.

Functionally, all co-operatives share common features such as member ownership and democratic control of the entity by members. These characteristics are reflected in the seven international principles, presented in diagram 2, and are captured in a two-part test often used to identify co-operatives, through 'economic purpose' (primarily to benefit members) and 'governance control' (one-member one-vote).

The distinction between the legal and functional form is referred to in several places in this feature article.



Co-operatives in Australia

Co-operatives in Australia – an overview

This article was contributed by Todd Green of Regional Development Australia Mid North Coast.

Co-operatives are people-centred organisations that are owned, controlled and used by their members. Each member has an equal say in what the co-operative does – so in addition to receiving the products and services they need, members help shape the decisions that their co-operative makes. The main purpose of a co-operative is to benefit its members.

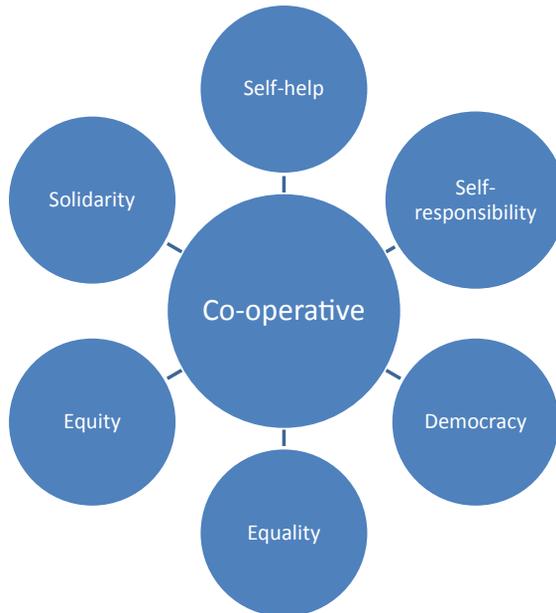
Co-operatives are based on the values shown in diagram 1. These values are put into practice through the seven international co-operative principles shown in diagram 2.

Diagram 3 shows how a co-operative in Australia is identified and regulated.¹ Co-operatives may be distributive or non-

distributive co-operatives, broadly reflecting economic and social benefits respectively. Distributive co-operatives are formed to undertake commercial operations where members can share in profits made from trading and benefits from asset growth. The sharing of profits from a distributive co-operative can include dividends, rebates, reduced costs and/or enhanced services. A non-distributive co-operative can be formed with or without shares; commercial activities can be undertaken, although surplus funds are not distributed to members but used to support the activities of the co-operative. Both types of co-operatives require their members to maintain an active relationship with the co-operative. An active membership can include purchasing or supplying goods or services, paying an annual subscription, or being a tenant of a housing co-operative.

Co-operatives in Australia are involved in a wide range of activities, falling broadly into four categories: consumer (buying and

1. CO-OPERATIVE VALUES



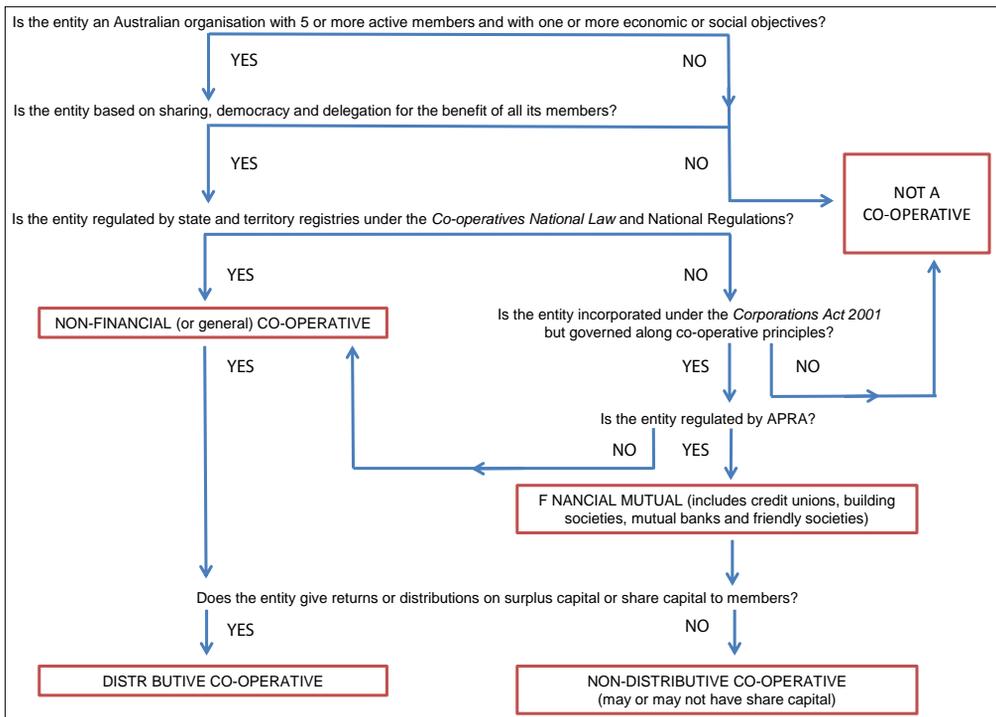
Source: The International Co-Operative Alliance, <<http://www.ica.coop/coop/principles.html>>.

2. CO-OPERATIVE PRINCIPLES



Source: *The International Co-Operative Alliance*, <<http://www.ica.coop/coop/principles.html>>.

3. IDENTIFICATION OF AUSTRALIAN CO-OPERATIVES(a)



(a) Reflects the situation after the signing of the *Co-operatives National Law* and the *National Regulations*.

Source: *Australian Bureau of Statistics based on information from various sources.*

selling goods to members at a competitive rate); marketing (branding, marketing and distributing members' products and services); service (providing services to members, such as health, electricity or housing); and community (resource, information and skill sharing that encourages ownership and participation). Financial co-operatives comprise credit unions, mutual building societies and friendly societies.

Recent changes

This material was contributed by Co-operatives Australia.

In recent years, the Australian 'co-operatives sector' has been characterised by:

- large co-operatives growing organically and through mergers
- losses due to mergers and demutualisation
- emergence of new fledgling co-operatives and
- low levels of understanding and teaching with regard to the co-operative business model.

As a consequence of an ageing and diminishing membership, a number of co-operatives have demutualised in recent years. Strong balance sheet growth sometimes fuels demutualisation, with members persuaded to give up ownership and control in return for a one-off cash or cash/investor share offer.

Some co-operatives have defied the trends, growing through innovative organic growth, mergers and joint ventures. New co-operatives have also emerged in recent years, demonstrating that member ownership and control remains a viable business model.

It is hoped that the United Nations 2012 International Year of Co-operatives will provide a focus on co-operatives and other member-owned businesses.

The incoming *Co-operatives National Law* will modernise the law governing Australian co-operatives and is expected to renew interest in the co-operative model.

The sustainable co-operative enterprise

This article was contributed by Professor Tim Mazzarol and Dr Elena Mamouni Linnios from the University of Western Australia.

Co-operatives are unique business organisations, owned and controlled by their members. The co-operative enterprise is one of the oldest forms of business and dates back to at least the 15th century. Traditional co-operatives are open to all regardless of race, gender, religion or political persuasion. They are also highly democratic, with a one-member one-vote system of governance.

Limited understanding of the co-operative business

Despite becoming a global movement, co-operative enterprise is not well understood by policy-makers, legislators or the general public. Co-operatives have been termed the 'enfants terribles' of economics (Levi and Davis, 2008). They are arguably too social for mainstream economics and business – but too economic and business-oriented for the non-profit sector. Minimal attention has been given in management textbooks and academic curricula to co-operative enterprises. It is also rare to find specialised training programs for managers and executives of co-operatives within Australia. While continuing to be an important part of the world's economy, co-operative enterprise has been given relatively scant attention within academic research in comparison to other fields of management and economics.

In Australia, understanding of co-operatives is particularly difficult because several member-owned organisations that embrace co-operative principles have historically opted to register under the *Corporations Act 2001* (Cwlth) instead of the relevant Co-operatives Acts. The lack of date of national legislation and lack of uniformity of state and territory laws could be a contributing factor. The need to find appropriate governance structures that accommodate the, often conflicting, interests of member democracy and investor returns may be another reason for this trend.

Managerial challenges

The unique managerial and governance challenges faced by co-operatives relate to their ability to provide direct and indirect socio-economic benefits to members, whilst retaining or raising sufficient capital to invest in the business in order to ensure its long-term resilience. When a co-operative is generating significant surplus capital, members may request higher compensation by way of reduced transaction costs, lower prices or higher distribution. Members commonly have a shorter investment horizon than the organisation and do not always see a personal benefit from organisational decisions aimed at increasing the business's competitive position in the market. Their inability to adjust their personal holding in the co-operative and associated investment risk can result in member pressures to streamline the co-operative investment portfolio according to members' risk profiles.

A multiplicity of ownership, financial and control structures for organisations adhering to the international co-operative principles have generically emerged within Australia and internationally in order to better address internal and external challenges facing co-operatives. These can range anywhere from traditional and proportional investment co-operatives, to publicly traded investor-oriented firms (Chaddad and Cook, 2004).

Australian-led, international research project

The University of Western Australia leads an international research project examining the multiple facets of co-operative enterprises and their impact on organisational resilience. The project will develop an inter-disciplinary research exchange over co-operative enterprise within the wider social enterprise, innovation and economics fields. As part of the project, a conceptual framework has been developed that seeks to understand the co-operative enterprise business model and the forces that influence its membership, governance, organisational structure and interaction with the external environment. A key element of the framework is the need for the co-operative to develop a member value proposition that is built around a clearly identified purpose for

which the organisation was established. The co-operative also needs to focus on generating economic and social benefits for its members so as to retain their loyalty and commitment.

Regulation of co-operatives in Australia

This article was contributed by New South Wales Fair Trading, Department of Finance and Services.

Background and current regulation

Australia's post-war economy and its growth as an exporting nation signalled a need for a national regulatory regime for business and financial markets. Constitutional limitations prevented the Commonwealth from passing laws to regulate the formation of companies as business vehicles and the Commonwealth's power to make laws with respect to banking did not extend to financial mutuals. The Commonwealth and states sought to achieve uniform corporate regulation from the 1960s, resulting in the corporations law. In 1999, as part of the financial sector reform process, financial mutuals such as building societies and credit unions, as well as friendly societies, became companies governed by corporations law. In 2001, states referred their power to make laws to regulate all aspects of the formation and activities of companies to the Commonwealth, resulting in the *Corporations Act 2001* (Cwlth). Non-financial co-operatives remained within the legislative authority of states and territories.

Each state and territory maintains separate legislation for co-operatives.² Since 1995, states and territories have combined to ensure consistency on core provisions so that there are similar basic principles underlying the legislation in each jurisdiction. Budgetary constraints have led to variations in maintaining and reviewing the legislation, and it has slipped behind developments in corporate governance and financial reporting requirements for companies.

Access to capital markets has been a long-term problem for co-operatives because shares in a co-operative cannot be quoted on a stock exchange and can only be acquired by active

members. Developments in New South Wales in 1996 saw the introduction of a new hybrid security called a co-operative capital unit (CCU). These securities can be issued to non-members and are capable of quotation on a stock exchange. CCUs were initially popular with co-operatives, but their popularity is limited by the fact that co-operatives in other jurisdictions were not able to issue them, and market knowledge of the securities is not widespread, particularly in a nationally operating financial market.

As creatures of state and territory legislation, co-operatives were prohibited from carrying on business across a state/territory border unless they also sought registration as a 'foreign co-operative' in that other jurisdiction. Foreign registration is not a complex procedure, but it is costly as it is a replication of registration costs, and annual obligations, in up to seven other jurisdictions. By comparison, a company, once registered is under no prohibition from carrying on business in a state or territory outside its place of incorporation.

Co-operatives are by nature conservative entities and, unlike their company counterparts; they generally do not make headlines in business media through reporting profits or public floats. Professional knowledge about how they work and what they can contribute to an economy or a community is limited.

At time of writing, there were approximately 1,700 registered co-operatives in Australia, compared with 2,350 in 2000.³ The declining number of co-operatives is not so much due to deregistration, but rather the very small number of new co-operatives being formed. Statistics published by the Australian Securities and Investments Commission⁴ on an annual basis reveal a much higher rate of company deregistration over the last decade than is evident among co-operatives. However, there is a comparatively high rate of new company formations, resulting in growth in company numbers that is not matched by co-operatives.

The number of co-operatives is likely to remain relatively small compared with companies, as the core requirement for co-operation demands that there be more than one member ready and willing to subscribe to co-operative

principles to support a venture. A company may be formed by a single member.

Uniform co-operatives laws for 2012

Work began in 2005 to prepare uniform provisions for jurisdictions to amend legislation and introduce a system of mutual recognition for co-operatives that would replace the registration requirements for foreign co-operatives and enable all co-operatives to issue CCUs. This work was overtaken by a proposal for uniform legislation under a template law and supported by an inter-government agreement in 2007. The template law is called the *Co-operatives National Law*. As well as providing a vehicle to remove barriers to cross-border business activities by co-operatives and enabling them to issue CCUs, the *Co-operatives National Law* has been an opportunity to review all aspects of co-operatives legislation.

In December 2009, a draft *Co-operatives National Law* was released for public comment by the Ministerial Council on Consumer Affairs. There was an extensive period of public consultation and consultation between jurisdictions as a result. Under the inter-government agreement, called the Australian Co-operative Laws Agreement, New South Wales will pass the *Co-operatives National Law*, which will be supported by national regulations. Other jurisdictions will have the option of adopting the *Co-operatives National Law* or passing consistent legislation. Jurisdictions are working towards commencement of the legislative scheme during 2012, the International Year of Co-operatives.

The *Co-operatives National Law* continues to be a law made by states and territories; however, its standardisation will enable it to operate in a similar manner to a national law. The Australian Co-operative Laws Agreement requires jurisdictions to co-operatively maintain the legislation and to adopt uniform administrative procedures. It is anticipated that a co-operative in any jurisdiction will be able to carry on business in any other jurisdiction in the knowledge that the law is the same and that it will be administered according to the same policies and procedures.

In addition to removing barriers to cross border business and enabling all co-operatives to issue CCUs, the *Co-operatives National Law* introduces significant changes to the regulatory regime to help place co-operatives in a more competitive position compared with companies. In particular, it more clearly articulates the relationship between co-operatives laws and the *Corporations Act 2001* (Cwlth) by providing a clear indication of what provisions of that legislation are adopted for use by co-operatives. It also updates key areas of corporate governance by modernising provisions relating to the qualification of directors and their duties. Changes are also made to simplify financial reporting by smaller co-operatives by utilising a risk management model which preserves the principle of democratic control unique to co-operatives by requiring financial reporting to members.⁵

The *Co-operatives National Law* is designed to deliver a modern legislative environment that removes competitive barriers but continues to assure the unique nature of the co-operative structure. It is hoped that a new regulatory regime coupled with a renewed interest in co-operatives through the United Nations International Year of Co-operatives will arrest the decline in the number of co-operatives and thereby contribute to a strong and varied economy and community.

The history of co-operatives in Australia

Overview

This article was contributed by Nikola Balnave (Macquarie University) and Greg Patmore (The University of Sydney).

Co-operatives have had a presence in the Australian economic and social landscape since the 1850s. As democratically run member-owned organisations, they redistribute all profits back into the co-operative business, its members and/or local communities. Australia historically has had, and still has, several different forms of co-operatives including agricultural co-operatives, building societies, credit unions, worker co-operatives and consumer co-operatives. The first registered consumer co-operative in Australia was the Brisbane Co-operative Society in 1859, before the separation of Queensland from NSW.

One of Australia's longest surviving Rochdale⁶ consumer co-operatives, the Adelaide Co-operative Society, opened for business in 1868 and successfully traded for almost a hundred years. Consumer co-operatives in NSW formed their own wholesale co-operative in 1912 to provide co-operative retailers with goods. While consumer co-operatives faced a



Image: Old co-op store, Kempsey (courtesy Macleay Regional Co-operative Ltd).

The Rochdale consumer co-operative movement in Australia

Rochdale consumer co-operatives have played an integral role in the lives of communities in mining districts, metropolitan areas and rural regions of Australia. Between 1859, when the first Rochdale consumer co-operative was registered in Australia, and the end of World War II, Australia experienced waves of interest in consumer co-operatives. With a few exceptions, consumer co-operatives tended to be established at the back-end of an economic slump, when there was disillusionment with the prevailing economic system and consumers sought a greater level of economic security.

British immigrants to Australia played an important role in bringing Rochdale principles to coal-mining districts, where consumer co-operatives became a common feature. The Hunter Valley, the Illawarra region and the Lithgow Valley had some of the largest and most prosperous co-operative societies in NSW, while Wonthaggi in Victoria and Collie in Western Australia also had co-operative societies.

Consumer co-operatives in metropolitan areas tended to be short-lived, with key exceptions including the Adelaide Co-operative (established in 1868) and the Newcastle and Suburban Co-operative (established in 1898). Rochdale consumer co-operatives also became a feature of rural areas of Australia, particularly in fruit-growing or poultry-breeding districts or in towns at important railway junctions such as Junee in the Riverina region of NSW, where a Rochdale consumer co-operative was founded in 1923. A rare example of the mutualisation of a private store is the Community Co-operative Store (Nuriootpa) in the Barossa Valley of South Australia, which was established in 1944, when the owner of the main store in town decided to sell it to the community following the death of his son in World War II. The NSW Co-operative Wholesale Society (NSW CWS) was established in 1912 by four Hunter Valley consumer co-operatives to overcome challenges such as price-cutting by competitors and the refusal of supply by some wholesalers. This body played a key role in advancing the consumer co-operative movement.

Despite all these examples, the Rochdale movement never consolidated in Australia. It was plagued by internal divisions and received limited support from the industrial and political wings of the labour movement.

Despite the economic buoyancy of the period, the Rochdale movement fell into general decline following the end of World War II. The NSW CWS went into permanent decline after 1957 and ultimately ceased operations in 1979. The Adelaide Co-operative went into liquidation in February 1962 after 94 years of trading. Perhaps the most spectacular collapse of a consumer co-operative was the Newcastle and Suburban Co-operative, which achieved a peak membership of 95,000 in 1978 but ceased trading in 1981.

Many consumer co-operatives failed to survive the major economic upheavals of the 1970s and 1980s, and unlike the trend in early years, renewed interest did not emerge in the periods of recovery. The rise of chain supermarkets and shopping centres increased the degree of competition from non co-operative businesses, and a number of co-operatives fell victim to poor business decisions. The decline of working class communities in mining areas, and increasing car ownership in rural areas, created further difficulties for those co-operatives reliant on their remoteness for success.

While the Rochdale movement collapsed in Australia, consumer co-operatives survive and indeed thrive in several rural locations, including Junee in NSW, Denmark in Western Australia and Nuriootpa in South Australia. The success of these co-operatives can be largely attributed to good management, reciprocal links with the local community and the adoption of franchising as a way to source and market their goods and services.

decline in the post-war period, they played an important part in the lives of many in regional Australia, particularly in coal-mining and rural areas. Indeed, consumer co-operatives continue to play a role in maintaining the economic vitality of regional communities in a number of locations, including the Barossa Valley of South Australia, where the Barossa Community Co-operative Store, established in 1944, has built a shopping mall in Nuriootpa.

The impetus for credit unions in Australia dates back to the passage of the NSW *Small Loans Facilities Act* in 1941. The first registered credit union – the Homeowner’s Co-operative Credit Society Limited – was established in May 1945. Credit unions remain a vigorous form of co-operative in Australia and have been through a process of amalgamation in recent years to take advantage of new technologies and remain competitive with the four major banks. Credit unions and building societies were recognised by the Federal Government in 2010 as important institutions in ensuring competition in the Australian financial sector and providing a viable alternative to the four major banks, especially in light of the Global Financial Crisis.⁷

Agricultural co-operatives have played a crucial role in rural Australia in assisting primary producers to process and market their commodities. The earliest of these co-operatives, the South Coast and West Camden Co-operative Company, emerged in the dairy industry on the NSW coast in the 1880s. Its aim was to remove ‘middle men’ and improve returns for farmers. The top two co-operatives in Australia in 2011 in terms of turnover were agricultural co-operatives – Co-operative Bulk Handling Ltd in Western Australia and Murray Goulburn Co-operative Co Limited, Victoria (Co-operatives Australia, 2011).

Co-operatives have also shown a strong interest in the sustainability of Aboriginal and Torres Strait Islander communities, with the first movement towards aboriginal co-operatives being in the 1950s and 1960s. A significant legacy of this movement is the Tranby Aboriginal College in Sydney, Australia’s oldest Aboriginal and Torres Strait Islander educational provider, which was founded in 1958.⁸

Co-operatives have shown an ability in Australia to change their form to match changes in local conditions. For example, the Macleay Co-operative on the mid-North Coast of NSW, founded in 1905, began as a dairy co-operative with a butter factory, and now focuses on retailing.

The history of worker co-operatives

This article was contributed by Anthony Jensen, University of Sydney.

“A worker co-operative is a business that is owned and democratically controlled by the people who work in it.” (Co-operatives UK)

Unlike England and Southern Europe, Australia has not embraced worker co-operatives as a route to job security, self-determination and justice. Despite this, Australia has a very rich history of worker co-operative experiments. The period up to the 1915 Conference on Trade Unionism in Australia, saw the union movement experimenting with worker co-operatives as part of the response to the economic turmoil of the time. They were supported in the Trades and Labour Council in 1893 (Markey, 1985). In this period, starting with the building of the Coburg Goal in the 1850s and the setting up of the Age Newspaper in 1867, there were waves of attempts by workers to form co-operatives in economic downturns and, by the 1890s, Australia had a vibrant ‘co-operative sector’ (Markey, 1985).

Paradoxically, the high profile establishment of the Australian Co-operative Commonwealth in Paraguay, New Australia, 1893 to 1905, that arose out of the 1891 shearers’ strike, proved to be pivotal. It became the catalyst for the Arbitration System of 1904 and the Harvester Agreement of 1907, ensuring that the Australian workingman would earn a basic wage, which would provide for himself and his family in frugal comfort. As a result, in Australia, the self-help worker co-operative model was not a prominent solution used by trade unions to solve economic problems and only a very small number of worker co-operatives was formed as trade unions learnt to ‘lean upon the state’ (Atkinson, 1915).

In the 20th century, drawing on the Rochdale tradition, worker co-operatives continued to emerge where coal mines were developed co-operatively (such as in Balmain in 1923). Even so, such was the low profile of worker co-operatives that they were not included in the 1923 New South Wales *Co-operation Act*. However, from the 1930s, a viable model of worker co-operatives emerged when a number of businessmen sold their business to their workers. The main one operating along co-operative lines was in the clothing trade, Fletcher Jones and Staff, formed in 1944.⁹

A number of 'counter culture' community style worker co-operatives were formed in the 1970s, the most notable being at Maleny in Queensland. In the 1980s, hundreds of businesses in Europe and the United States of America were bought by their workers to save jobs – and many re-formed as co-operatives. This phenomenon emerged also in Australia, with the New South Wales Government's Worker Co-operative Programme that facilitated approximately 25 buyouts in a successful pilot program during the 1980s. A similar program existed in Victoria and South Australia, while Western Australia also reported worker buyouts to save jobs.

In 1992, a new *Co-operatives Act* in New South Wales included clauses that specifically allowed for worker co-operatives to be registered and two new 'third way' worker co-operative buyouts were formed. There were hopes that this Act would be a template for the other Australian states and territories but this did not occur.

In 2009, the Australian Government provided funding from the 'Jobs Fund' to the Australian Employee Ownership Association to establish the Australian Employee Buyout Centre (AEBEC). The role of the AEBEC was to implement a time-limited assistance program to businesses, with a view to saving jobs by assisting employees to buy a distressed business or a business from a retiring owner. The vehicle for implementing the employee ownership model in these projects has been the Employee Share Ownership Plan, which can operate in a co-operative like way.

Measuring the activity of co-operatives

For reasons explained in the introduction and in the earlier article by Professor Mazzarol and Dr Mamouni Linnios, for statistical purposes, co-operatives in Australia are not easily defined.

The Australian Taxation Office's Australian Business Register categorises a number of co-operatives as other types of entities, including Australian public company, Other incorporated entity and Other unincorporated entity. These entity types flow through to the ABS business register, used as the population frame for ABS business surveys. In addition, ABS samples of businesses are not optimised for representing particular types of units, instead using industry and size as the basis for sample selection. For both these reasons, reliable data on co-operatives are generally not able to be produced from ABS business surveys.

While the Australian Taxation Office (ATO) recognises the business form, 'cooperative' in its Company tax return, it is not known how entities describe themselves when completing the form. The ATO reports data in respect of businesses that self-reported as co-operatives in its annual *Taxation Statistics* publication. The 2008–09 edition reports that 891 co-operative companies paid net tax of more than \$0, with the total tax paid \$73 million (ATO, 2011).

Data on registered co-operatives are collected for regulatory purposes and, since 2009, Co-operatives Australia has released annual data on Australia's top 100 co-operatives, credit unions and mutuals by annual turnover. The release of April 2011 reported that the 'top 100' had a combined annual turnover of \$14.77 billion, with 13,085,000 members and 26,000 employees (Co-operatives Australia, 2011). Organisations are broadly categorised by type of activity as shown in table 4.

Data collected for regulatory purposes in New South Wales are provided in the next article as an example of information available from state/territory registries.

4. TOP 100 CO-OPERATIVES(a), CREDIT UNIONS AND MUTUALS, By sector

Sector	Turnover(b)	Members(c)	Employees(c)
	\$m	no.	no.
Agricultural	6 929	34 592	6 269
Consumer	2 503	8 016 537	7 371
Financial	2 293	3 735 496	8 941
Purchasing	1 214	19 438	1 129
Other (housing, transport, insurance, education)	1 832	1 279 153	2 328
Total	14 771	13 085 216	26 038

(a) Based on a functional rather than legal view of co-operatives. See *Introduction* for a discussion of the difference.

(b) Turnover data are primarily for year ending in 2010 and are based on total group revenue including marketing pool revenue classified off balance sheet by Australian Accounting Standards and International Accounting Standards. For building societies and credit unions, turnover is net interest income plus other income.

(c) Most recent available data at time of compilation. Note that totals are understated as not all entities reported membership and number of employees.

Source: *Co-operatives Australia (2011)*.

Financial data on NSW co-operatives

This article was contributed by New South Wales Fair Trading, Department of Finance and Services.

The information provided in table 5 is compiled from annual data lodged on the public register as a result of reporting obligations imposed on co-operatives registered under the *NSW Co-operatives Act 1992*. Accordingly, the Registry does not provide any guarantee as to the accuracy of the information as reported.

The number of co-operatives registered in NSW decreased by 64 co-operatives (9%) between 2006–07 and 2009–10. This could be due to co-operatives merging, ceasing operations entirely or transferring to another entity structure type. The largest decrease occurred between 2007–08 and 2008–09 with a decrease of 29 co-operatives (4%).

Despite the declining number of co-operatives, the number of co-operative members reported between 2006–07 and 2009–10 increased by 11% and also increased each financial year. In contrast, the number of co-operative employees reported each year varied, with a net decrease over the period of 462 (5%).

The total turnover reported for co-operatives decreased over the period from \$4,415 million to \$2,878 million (a decrease of \$1,537 million or 35%). This decrease likely reflects both the drop in the number of co-operatives and the trading conditions of many Australian businesses over this period, including as it does the final years of the drought and the Global Financial Crisis. Similarly, the share valuations reported over this period halved, from \$305 million to \$149 million (a decrease of \$156 million).

5. NSW REGISTERED CO-OPERATIVES(a)(b)

		2006–07	2007–08	2008–09	2009–10
Turnover	no.	744	728	699	680
	\$m	4 415	4 240	3 268	2 878
Members	'000	1 605	1 667	1 753	1 786
Employees	no.	10 208	10 613	10 172	9 746
Share valuation	\$m	305	263	176	149

(a) Excludes financial co-operatives and other entities not registered as co-operatives under NSW legislation (*NSW Co-operatives Act 1992*). Data therefore exclude companies that operate as mutuals but are registered under the *Corporations Act 2001* (Cwlth).

(b) The NSW Registry of Co-operatives and Associations does not provide any guarantee as to the accuracy of the information reported in this table. Data reflect information received by the extraction date of 31 October 2011.

Source: *NSW Registry of Co-operatives and Associations, data extracted from the public register at 31 October 2011*.

The diversity of co-operatives in Australia

This section illustrates the diversity of activities to be found amongst Australian co-operatives. Other examples can be found as special articles in chapters 3 *Aboriginal and Torres Strait Islander Peoples*, 10 *Housing*, 11 *Health*, 17 *Forestry and fishing* and 27 *Financial system*.

The diversity of activities of Australian co-operatives is illustrated by diagram 6.

Financial co-operatives

Credit unions – an overview

This article was contributed by Dr Leanne Cutcher, School of Business, University of Sydney.

Credit unions, as financial co-operatives, are democratically run, member-owned organisations that redistribute profits back into the credit union. Credit union membership is

based on a common bond, a linkage shared by savers and borrowers who belong to a specific community, organisation, religion or place of employment. Members may benefit from higher returns on savings, lower interest rates on loans and lower fees on accounts. Central to what is often called the ‘credit union difference’ is the concept of mutuality. The basic principle of mutuality is that a mutual’s members own the organisation. On joining a credit union, each member is asked to purchase a share for a nominal amount and this entitles them to an equal say in the running of the credit union. Members have the right to vote at AGMs and can also stand for positions on the Board. Each member has one vote, regardless of the volume of business they have with the credit union.

In line with credit unions around the world, Australian credit unions aim to operate under principles set down by the World Council of Credit Unions (WOCCU). These principles include:

6. CO-OPERATIVE BUSINESS ACTIVITIES IN AUSTRALIA(a)



(a) The activities are not necessarily mutually exclusive.

Source: Prepared by New South Wales Fair Trading.

- open and voluntary membership to all within the group accepted by the credit union
- democratic control
- non-discrimination
- service to members
- equitable distribution of surpluses
- financial stability
- ongoing education to promote thrift and wise use of credit, and
- social responsibility.

In 2010, there were 52,945 credit unions in 100 countries operating under the auspices of the World Council of Credit Unions (WOCCU, 2012).

In Australia, up until the 1980s, credit unions were subject to their own legislative requirements and were afforded tax incentives. These advantages helped sustain a large number of credit unions, which serviced discrete memberships. However, several structural changes, most notably deregulation of the financial services sector, have meant that some smaller credit unions have merged in order to be able to meet the increased reporting requirements while still maintaining high levels of service to their members. The result of these changes has been a raft of amalgamations which saw credit union numbers fall from 549 in 1983 (Lewis, 2001) to 104 in 2011 (APRA, 2011).

Credit unions continue to be an important part of the Australian financial landscape, with over 4 million members. While some have adopted similar strategies to the large retail banks, others continue to be locally focused, or maintain a strong industrial bond. One example of this diversity is reflected in the adoption of a 'Mutual Banking Code of Practice' by Abacus, the industry association for mutual credit unions and building societies, in July 2009. While it is a code of practice for 'Mutuals', there is no discussion of the meaning of mutuality in the document, nor mention of the philosophy of co-operation that is said to underpin the work of mutuals.

Some credit unions in Australia have maintained a strong commitment to the

principles of mutuality and co-operation, mainly because they are aimed at servicing particular communities. Examples include: Traditional Credit Union, servicing Aboriginal and Torres Strait Islander people in the Northern Territory; Fitzroy and Carlton Community Credit Co-operative, servicing low-income individuals; and Wyong Council Credit Union, servicing a particular group of employees. These organisations are formed around strong bonds of association and this drives their practices, including an emphasis on educating members in financial literacy.

The role of credit unions in the South East Asia-Pacific Region

This article was contributed by Catherine Drummond, Credit Union Foundation Australia (CUFA).¹⁰

There is an emerging credit union movement across the South East Asia-Pacific Region, operating both formally and informally in rural and remote areas. Credit unions can provide poor communities with access to financial services, a better level of financial literacy, encouragement to save and low interest loans. Without the presence of credit unions and other financial co-operatives, people from poor areas may save their money by hiding it or by investing in gold or livestock. They can also succumb to the debt cycle of money lenders who often take advantage of their inability to access loans and short-term capital from other means.

Credit unions and financial co-operatives offer poor communities a safe place to save and provide them with a means of budgeting. The amassed savings of members form a low-cost loan pool for all members to access. The ability to save reduces the need for short-term loans by providing money for a rainy day, for instance, for an unexpected medical emergency or daily family expenses in the event of crop failure. Members of credit unions and financial co-operatives from rural and remote locations may not have birth certificates for identification purposes or regular payslips for proof of income. They are therefore more likely to be precluded from accessing the services of commercial banks, which may also be geographically inaccessible.



Image: Lanamona Credit Union in Timor Leste.

Members of credit unions and financial co-operatives may be able to access loans to assist them to establish or extend micro-businesses. Examples of business activities are vegetable growing, animal-raising, setting up grocery stalls, mechanical repair businesses and sewing machining. Extra income from these activities can allow the poor to better feed their families, give children an opportunity to go to school rather than have to work to earn money, and ensure proper medical care in times of sickness.

Lanamona Credit Union in Timor Leste (East Timor) is one of many credit unions or financial co-operatives for which CUFA provides support. Lanamona was formed in 2008 by five women in Maliana, a rural district close to the Indonesian border. They each contributed \$5.00 and formed a savings club to help their community rebuild after conflict. At time of writing, Lanamona's membership exceeded 600 and they had raised sufficient institutional capital to pay two staff members, after operating on a voluntary basis until early 2011.

Examples of financial co-operatives

Information for this section was provided by bankmecu, the Fitzroy and Carlton Community Credit Co-operative and the Community Mutual Group.

mecu Limited was approved to call itself a bank from 1 September 2011 under the new trading name of *bankmecu*. The bank was Australia's first customer-owned bank, being wholly owned by, and accountable to, its customers.

bankmecu was the first co-operative in the world to become a signatory to the United Nations Environment Program Finance Initiative and is recognised for its sustainability reporting. bankmecu achieved carbon neutrality on 1 July 2011 with a 640 hectare 'Landbank', which offsets emissions from car loans finances, biodiversity lost from home construction and carbon emissions from business operations.

The Fitzroy and Carlton Community Credit Co-operative is a credit union that offers banking services to members on low and fixed incomes. It is an established provider of suitable and situation-sensitive financial products and services to financially excluded members of the community. The Co-operative was founded in 1977 by the Action Resource Centre Project of the Brotherhood of St Laurence, to assist members to gain the skills necessary to manage their own finances with access to small loans, budgeting advice and a budget service, special savings accounts and services aimed at avoiding problematic debt.

Around 80% of its members receive Centrelink payments. There are no fees for over-the-counter transactions and the credit union provides interest-free emergency loans and a budgeting and bill-paying service.

The majority of tellers are volunteers on low and fixed incomes. Some use their training and work experience to later gain full-time employment.

The Community Mutual Group is based in northern NSW and is the largest inland community Credit Union in Australia, with a member base of approximately 70,000.

In January 2010, the Community Mutual Group combined three regional credit union brands to form a single, regionally-based financial institution. It has consequently achieved cost savings and extended the provision of products and services.

The Group retains local decision-making and community involvement and reinvests its profits for the social, economic and environmental wealth of members and non-members.

To celebrate the International Year of Co-operatives in 2012, CMG is engaging with 280 schools on the topic 'What Makes a Credit Union Different?' It will invite more than 160 co-operatives in its region to profile their services and contributions to local communities and to highlight possible career paths for young people in the co-operative movement.

Non-financial co-operatives

Agricultural co-operatives

This article was contributed by Co-operatives Australia, with additional information provided by Co-operative Bulk Handling, Murray Goulburn Co-operative and Norco Co-operative.

Australia's largest co-operatives (by turnover) are both in the agricultural sector. They are Co-operative Bulk Handling Ltd (CBH) and Murray Goulburn Co-operative Co Ltd (Co-operatives Australia, 2011).

Established in 1933, CBH Group is Australia's biggest co-operative (by turnover) and has grown through innovation with operations including grain storage, handling, transport, marketing, shipping, and domestic and off-shore processing. Based in Western Australia and owned and controlled by around 4,500 grain growers, CBH's core role is to create and return value to members, principally by lower fees for grain storage, handling and freight, and investment in the upgrade and maintenance of storage and handling infrastructure. In the process, it supports many rural and regional communities.

In January 2011, the CBH Board announced the outcome of a year-long investigation into the best structure for CBH. The Board and members voted overwhelmingly in support of remaining a co-operative with a modernised structure and constitution that would enable CBH to return value to growers in the ways they value most.

Murray Goulburn Co-operative Co Ltd, established in 1950, is a supplier of dairy ingredients and retail products, processing over a third of Australia's milk supply. Based in Victoria, Murray Goulburn has 2,580 dairy farmer owners. The Co-operative exports to major markets around the world and has a strong presence in the Australian domestic market.

Co-operatives of the Riverina region

2012 is the International Year of Co-operatives as well as the Australian Year of the Farmer. To celebrate both Years, it is fitting to include a section in this feature article on the Riverina region of New South Wales. The region includes two major irrigation areas – the Murrumbidgee Irrigation Area (MIA) and the Coleambally Irrigation Area (CIA) – and has a number of agricultural and other co-operatives.

The MIA encompasses that part of New South Wales from Narrandera in the south-east to Goolgowi in the north-west. Its major towns are Griffith and Leeton. The New South Wales Government developed the MIA from the early 1900s through to the 1930s¹¹ in a large civil engineering project that included the construction of the Burrinjuck Dam and an elaborate irrigation network of canals and channels. As a result, the area has become an intensive fruit, wine grape and rice-growing region.

The history of the MIA encompasses the history of a number of important co-operatives in Australia. One of the largest co-operatives was the Ricegrowers' Co-operative Limited (RCL), formed in 1985 from two other earlier co-operatives, the 1925 Murrumbidgee Irrigation Rice Growers' Co-operative Society and the 1950 Ricegrowers Co-operative Mills Ltd. In the face of global oversupply and low prices, RCL moved into the manufacture of a range of new products from rice and its by-products. In 2005, rice grower members voted to convert RCL from a co-operative to a company, Ricegrowers Limited.¹²

The original cannery which formed Letona was built in 1914 by the New South Wales Government as part of the Murrumbidgee Irrigation Project. The Letona Co-operative Cannery Ltd was formed in 1935 by the Australian Canning Fruitgrowers Association and other fruit growers in the area. The Co-operative modernised and expanded the plant, subsuming the Mountain Maid cannery in Batlow in 1977, despite an oversupply of canned fruit in markets overseas. The financial position of the cannery ultimately deteriorated and Letona ceased operation in 1994.¹³

Co-operatives with a regional rather than an activity focus have also developed in the Riverina. An example is the Yenda Producers Co-operative Society Ltd. Incorporated in 1925, with 10 shareholders, it has grown and diversified to now have over 1,500 shareholders and a number of full-time and casual employees. It provides a large range of agronomy services and agricultural products, and assists in the transport and marketing of many of the region's outputs. Apart from services to the farming community, 'Yenda Prods' contributes to local charities and associations, as well as providing local employment.

As well as agricultural co-operatives, the MIA also saw a number of credit unions form in the area. The Murrumbidgee Mutual Credit Union was set up over 40 years ago. In 1988, it merged with the Agristaff Credit Union, formed to service employees and families of the New South Wales Department of Agriculture, with a head office in Sydney and regional offices in Griffith and Leeton. With the relocation of the Department of Agriculture to Orange, the Sydney office was closed and the Credit Union focused on the MIA. It changed its name to the Country First Credit Union Ltd and has offices in Griffith, Leeton, Narrandera and an agency in Hay.¹⁴

The Coleambally Irrigation Area (CIA) was established between 1958 and 1970. It is located south of Griffith between Darlington Point and Jerilderie, and comprises 477 irrigation farms and 35,000 hectares of irrigated land supplied through open earthen channels. The Coleambally Irrigation Co-operative Limited (CICL) commenced in 2000 as an irrigator-owned and operated enterprise and holds the Coleambally Irrigation District Irrigation water licence, providing water and associated services to customers.¹⁵ The supply system is gravity fed and incorporates solar-powered metering and flow regulation technologies. The Co-operative also manages 1,700 hectares of Crown land that has been set aside for biodiversity purposes.¹⁶

CICL has established a separate entity known as the Coleambally Irrigation Mutual Co-operative Limited for the purpose of investing asset funds for future replacement of the irrigation infrastructure.

Another large agricultural co-operative is Norco Co-operative Limited. Norco is a dairy-based co-operative that has been in business since 1895, when The North Coast Fresh Food & Cold Storage Co-operative Company Ltd began operations on 5 June 1895. Norco is still owned by its nearly 300 shareholders who operate Australian dairy farms and supply milk to the Co-operative to be sold into the fresh milk market. Surplus milk is utilised and value added by the Co-operative.

In addition to the dairy-based operations in Lismore, Norco has a network of rural stores in Northern New South Wales and South East Queensland and an Agribusiness division.

Automotive – Capricorn Society Limited

This article was contributed by Capricorn Society.

Capricorn Society is one of the largest automotive parts buying groups in the southern hemisphere. It provides its automotive industry members, who are also its owners, with access to suppliers, consolidated billing, credit and financial services and insurance. Members are entitled to an equal say and one vote, regardless of the number of shares held.

Other member services offered by subsidiary divisions of the company are motor vehicle and equipment finance, business protection, travel services, training and education.

Capricorn Society was established in 1975 by a small group of Western Australian service station owners to increase their buying power to compete with the big multinational oil companies. Capricorn has grown to more than 14,000 members in Australia, New Zealand and the Republic of South Africa and works with over 2,200 suppliers across the three zones.

Trade supplies – Plumbers' Supplies Co-operative Limited

This article was contributed by Plumbers' Supplies Co-operative.

Members of the Master Plumbers Association formed Plumbers' Supplies Co-operative in 1955 to alleviate problems associated with post-war material shortages and the fact that plumbers were unable to obtain traders' price discounts.

Owned by the plumber members by way of shareholdings, the Co-operative helps maintain market prices at profitable levels to members. Plumbers' Supplies has grown from an original 41 shareholders and one warehouse to a membership exceeding 4,000 and a network of over 30 branches.

Plumbers' Supplies returns all profits to members by way of annual rebates and dividends.

Consumer and retail – The Terang and District Co-operative

This article was contributed by Terang and District Co-operative.

The Terang and District Co-operative is a 103-year old trading co-operative serving its local community in times of declining populations in regional centres. It is owned and controlled by its members who use its services – a supermarket, rural store, farm services and hardware store. In 2011, it had more than 1,850 members. It is governed by the Victorian *Co-operatives Act 1996*.

Child care – Community Child Care Co-operative (NSW)

This article was contributed by Community Child Care Co-operative.

Community Child Care Co-operative (NSW) was established in 1978 and is a not-for-profit organisation representing over 1,500 children's services, families and individuals.

Its aim is to inform and inspire early education and care services, and influence government policy, practices and programs so that children in New South Wales have access to quality children's services that meet the needs of their communities.

The Co-operative advocates for the provision of accessible, affordable and high quality services for children and their families in NSW. It delivers professional development and support for all children's services in NSW and works to assist service providers to provide high quality early education and care.

Community Child Care Co-operative is funded by the NSW State and Commonwealth governments in addition to earning income through membership and sale of resources.

Renewable energy – Hepburn Community Wind Park Co-operative

This article was contributed by Hepburn Community Wind Park Co-operative.

The Hepburn Community Wind Park Co-operative (Hepburn Wind) comprises two turbines with a combined capacity of 4.1 MW, expected to produce enough electricity to power 2,300 homes. Turbines were ordered in December 2009 and began generating power in June 2011.

The local community owns the wind farm and the Co-operative manages the wind park. It provides financial returns to its members and funds community projects through a community sustainability fund.

More than 1,900 co-operative members contributed over \$9 million for construction of the wind farm – a new way of funding and developing wind energy resources through direct investment from small investors and local communities who want to support local renewable energy.



Image: Hepburn wind tower (courtesy Hepburn Wind).

Organic food – Alfalfa House

This article was contributed by Alfalfa House.

Alfalfa House is a community-based not-for-profit food co-operative in Enmore, NSW. It grew out of a rent strike by a single household in the nearby suburb of Erskineville in 1981. Wholesale bulk grains, cereals, nuts and seeds were purchased from the retained rent monies and sold from the front room of the house. In 1983, the group moved to the Alpha House building on King Street, Newtown and was renamed The Community Food Store.

Alfalfa House was officially registered as a co-operative on December 23 1988. It has since grown to around 3,000 members but remains committed to its original aims. Most of the stock is sold in bulk and unpackaged, thus reducing landfill waste; some is bought directly from farmers and producers. The 'co-op' checks with growers and suppliers to ensure that products meet ethical and environmental standards.

Profits are returned to the members in the form of better services and cheaper goods. All members are entitled to a 10% discount every time they shop, with a 25% discount available to those who also volunteer.

State and regional profile – NSW Mid North Coast Region

This article was contributed by Todd Green of Regional Development Australia Mid North Coast.

The New South Wales Mid North Coast region has a rich history of co-operatives – with three dating back to the early 1900s still running successful operations and providing community benefit.

These co-operatives commenced operations with an agricultural focus, predominantly dairy related, and have adapted their operations over time to remain viable and continue to offer benefits to their members and the broader community.

The Hastings Co-operative commenced in 1916, Macleay Regional Co-operative in 1905 and Nambucca River Co-operative in 1903.



Image: Community-based not-for-profit food co-operative Alfalfa House, Enmore, NSW (courtesy Alfalfa House).

Of the co-operatives operating in the Mid North Coast region, five form part of the Top 100 list of co-operatives by annual turnover (Co-operatives Australia, 2011). These are Hastings Co-operative, Bananacoast Community Credit Union, Holiday Coast Credit Union, Macleay Regional Co-operative Ltd and Coffs Harbour Fisherman's Co-operative.

In addition to the long history of co-operatives on the NSW Mid North Coast, there remains a strong presence today with three credit unions and 38 co-operatives registered.

The co-operatives operating in the Mid North Coast region cover a wide range of products and services, providing economic, social and environmental benefits. The co-operatives cover activities as diverse as community radio, housing, education, agriculture, taxis, recreational clubs, fish wholesaling, supermarkets, service stations, native bush regeneration, property development, respite accommodation services, and women's and children's refuges.

International co-operatives

This article was contributed by New South Wales Fair Trading, Department of Finance and Services.

The International Co-operative Alliance (ICA) defines a co-operative as "... an autonomous

association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations, through a jointly owned and democratically controlled enterprise ...".

The ICA reports that over one billion people are members of co-operatives worldwide and that those co-operatives provide over 100 million jobs around the world. This compares to 328 million people who own shares traded on stock markets (Co-operatives UK, 2012). The largest 300 co-operatives in the world are together worth 1.6 trillion US dollars, equivalent to the GDP of the ninth largest economy in the world: Spain.

Large segments of the populations of some countries are members of co-operatives and they contribute significantly to national economies, either through direct employment or economic activity.¹⁷

For example, ICA statistics¹⁸ show the following:

- a) National co-operative membership
 - Around 40% of Canadians are members of at least one co-operative.
 - Finland's S-Group's membership represents over 60% of Finnish households.
 - Almost 40% of the French population are members of one or more co-operatives; three-quarters of all French agricultural

producers are members of at least one co-operative and one-third of French people are members of a co-operative bank.

- In India, over 239 million people are members of a co-operative.
- In New Zealand, 40% of the adult population are members of co-operatives and mutuals.
- Half of the Singaporean population are members of a co-operative.

b) Employment in co-operatives

- In France, 21,000 co-operatives provide over 1 million jobs representing 3.5% of the active working population.
- In Germany, 8,106 co-operatives provide jobs for 440,000 people.
- In Iran, co-operatives have created and maintain 1.5 million jobs.
- In Italy, 70,400 co-operatives employed nearly 1 million people in 2005.
- In Spain, co-operatives provided jobs to 22% of the labour market in 2007.
- In the United States of America, 30,000 co-operatives provide more than 2 million jobs.

c) Co-operative economic activity

- Canadian maple sugar co-operatives produce 35% of the world's maple sugar production.
- In France, the co-operative movement has a turnover of 181 billion Euros. Co-operatives handle 60% of retail banking, 40% of food and agricultural production and 25% of retail sales.
- In Japan, agricultural co-operatives report outputs of US\$90 billion, with 91% of all Japanese farmers in membership.

- In New Zealand, 3% of gross domestic product is generated by co-operative enterprises, which are responsible for 95% of the dairy market (and 95% of the export dairy market). Co-operatives hold 70% of the meat market, 60% of the farm supply market, 80% of the fertiliser market, 75% of wholesale pharmaceuticals, and 67% of the grocery market.
- The 30,000 co-operatives in the United States of America operate 73,000 places of business and own over US\$3 trillion in assets, generating over US\$500 billion in revenue.

International co-operative entities

All co-operatives remain people-centred organisations that are owned, controlled and used by their members to benefit members. Co-operatives generally follow the seven co-operative principles shown in figure 2 at the start of this article.

In Australia, a co-operative is an entity based on sharing, democracy and delegation for the benefit of all its members. A general co-operative, in a legal sense, can be currently defined as "... any organisation that is incorporated as a co-operative under state or territory legislation".¹⁹ However, from 2012, the incoming *Co-operatives National Law* will replace the separate state and territory legislation with a single national law.

Similarly, international co-operatives are business enterprises where ownership, control and benefits remain in the hands of the co-operative members,²⁰ although the legal entities can vary from country to country.²¹

Endnotes

1. The diagram and other information in this section reflect the situation after the signing of the *Co-operatives National Law* and the National Regulations.
2. All states, except Western Australia, had specific legislation for co-operatives during the 1990s. Northern Territory passed legislation for co-operatives in 1997 and the Australian Capital Territory passed similar legislation in 2002. Western Australia passed the *Co-operatives Act 2009* which repealed the *Companies (Co-operatives) Act 1943* and other legislation. The Western Australian legislation is based upon the Exposure Draft of the *Co-operatives National Law* template.
3. Data collected by Registry of Co-operatives and Associations, NSW Fair Trading.
4. The Australian Securities and Investments Commission publishes annual insolvency and company

registration statistics at <<http://www.asic.gov.au>>.

5. The *Co-operatives National Law* distinguishes between reporting obligations for small and large co-operatives. Criteria for determining when a co-operative is 'small' will be settled in national regulations. Co-operatives regulation in Western Australia already defines a small co-operative.
6. Named after the first food co-operative started in Rochdale England in 1844. The principles espoused by the founders have become established as ideals for the operation of co-operatives.
7. <<http://www.perthnow.com.au/business/business-old/swan-joins-push-towards-credit-unions/story-e6frg2qu-1225968997551>>.
8. A special article in chapter 3 describes some of these co-operatives.
9. The F.J. Foundation, <<http://www.thefoundation.com.au/dfjones.html>> accessed March 2012.
10. Credit Union Foundation Australia (CUFA) is the development agency for the Australian Credit Union Movement. CUFA develops community access to affordable financial services in the Asia-Pacific region, working co-operatively at grass roots through to government levels. It helps build capacity in emerging credit union movements to create sustainability, improve lives and help to alleviate poverty.
11. NSW Agriculture 2003, *Murrumbidgee Catchment Irrigation Profile*.
12. <http://www.sunrice.com.au/uploads/documents/education/Detailed_History_of_the_Australian_Rice_Industry.pdf> accessed 26 October 2011.
13. Letona Co-operative Cannery Ltd (1935–1994), <<http://www.csu.edu.au/research/archives/collection/regional/agencies/letona>> accessed 7 November 2011.
14. <<http://www.countryfirst.com.au/about-us-history.html>> accessed 26 October 2011.
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16. <<http://new.colyirr.com.au>> accessed 26 October 2011.
17. Source: International Co-operative Alliance <<http://www.ica.coop/coop/statistics.html>> accessed 19 October 2011.
18. Ibid.
19. Source: <http://www.ourcommunity.com.au/directories/directories_article.jsparticleId-2102> accessed 17 November 2011.
20. Source: International Co-operative Alliance <<http://www.ica.coop/coop/index.html>> accessed 19 October 2011.
21. Source: Wikipedia, "Cooperatives as legal entities", accessed 26 October 2011.

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GEOGRAPHY AND CLIMATE

This chapter was contributed by the Australian Bureau of Meteorology (January 2012).

Australia is the lowest, flattest and, apart from Antarctica, the driest of the continents. The first part of this chapter describes Australia's landforms and their history in terms of how they were formed. The second part discusses Australia's wide range of climate conditions.

The island continent of Australia features a wide range of climatic zones, from the tropical regions of the north, through the arid expanses of the interior, to the temperate regions of the south. Australia experiences many of nature's more extreme phenomena, including droughts, floods, tropical cyclones, severe storms, bushfires, and the occasional tornado. Each of these phenomena is discussed in this chapter.

Temperatures in Australia were relatively stable from 1910 to 1950. Since then, both minimum and maximum temperatures have shown an increasing trend, with an overall increase from 1910 to 2010 of approximately 0.8°C. The acceleration in the warming trend that has occurred from the late 20th century has been largely attributed to the enhanced 'greenhouse effect' (see *Climate change* for more details).

This chapter contains a special article, *La Niña and the floods of 2010–11*.

Related information can be found in chapters *2 Environment*, *16 Agriculture* and *17 Forestry and fishing*.

Geography of Australia

Position and area

Australia comprises a land area of almost 7.7 million square kilometres (sq km) (table 1.1). The bulk of the Australian land mass lies between latitudes 10 degrees 41 minutes (10°41′) south (Cape York, Queensland) and 43°38′ south (South East Cape, Tasmania), and between longitudes 113°09′ east (Steep Point, Western Australia) and 153°38′ east (Cape Byron, New South Wales). The most southerly point on the mainland is South Point (Wilsons Promontory, Victoria) at 39°08′ south. The latitudinal distance from Cape York to South Point is about 3,180 kilometres (km), and to South East Cape 3,680 km, while the longitudinal distance between Steep Point and Cape Byron is about 4,000 km. Comparisons of Australia's land area with that of other countries and continents can be found in *International comparisons* at the end of this chapter.

In a jurisdictional and economic sense, Australia extends well beyond the mainland continent and Tasmania, including about 12,000 islands. There are many near-coastal islands that are parts of states or the Northern Territory, the largest being Melville Island (Northern Territory) at 5,786 sq km. Other major near-coastal islands include Kangaroo Island (South Australia), King

and Flinders Islands (Tasmania), Bathurst Island and Groote Eylandt (Northern Territory) and the Torres Strait Islands (Queensland).

Australia also has jurisdiction over a large number of islands remote from the coast. Some of these, such as Macquarie Island (Tasmania) and Lord Howe Island (New South Wales) are legally parts of states, but many are included in separate territories such as the Cocos Islands, Heard and McDonald Islands, Norfolk Island, Christmas Island, the Coral Sea Islands and Ashmore and Cartier Islands. While most of these islands are small, the United Nations Convention on the Law of the Sea allows Australia jurisdiction over large tracts of the ocean and seafloor that surround them. Australia also administers a portion of Antarctica, the Australian Antarctic Territory.

Australia has an Exclusive Economic Zone (EEZ) that is 200 nautical miles (370.4 km) wide, and also incorporates areas of the continental shelf outside the 200-mile boundary. This is measured from the lowest astronomical tide, defined as the lowest level that sea level can be predicted to fall to under normal meteorological conditions. Where the boundary overlaps with potential boundaries of other countries (such as Papua New Guinea, Indonesia, East Timor and some French island territories), a boundary has to be negotiated. The EEZ gives Australia jurisdiction over a marine area of about ten million sq km.

1.1 AREA, COASTLINE, TROPICAL AND TEMPERATE ZONES

	ESTIMATED AREA		Length of coastline(a) km	PROPORTION OF TOTAL AREA	
	Total sq km	Total area %		Tropical zone %	Temperate zone %
New South Wales	800 642	10	2 137	..	100
Victoria	227 416	3	2 512	..	100
Queensland	1 730 648	23	13 347	54	46
South Australia	983 482	13	5 067	..	100
Western Australia	2 529 875	33	20 781	37	63
Tasmania	68 401	1	4 882	..	100
Northern Territory	1 349 129	18	10 953	81	19
Australian Capital Territory	2 358	—(b)	..	..	100
Jervis Bay Territory	73	—(b)	57	..	100
Australia	7 692 024	100	59 736	39	61

.. not applicable

— nil or rounded to zero (including null cells)

(a) Includes islands.

(b) Less than 0.1%.

Source: Bureau of Meteorology; Geoscience Australia 2002.

The Central Lowlands stretch from the Gulf of Carpentaria through the Great Artesian Basin to the Murray-Darling Plains. Most of this area is flat and low-lying. The main exception occurs in South Australia, where relatively recent faulting has occurred, and the area takes the form of a number of blocks that have been moved up to form a series of ranges (e.g. the Flinders Ranges and Adelaide Hills), with the down-faulted blocks in between forming plains, some of them submerged (e.g. Spencer Gulf). Much of the Central Lowlands is occupied by the Great Artesian Basin, which consists of sedimentary rocks that hold water entering in the wetter Eastern Highlands.

The Eastern Highlands, stretching along most of the length of the east coast, are characterised over much of their length by a steep escarpment on the coastal side, a series of high plateaus, and then more gentle sloping towards the inland. While the highest elevations (over 1,800 metres) are found in the Snowy Mountains and Victorian Alps, many of the plateaus further north in New South Wales exceed 1,000 metres in elevation. In Queensland, 1,000 metres elevation is only reached in a few locations and the highlands are generally less pronounced.

The coastal escarpment is particularly marked along much of the New South Wales and southern Queensland coast, as well as more isolated ranges further north, such as those around Cairns. Australia's highest waterfalls (including Wollombi on the Macleay, Wallaman Falls on a tributary of the Herbert, Barron Falls near Cairns and Wentworth Falls in the Blue Mountains) occur where rivers flow over this escarpment. In the Victorian part of the highlands, the old plateau has been eroded into separate ranges and high plains, and is relatively steep on both the coastal and inland sides. Between the escarpment and the coast lies a coastal strip, sometimes flat but quite hilly in many places, and rarely more than 100 km wide.

As a result of the plateau-like nature of much of the Eastern Highlands, the Great Dividing Range, which separates rivers flowing to central Australia or the Murray-Darling Basin from those flowing to the Pacific Ocean or Bass Strait, is not very pronounced in most locations. In some places, such as the northern Snowy Mountains and Brindabella Ranges, the highest ranges do not coincide with the Great Dividing Range (which in that area lies east of Canberra).

The article *Landforms and their history*, in *Year Book Australia 1988* provides a more detailed description of Australia's landforms.

The history of Australia's landforms

As noted earlier, much of the Australian landscape is many millions of years old. The Western Plateau is especially old, and includes some of the oldest rocks on earth, more than 3,500 million years old. Most of this region has existed as a landmass for over 500 million years.

The present topography results from a long landscape history that can be considered as starting about 290 million years ago, the last time Australia was subjected to large-scale glaciation. Once the ice melted, parts of the continent subsided and were covered with sediment to form sedimentary basins such as the Great Artesian Basin. By early Cretaceous times, about 140 million years ago, Australia was already so flat and low that a major rise in sea level divided it into three landmasses as the shallow Cretaceous sea spread over the land. The main separation of Australia from Antarctica took place between 100 and 80 million years ago.

In the following Tertiary times, Australia can be regarded as a landscape of broad swells varied by a number of sedimentary basins (Murray, Gippsland, Eucla, Carpentaria, Lake Eyre and others). These slowly filled up and some are now sources of coal or oil. Most of the Eastern Highlands were uplifted at about this time, although a few parts were still experiencing uplift as recently as one million years ago. The central Australian region was also uplifted, and then eroded, leaving remnant mountains and individual peaks such as Uluru, which was exposed about 65 million years ago. Another feature of this era is the Nullarbor Plain, an uplifted limestone sea floor dating to about 25 million years ago.

Throughout the Tertiary, volcanoes erupted in eastern Australia. Some individual volcanoes were the size of modern Vesuvius, and huge lava plains covered large areas. Volcanic activity continued up until a few thousand years ago in Victoria, south-east South Australia and Queensland, and a resumption at some time in the next few thousand years cannot be ruled out. Australia's youngest volcano is Mount Gambier in South Australia, about 4,600 years old.

Between 55 and 10 million years ago, Australia drifted across the surface of the Earth as a plate, moving north from a position once adjacent to Antarctica. During much of this period, the Earth was much warmer and wetter than it is today, with little or no ice cover, even at the poles. Hence, Australia retained a warm, relatively moist climate through most of this period despite its latitudinal shift. It was probably under this climate that the deep weathered, iron-rich profiles that characterise much of Australia were formed. Aridity only seems to have set in after Australia reached near its present latitude range about five million years ago – with no known landforms (such as dunes or salt lakes) associated with aridity that are more than one million years old. The northern part of Australia was probably never arid.

Today, a large part of Australia is arid or semi-arid (see the article *Climatic aspects of Australia's deserts*, in *Year Book Australia 2006*). Large parts of the arid zone are covered with sand dunes, which are typically aligned longitudinally according to prevailing wind directions (south-east to east in the north, north-west to west in the south). These dunes were formerly mobile but are now mostly fixed. Plains covered with small stones (stony deserts or gibber plains) are found in areas without a sand cover. Salt lakes are found in many low positions, in places following lines of ancient drainage. They are often associated with lunettes (dunes formed on the downwind side of lakes), which have been the location of many important finds of Aboriginal prehistory. In addition to the present arid zone, some of these landforms are found in areas that were formerly arid but have since become wetter, such as parts of western Victoria and south-eastern South Australia.

On a global scale, the last few million years were notable for the Quaternary ice age. There were over 20 glacial and interglacial periods during this time, with the last ending about 12,000 years ago. As in the rest of the world, Australia's climate during this time was much cooler (and probably generally drier) than it is today, but only small parts of the continent were glaciated – the Central Plateau of Tasmania and an area of about 25 sq km around the summit of Mount Kosciuszko, above 1,800 metres elevation. These ice sheets disappeared about 20,000 years ago. A more significant impact of glacial periods on Australian landforms was through their impact on sea level. During peak glacial periods, the sea

level was more than 100 metres lower than it is now; Tasmania and New Guinea were joined to the Australian continent, and in some areas, such as the east coast of Queensland, the coastline was several hundred kilometres away from its present location.

River erosion has been important in carving the detail of much of the Australian landscape. Those rivers that flow directly to the sea have dissected broad regions near the coast into plateaus, hills and valleys. Other rivers drain inland, and while they may be eroding the valleys near their highland sources, their lower courses are filling up with alluvium. Most rivers of the Murray-Darling Basin reach the sea, but many elsewhere either end in salt lakes, which are dry for most of the time (such as Lake Eyre), or terminate on the plains of the Central Lowlands (such as the Paroo). Many of the features of the drainage patterns of Australia have a very long history and some individual valleys have maintained their position for hundreds of millions of years. The salt lakes of the Yilgarn Plateau in Western Australia are the remnants of a drainage pattern that was active before continental drift separated Australia from Antarctica.

During glacial periods of low sea level, coastal rivers tended to cut down to that level, especially towards the sea. When sea levels rose again, some of these valleys were drowned (such as Sydney Harbour), while others filled with alluvium as the sea rose, creating flat lowland valleys.

Coastal geomorphology is also largely the result of the accumulation of sediment in drowned coasts. In some areas, such as Ninety Mile Beach (Victoria) or the Coorong (South Australia), there are long beaches made simply from this accumulation. Further north along the east coast, many parts of the coastline consist of alternating long beaches and rocky headlands, with the beaches backed by plains filled with river and marine sediments.

The offshore shape of Australia, revealed in isobath contours, results mainly from the pattern of break-up of the super-continent of which Australia was once a part. The continental shelf around Australia varies greatly in width. In some areas it is several hundred kilometres wide, while in others, such as off far south-eastern New South Wales and much of Tasmania, it is less than 40 km in width. In South Australia, the continental shelf is cut by submarine canyons up to 4,600

metres deep offshore from the mouth of the Murray River. The Queensland coast is bounded by a broad plateau that has been exposed during the various glacial periods. Coral reefs have grown on this plateau at various times during the last 700,000 years while it has been submerged, although the present Great Barrier Reef, which did not start to form until after the last glaciation, is only a few thousand years old.

The Australian landforms of today are thus seen to result from long continued processes in a unique setting, giving rise to typical Australian landscapes, which in turn provide the physical basis for the distribution and nature of biological and human activity in Australia.

Rivers and lakes

Rivers

As described earlier, the rivers of Australia may be divided into two major classes, those of the coastal margins with moderate rates of fall, and those of the central plains with very slight fall. Australia's longest river system, the Murray-Darling, drains part of Queensland, most of New South Wales and northern Victoria, and a section of South Australia, finally flowing into the arm of the sea known as Lake Alexandrina, on the South Australian coast. The length of the Murray is about 2,520 km, while the longest branch of the combined Murray-Darling system, with its headwaters in the Culgoa catchment, is about 3,370 km long.

Most of the east coastal rivers are short, the exceptions being those rivers that penetrate the coastal escarpment, such as the Burdekin and Fitzroy in Queensland, and the Hunter in New South Wales. The south-west of Western Australia also has a number of short coastal rivers.

In addition to those rivers that form part of the Murray-Darling Basin, western Queensland has a number of inland-flowing rivers, such as the Paroo, Bulloo, Diamantina and Cooper Creek. These rivers do not reach the sea, but drain into Lake Eyre or dissipate without reaching any other river system.

A number of river systems reach the tropical or sub-tropical coast. Many of these are of considerable length, such as the Mitchell, Gregory and Leichhardt in northern Queensland,

the Daly and Victoria in the Northern Territory, and the Ord, Fitzroy, Ashburton, Fortescue and Gascoyne in Western Australia. All of these rivers have extremely large variations in flow between wet and dry seasons, arising from the great seasonal rainfall variations typical of this region. As a result, some only flow intermittently, for example, the Mitchell, with an annual discharge of about 12 cubic kilometres rivals the Murray-Darling as Australia's largest river system in terms of volume, but has discharges in February and March about 100 times those of July.

Australian river discharges are very small compared with those of many rivers elsewhere, reflecting the very low runoff from the Australian continent. By way of comparison, the annual discharge from the Amazon basin in South America is approximately 7,000 cubic kilometres.

Lakes

There are many lake types in Australia. The largest are salt lakes that are, or were, drainage sumps from internal rivers. For most of the time these lakes are beds of salt and dry mud. Lake Eyre, which has only completely filled three times in the last century, is the largest of these (9,500 sq km), while other large salt lakes include Lake Torrens (5,745 sq km) and Lake Gairdner (4,351 sq km).

Other natural lake types include coastal lakes formed by damming of valleys by marine sediments, fault angle lakes (such as Lake George near Canberra), volcanic lakes (mostly found in Victoria, south-eastern South Australia and Queensland) and glacial lakes (most common in Tasmania, but also found in the Snowy Mountains). Many of these lakes are permanent, but some, such as Lake George, dry out during drought periods, and all are small compared with the inland salt lakes – Australia has no natural, unmodified, permanent freshwater lake larger than 100 sq km. Many artificial lakes, or lakes expanded by artificial means, also exist in all states and territories. The combined Lakes Gordon and Pedder in south-western Tasmania are the largest of these, both in surface area (513 sq km) and volume (11,320 megalitres (ML)), while other very large artificial lakes include Lake Argyle on the Ord in northern Western Australia (5,720 ML) and Lake Eucumbene in the Snowy Mountains Scheme (4,870 ML).

Australia's climate

The island continent of Australia features a wide range of climatic zones, from the tropical regions of the north, through the arid expanses of the interior, to the temperate regions of the south. Australia is the world's second-driest continent (after Antarctica), with average (mean) annual rainfall below 600 millimetres (mm) over 80% of the continent, and below 300 mm over 50%. Summers are hot through most of the country, with average January maximum temperatures exceeding 30 degrees Celsius (°C) over most of the mainland except for the southern coastal fringe between Perth and Brisbane, and areas at high elevations. Winters are warm in the north and cooler in the south, with overnight frosts common in inland areas south of the Tropic of Capricorn. Only at higher elevations do winter temperatures approach those found in much of northern Europe or North America.

Seasonal fluctuations in both rainfall and temperature can be large in parts of the country. In northern Australia, temperatures are warm throughout the year, with a 'wet' season from approximately November through to April, when almost all the rainfall occurs, and a 'dry' season from May to October. Further south, temperature becomes more important in defining seasonal differences and rainfall is more evenly distributed throughout the year, reaching a marked winter peak in the south-west and along parts of the southern fringe.

Australia experiences many of nature's more extreme weather phenomena, including droughts, floods, tropical cyclones, severe storms, bushfires and the occasional tornado.

Climatic controls

Australia's climate is largely determined by its latitude, with the mainland lying between 10 degrees south (°S) and 39°S and Tasmania extending south to 44°S. This places much of Australia under the influence of the sub-tropical high pressure belt (or ridge), which is a major influence on climate near, and poleward of, the tropics in both hemispheres. The aridity of much of Australia is largely a consequence of the subsiding air associated with this ridge of high pressure.

The sub-tropical ridge consists of areas of high pressure (anticyclones) that pass from west to

east across the continent. Individual anticyclones, which can be up to 4,000 km across, can remain near-stationary for several days, bringing clear skies and fine conditions to large parts of the continent, before moving on. The latitude of the sub-tropical ridge varies seasonally. During winter, the ridge is normally centred between latitudes 30° and 35°S, whereas in summer it moves south to between latitudes 35° and 40°S (although individual systems can form significantly further north or south than these characteristic latitudes).

Winds circulate counter-clockwise around anticyclones in the Southern Hemisphere, and hence the flow on the southern side of the sub-tropical ridge tends to be westerly. This zone of westerly flow is generally strongest south of Australia (the so-called 'Roaring Forties'), but the northern part of the zone can affect southern Australia, particularly in winter and spring. Extensive depressions (lows) over the Southern Ocean have associated frontal systems embedded in the westerlies, which bring periods of rain and showers to southern parts of the country. Tasmania is under the influence of westerly flow for much of the year.

North of the sub-tropical ridge, the flow is generally easterly. In winter this easterly to south-easterly flow is especially persistent over the northern half of the continent, bringing dry conditions to most locations, except along the east coast. In summer, hot air rising over northern Australia causes an area of low pressure, drawing moist oceanic air from north and west of the continent. Where this air collides with the air coming from the south and east it generates what is known as the intertropical convergence zone, otherwise known as the monsoon trough. This zone progressively moves southwards over northern Australia (the exact timing and location vary from year to year), allowing warm, moist monsoonal air from the north-west to penetrate into the northern reaches of the continent. Elsewhere, moist easterly flow from the Pacific Ocean and Tasman Sea brings summer rain to most of the east coast.

Australia's generally low relief (map 1.2) means that topography has less impact on atmospheric systems that control the climate than is the case in more mountainous continents. This lack of topographic obstruction, and the absence of cool ocean currents off the west coast (as are found at similar latitudes off Africa and the Americas) as a stabilising influence, allows the occasional

penetration of tropical moisture deep into the continent. As a result, the Australian desert, while relatively dry, does not match the extreme aridity of deserts such as the Sahara where vast areas have average annual rainfalls below 25 mm (see the article *Climatic aspects of Australia's deserts*, in *Year Book Australia 2006*). There are also no barriers to occasional bands of moisture and cloud extending from the warm waters of the Indian Ocean off north-western Australia right across the continent to the southern states. These 'north-west cloud bands', which are most common in late autumn and early winter, can produce good rainfall in their own right, sometimes in significant amounts, but their major influence is to provide an additional in-feed of moisture into frontal systems traversing southern Australia, thus enhancing the rainfall produced by those systems.

One area where topography does have a major influence on rainfall is in Tasmania. Westerly winds are intercepted by the island's mountains, causing heavy rainfall on the western (windward) side, and leaving eastern and central Tasmania in a much drier so-called 'rain-shadow'. The interaction of topography with westerly winds in winter also plays a role in locally enhancing rainfall in regions such as the Australian Alps and the Adelaide Hills. The Great Dividing Range and associated ranges in eastern Australia enhance rainfall over the east coast hinterland during periods of easterly flow, and partially block moisture from penetrating further inland.

Episodic weather events

Tropical cyclones are the most dramatic episodic weather events to affect Australia. Tropical cyclones are strong, well-organised low pressure systems that form poleward of about 5° of the Equator, over water that is warmer than about 26°C. (The weak Coriolis force near the Equator, which is important in inducing the rotation required for the development of a tropical cyclone, accounts for the lack of cyclones in that region.) Tropical cyclones can vary significantly in size, and once formed are classified as category 1 (weakest) to 5 (strongest), according to their intensity at any given time. Category 4 and 5 cyclones have wind gusts exceeding 225 kilometres/hour (km/h) and can be exceptionally damaging, as in the near-total

destruction of Darwin by Tropical Cyclone Tracy on 25 December 1974. The strongest wind gust instrumentally measured in a tropical cyclone on the Australian mainland was 267 km/h, at Learmonth (Western Australia) during Tropical Cyclone Vance on 22 March 1999. However, it is believed that gusts in excess of 320 km/h have occurred away from instruments. The zone of most destructive winds associated with tropical cyclones is normally quite narrow, only about 50 km wide in the case of Cyclone Tracy, and rarely more than 300 km.

Tropical cyclones bring heavy rain as well as strong winds, and are the cause of most of Australia's highest-recorded daily rainfalls (table 1.6). Warm water acts as the cyclone's energy source, and hence is required to maintain the strength of the winds. As a result, tropical cyclones rapidly lose their intensity on moving over land, although the rainfall with former cyclones often persists well after the destructive winds have eased. This occasionally brings heavy rains deep into the inland, causing widespread flooding; such flooding can also occur from tropical depressions that never reach sufficient intensity to be classified as cyclones. Parts of inland Western Australia receive 30% to 40% of their average annual rainfall from these systems, and it is not unknown for places to receive their average annual rainfall within a one or two-day period as a tropical cyclone (or ex-cyclone) passes by.

On average, about three tropical cyclones directly approach the Queensland coast during the season between November and May, and three affect the north and north-west coasts, but the number and location of cyclones varies greatly from year to year. While the most susceptible areas are north of Carnarvon on the west coast and north of Rockhampton on the east coast, on occasions tropical cyclones have reached as far south as Perth and northern New South Wales. The most intense cyclones (categories 4 and 5) are most common off the north-west coast, but can also occur off the northern and eastern coasts. Tropical Cyclone Monica (category 5), in April 2006, was the most intense cyclone ever recorded off the Northern Territory coast, while Yasi (also category 5), in February 2011, was the most intense cyclone to make landfall in Queensland since at least 1918.

Away from the tropics, 'heatwaves' can occur over many parts of Australia. In southern Australia, they are normally associated with slow-moving anti-cyclones. A large anti-cyclone remaining stationary ('blocking') over the Tasman Sea will result in northerly or north-westerly flow on its western flank, bringing hot air from the centre of the continent over the south-east coastal regions (and sometimes to Tasmania). In south-western Australia, summer heatwaves are more commonly associated with the characteristic north-south trough of low pressure along the west coast moving offshore, suppressing sea breezes and causing hot north-easterly winds to blow from the interior to the coast.

'Cold outbreaks' can occur over southern Australia when intense south to south-west flow associated with strong cold fronts or large depressions directs cold air from the Southern Ocean over the continent. These outbreaks are most common in the south-east of the country and can result in low temperatures and snow falling to low elevations. While principally a winter and early spring phenomenon, cold outbreaks can occur at other times of year, and the fact that the air originates over the Southern Ocean (where there is only about a 4°C change in temperature from winter to summer) means that they can also bring cold air and 'unseasonable' snowfalls at high elevations at any time of year.

Intense low pressure systems can also form outside the tropics, most commonly off the east coast where they are known as 'east coast lows'. These systems can bring very strong winds and heavy rain, particularly where they direct moist easterly winds on their southern flank onto the coastal ranges of southern Queensland, New South Wales, eastern Victoria and north-eastern Tasmania. Examples of systems of this type include:

- two, a fortnight apart, in June 1967 off southern Queensland that caused major flooding and severe beach erosion in the Gold Coast region
- an intense low in Bass Strait that sank or damaged many yachts in the 1998 Sydney to Hobart race and
- a June 2007 system that brought flooding to the Hunter Valley in New South Wales and drove a large ship aground at Newcastle.

Interannual and interdecadal variability

The major driver of interannual climate variability in Australia, particularly eastern Australia, is the El Niño–Southern Oscillation phenomenon. El Niño is an anomalous large warming of the central and eastern tropical Pacific Ocean, while La Niña, the reverse phase of the system, is an anomalous cooling. The Southern Oscillation refers to a see-sawing of atmospheric pressure between the northern Australian–Indonesian region and the central Pacific Ocean. El Niño events are strongly associated with abnormally high pressures in the northern Australian–Indonesian region and abnormally low pressures over the central Pacific, while the reverse is true during La Niña events.

The Southern Oscillation Index (SOI) is an index of the pressure differences between Darwin and Tahiti and has traditionally been used as an indicator of El Niño events (which are very often, but not always, associated with a strongly negative SOI). However, with modern satellite and floating buoy observations developed over the last 30 years, ocean temperature anomalies, both at and below the surface, can be monitored directly and hence proxy measurements, such as the SOI, are less important than they once were.

El Niño events characteristically develop during the southern autumn, and continue for about 9–12 months until the following autumn. The 2002–03 and 2009–10 El Niño events followed this pattern, developing in May–June and dissipating in February–March. In contrast, the 2006–07 event developed unusually late in August–September 2006 (although dry conditions were well established in many areas by then), before breaking down in February–March 2007.

On occasions, El Niño events are followed immediately by La Niña events (or vice versa), but it is more common for them to be followed by near-normal (neutral) ocean conditions. Events lasting for more than one year are rare, but not unknown. There are typically two to three El Niño events per decade, but there is large variation from decade to decade in their frequency and the balance of El Niño and La Niña events. Between 1980 and the mid 2000s, El Niño events have been predominant, whereas La Niña events were frequent in the 1950s and 1970s. There have been two major La Niña events in the last few years, and the event of 2010–11 was one of the strongest of the last century. It was accompanied

by widespread heavy rain and flooding (see special article at the end of this chapter).

El Niño events are generally associated with a reduction in winter and spring rainfall across much of eastern, northern and southern Australia. This can lead to widespread and severe drought, particularly in eastern Australia, as well as increased daytime temperatures and bushfire risk. Conversely, La Niña events are generally associated with wetter-than-normal conditions and have contributed to many of Australia's most notable floods. There is considerable variation in the way each El Niño and La Niña event affects rainfall patterns, from the time of onset, through its developmental stages to eventual decay.

Temperatures in the tropical Indian Ocean also have an influence on Australia's climate, particularly in the south-west of Western Australia, where the influences of El Niño and La Niña events are more limited. Indian Ocean conditions also have a bearing on winter rainfall in south-eastern Australia through their effects on the frequency of northwest cloud bands.

Many parts of Australia also have a high level of rainfall variability on decadal timescales. The drivers for this are unclear, although at least some of the variability is linked with variations on decadal timescales in the relative frequency of El Niño and La Niña events. Interdecadal variability is particularly high in the more arid areas of Australia. As an example, the 11-year average annual rainfall at Marree (South Australia) has fluctuated from around 100 mm in the 1960s to 250 mm in the 1970s.

The wide range of rainfall variability in Australia has had many consequences. Perhaps the most famous occurred on the southern fringe of the South Australian desert, in the Flinders Ranges region, in the 1870s. In 1865, a boundary ('Goyder's Line'), based on surveys of native vegetation, had been defined by the then Surveyor-General, G.W. Goyder, as the northern limit of the region where cropping was feasible. The years immediately following were particularly wet and many farms were established north of Goyder's Line. They prospered for a few years, but when rainfall returned to more normal levels, the farms became unviable and were largely abandoned. Many of the ruined homesteads are still visible today.

The article *Climate variability and El Niño*, in *Year Book Australia 1998*, provides further details.

Climate change

Temperatures in Australia were relatively stable from 1910 until 1950, and since then have followed an increasing trend, with an overall increase during 1910 to 2010 of approximately 0.8°C (calculated by comparing decadal mean temperatures in the 1910–1950 period with those in the last 10 years). Overnight minimum temperatures have warmed more quickly than daytime maximum temperatures, but both have increased over almost the entire continent, with the largest increases occurring in north-eastern Australia. In conjunction with this trend, the frequencies of frosts and other extreme low temperatures have decreased, while the frequency of extreme high temperatures has increased, although at a slower rate. Over Australia, the observed warming has accelerated in recent years, and the warming from the late 20th century has been largely attributed to the enhanced greenhouse effect.

Over the continent as a whole, rainfall has increased over the 1900–2010 period, with the largest increases occurring over northern and north-western Australia. However, since 1960, there have been substantial decreases in rainfall over three relatively small, but economically and agriculturally important, regions: south-western Western Australia, Victoria (particularly southern Victoria) and the eastern coastal fringe (particularly south-eastern Queensland).

Table 1.3 shows temperatures and rainfall averaged over Australia since the commencement of comprehensive national records. The article, *A hundred years of science and service – Australian meteorology through the twentieth century*, in *Year Book Australia 2001* provides further details, including maps of temperature and rainfall trends to 1999.

While some temperature and rainfall data exist prior to the starting dates used in table 1.3, they have not been used in analyses of climate change. This is because large parts of the Australian continent had no observations before that time. In the case of temperatures, most pre-1910 data are also not comparable with post-1910 data, because the louvred, white-painted screen (the 'Stevenson screen') that is used for sheltering thermometers from direct solar radiation was only introduced as a national standard around that time. Many pre-1910 temperatures were measured in locations such as underneath tin verandahs or even indoors, and cannot be validly

compared with more recent data (see the article *Temperature measurement and the Stevenson screen*, in *Year Book Australia 2005* for further details).

Information on global changes in temperature can be found in *International comparisons* at the end of this chapter.

1.3 MEAN TEMPERATURES AND RAINFALL

Period(b)	Temperature deviation(a) °C	Rainfall mm
10-YEAR PERIODS(c)		
1900–09	na	429
1910–19	-0.33	442
1920–29	-0.40	425
1930–39	-0.28	416
1940–49	-0.41	430
1950–59	-0.27	458
1960–69	-0.22	422
1970–79	-0.12	517
1980–89	0.23	459
1990–99	0.39	476
2000–09	0.49	486
YEARS		
1990	0.50	414
1991	0.68	463
1992	0.15	453
1993	0.30	484
1994	0.25	336
1995	0.18	517
1996	0.60	459
1997	0.23	508
1998	0.84	548
1999	0.21	576
2000	-0.21	696
2001	-0.10	547
2002	0.63	329
2003	0.62	470
2004	0.45	495
2005	1.06	395
2006	0.47	486
2007	0.71	507
2008	0.41	478
2009	0.90	453
2010	0.19	703
2011	-0.14	p705

na not available

p preliminary figure or series subject to revision

(a) Temperatures are shown as anomalies (or deviations) from 1961–90 base period.

(b) The full annual time series since 1900 (rainfall) and 1910 (temperature) are available via <<http://www.bom.gov.au/climate/change>>.

(c) Annual average rainfall over the 10-year period.

Source: Bureau of Meteorology.

Rainfall and other precipitation

Annual

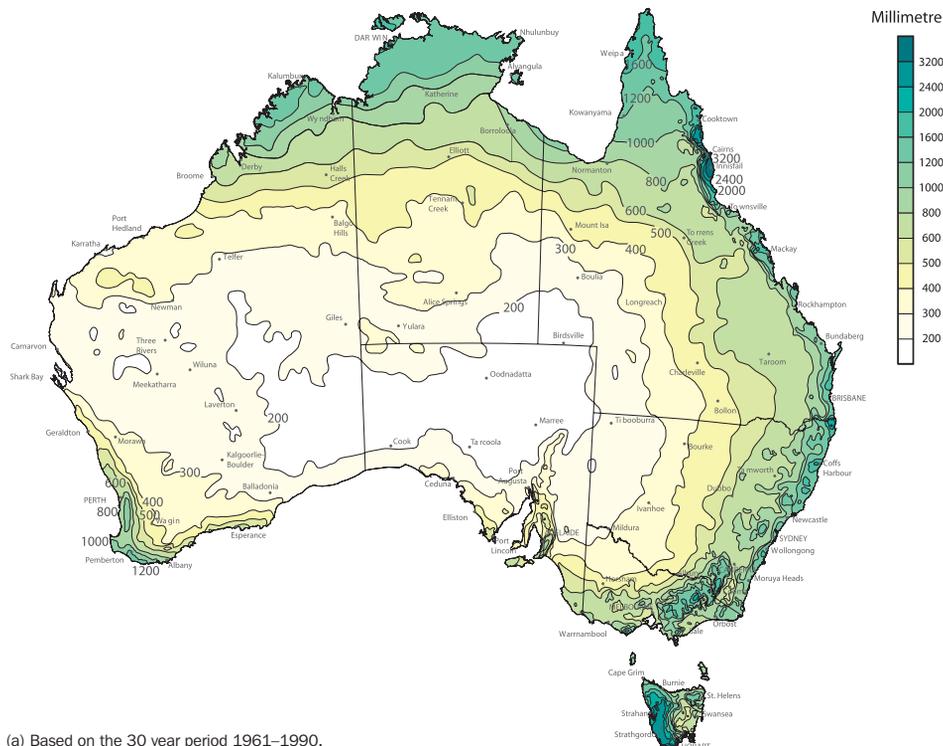
Map 1.4 shows average annual rainfall over the Australian continent.

The driest section of Australia, with an average of less than 200 mm per year, extends over a large area from the west coast near Shark Bay, across the interior of Western Australia and northern South Australia into south-western Queensland and north-western New South Wales. The driest part of this region is in the vicinity of Lake Eyre in South Australia, where average annual rainfall is below 150 mm. This region is not normally exposed to moist air masses and rainfall is irregular, averaging rain on only around 20 days per year.

Very occasionally, favourable synoptic situations (usually, but not always, disturbances of tropical origin) can bring heavy rains to many parts of this normally arid to semi-arid region, with falls of up to 400 mm over a few days being recorded in the most extreme cases. Such heavy rainfalls often lead to widespread flooding and a subsequent short-lived ‘blooming’ of the desert regions. Whilst such rain events are uncommon, the environment in Australia (both the lack of topographic barriers to moist air moving southwards from the tropics, and the presence of warm, rather than cold, waters as a potential source of moist air off the west coast) is more favourable to their occurrence than it is in some other arid zones. Rainfall in Australia’s deserts is consequently higher than in some other deserts; the Atacama Desert on the west coast of South America has locations where no rain has fallen for centuries, while large parts of the Sahara and Arabian deserts, and parts of central Asia, have average annual rainfall of 25 mm or lower. There is only one recorded instance, at Mulyie (about 100 kilometres east of Port Hedland, WA) in 1924, of an Australian weather station being rainless for a complete calendar year.

The region with the highest average annual rainfall is the east coast of Queensland between Cairns and Cardwell, where mountains are very close to the tropical coast. The summit of Bellenden Ker has an average of 8,140 mm over 38 years of records, while at lower elevations, Topaz has an average of 4,423 mm over 31 years and Babinda 4,287 mm over 100 years. The mountainous region of western Tasmania also has a high annual rainfall, with Lake Margaret having

1.4 AVERAGE ANNUAL RAINFALL FOR AUSTRALIA(a)



(a) Based on the 30 year period 1961–1990.
Source: Bureau of Meteorology

an average of 2,942 mm over 66 years; short-term records suggest that other parts of the region have an average near 3,500 mm.

The Snowy Mountains area in New South Wales also has a particularly high rainfall. While there are no official rain gauges in the wettest areas on the western slopes above 1,800 metres elevation, runoff data suggest that the average annual rainfall in parts of this region exceeds 3,000 mm. Small pockets with averages exceeding 2,500 mm also occur in the north-east Victorian highlands and some parts of the east coastal slopes.

Seasonal

Australia's rainfall pattern is strongly seasonal in character, with a winter rainfall regime in parts of the south, a summer regime in the north and generally more uniform or erratic throughout the year elsewhere. Major rainfall zones include:

- The marked wet summer and dry winter of northern and north-western Australia. In this

region, winters are normally almost completely dry (e.g. Darwin in table 1.5), except near exposed eastern coastlines.

- The wet summer and relatively (but not completely) dry winter of south-eastern Queensland and north-eastern New South Wales (e.g. Brisbane in table 1.5).
- Fairly uniform rainfall in south-eastern Australia, including most of New South Wales, parts of Victoria and eastern Tasmania (e.g. Sydney, Melbourne, Canberra and Hobart in table 1.5). The exact seasonal distribution can be influenced by local topography, for example, winter is the wettest season at Albury on the windward side of the Snowy Mountains, but the driest season at Cooma on the leeward side.
- A marked wet winter and dry summer (sometimes called a 'Mediterranean' climate). This climate is most prominent in south-western Western Australia and southern South

1.5 AVERAGE MONTHLY RAINFALL AND TEMPERATURES(a), Capital cities and Alice Springs

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
AVERAGE DAILY MAXIMUM TEMPERATURE (°C)													
Sydney	26.1	26.4	25.2	23.1	20.4	17.7	17.2	18.5	20.7	22.4	23.6	25.6	22.3
Melbourne	25.8	26.5	24.0	20.5	17.3	14.4	13.9	15.3	17.3	19.7	21.8	24.2	20.1
Brisbane	29.2	28.8	28.0	26.1	23.5	21.1	20.6	21.6	23.9	25.5	27.1	28.6	25.3
Adelaide	28.7	29.3	26.1	22.2	18.8	16.0	15.2	16.5	18.7	21.7	24.7	26.8	22.1
Perth	31.9	32.2	29.8	25.9	21.8	18.9	17.9	18.4	20.2	22.5	25.8	29.2	24.5
Hobart	21.8	22.0	20.2	17.9	15.1	12.3	12.2	13.4	15.3	17.2	18.6	20.3	17.2
Darwin	31.8	31.4	31.8	32.8	32.2	30.7	30.7	31.5	32.7	33.3	33.3	32.6	32.1
Canberra	27.7	27.3	24.5	20.0	15.9	12.3	11.5	13.2	16.2	19.4	22.6	26.3	19.7
Alice Springs	36.4	35.1	32.8	27.8	23.2	19.7	20.0	23.0	27.5	30.9	33.9	35.8	28.8
AVERAGE DAILY MINIMUM TEMPERATURE (°C)													
Sydney	19.4	19.6	18.1	15.2	12.5	9.6	8.6	9.5	11.7	14.2	16.0	18.3	14.4
Melbourne	15.4	15.8	14.3	11.7	9.8	7.6	6.8	7.6	9.0	10.5	12.2	13.9	11.2
Brisbane	21.2	20.9	19.5	16.8	14.2	10.8	9.5	9.9	12.4	15.5	18.0	19.9	15.7
Adelaide	16.8	17.1	15.2	12.1	10.2	8.1	7.4	8.2	9.6	11.5	13.8	15.5	12.1
Perth	17.2	17.8	16.3	13.4	10.8	9.1	8.4	8.5	9.3	10.5	13.0	15.2	12.5
Hobart	12.5	12.7	11.4	9.6	7.6	5.2	4.7	5.5	6.9	8.3	9.8	11.3	8.8
Darwin	24.8	24.9	24.6	24.2	22.4	20.1	19.4	20.9	23.4	25.1	25.6	25.5	23.4
Canberra	13.3	13.3	10.9	6.7	3.7	0.8	-0.1	1.0	3.6	6.3	8.9	11.6	6.7
Alice Springs	21.3	20.7	17.4	12.3	8.2	4.8	3.8	6.2	10.4	14.6	17.9	20.2	13.2
AVERAGE RAINFALL (mm)													
Sydney	136.3	130.9	151.2	127.7	110.0	126.8	69.6	92.0	68.8	88.1	101.7	73.4	1276.5
Melbourne	52.4	49.0	40.0	52.1	58.8	48.6	45.1	54.6	59.2	69.5	64.2	61.1	654.4
Brisbane	158.6	174.3	125.3	108.7	115.7	53.1	60.1	37.2	34.8	96.8	106.0	119.6	1194.0
Adelaide	19.4	12.7	26.6	42.0	61.2	79.7	79.9	68.0	62.2	347.5	29.7	27.8	563.0
Perth	12.7	18.2	15.9	36.5	92.8	145.5	154.1	117.3	76.7	44.2	26.5	7.2	745.3
Hobart	47.3	40.0	41.9	44.2	38.6	37.5	53.7	59.2	48.7	48.3	50.6	56.5	576.4
Darwin	499.8	336.2	376.3	104.4	23.2	1.6	0.5	8.0	15.5	76.6	134.0	270.9	1847.1
Canberra	66.3	52.7	50.3	49.3	44.6	38.4	46.4	49.2	56.7	60.9	67.4	47.8	630.0
Alice Springs	41.3	48.5	47.9	24.1	20.6	15.2	14.3	9.2	11.3	23.2	29.8	40.1	325.6

(a) Averages are for the period (1971–2000) except for Adelaide (1977–2000). Brisbane, Perth, Darwin, Canberra and Alice Springs averages are for observations taken at airports, others are at locations in or near the central city.

Source: Bureau of Meteorology 2003.

Australia (e.g. Adelaide, Perth in table 1.5), but there is also a winter rainfall maximum in some other parts of the south-east, particularly those areas exposed to westerly or south-westerly winds, such as western Tasmania and south-western Victoria.

- Low and erratic rainfall through much of the western and central inland. Rainfall events are irregular and can occur in most seasons, but are most common in summer (e.g. Alice Springs in table 1.5).

Rain days and extreme rainfalls

The frequency of rain days (defined as days when 0.2 mm or more of rainfall is recorded in a 24-hour period) is greatest near the southern Australian coast, exceeding 150 rain days per year

in much of Tasmania, southern Victoria and the far south-west of Western Australia, peaking at over 250 per year in western Tasmania. Values exceeding 150 per year also occur along parts of the north Queensland coast. At the other extreme, a large part of inland western and central Australia has fewer than 25 rain days per year, and most of the continent away from the coasts has fewer than 50 per year. In the high rainfall areas of northern Australia away from the east coast, the number of rain days is typically about 80 to 120 per year, but rainfall events are likely to be heavier in this region than in southern Australia.

The highest daily rainfalls have occurred in the northern half of Australia and along the east coast, most of them arising from tropical cyclones, or further south-east coast lows, near

the coast in mountainous areas. Daily falls in excess of 500 mm have occurred at scattered locations near the east coast as far south as the Illawarra, south of Sydney, and falls exceeding 300 mm have occurred in north-eastern Tasmania, and the Otway Ranges and parts of Gippsland in southern Victoria.

1.6 HIGHEST DAILY RAINFALLS(a)

	mm	Date
New South Wales		
Dorrigo (Myrtle Street)	809	21.2.1954
Cordeaux River	573	14.2.1898
Victoria		
Tanybryn	375	22.3.1983
Mount Wellington	319	28.6.2007
Queensland(b)		
Beerwah (Crohamhurst)	907	3.2.1893
Finch Hatton PO	878	18.2.1958
South Australia		
Motpena	273	14.3.1989
Nilpena	247	14.3.1989
Western Australia		
Roebourne (Whim Creek)	747	3.4.1898
Fortescue	593	3.5.1890
Tasmania		
Cullenswood	352	22.3.1974
Mathinna	337	5.4.1929
Northern Territory		
Roper Valley Station	545	15.4.1963
Angurugu (Groote Eylandt)	513	28.3.1953
Australian Capital Territory		
Lambrigg	182	27.5.1925

- (a) The standard daily rainfall period is 9.00 am to 9.00 am.
 (b) Bellenden Ker (Top Station) has recorded a 48-hour total of 1,947 mm on 4–5 January 1979, including 960 mm from 3.00 pm on the 3rd to 3.00 pm on the 4th. No observation was made at 9.00 am on the 4th.

Source: Bureau of Meteorology.

1.7 HIGHEST ANNUAL RAINFALLS

	Station	Year	mm
NSW	Tallowood Point	1950	4 540
Vic.	Falls Creek SEC(a)	1956	3 739
Qld	Bellenden Ker (Top Station)	2000	12 461
SA	Aldgate State School	1917	1 853
WA	Kimberley Coastal Camp	2000	2 334
Tas.	Lake Margaret	1948	4 504
NT	Darwin Botanic Gardens	1998	2 906
ACT	Bendora Dam	1974	1 831

(a) State Electricity Commission.

Source: Bureau of Meteorology.

Most locations in temperate Australia away from the east coast have highest recorded daily rainfalls in the 75–150 mm range, although some locations have exceeded 200 mm. In these regions, extreme daily rainfalls are often associated with thunderstorms, for which rainfall recordings can vary dramatically over short distances.

The highest daily and annual rainfalls for each state and territory are listed in tables 1.6 and 1.7.

Floods

Heavy rainfall conducive to widespread flooding can occur anywhere in Australia, but is most common in the north and in the eastern coastal areas. There are three main flood types:

- Flash floods, which are generally localised and often emanate from severe thunderstorms (see *Thunderstorms, hail and tornadoes*).
- Short-lived floods lasting a few days that occur in shorter coastal streams and inundate the natural or modified flood plain. These are the most economically damaging floods, affecting the relatively densely-populated coastal river valleys of New South Wales and Queensland (e.g. the Burdekin, Brisbane, Tweed, Richmond, Clarence, Macleay, Hunter and Nepean-Hawkesbury valleys), and the major river valleys of the tropics. While these floods are chiefly caused by summer and autumn rains, outside the northern tropics they can occur in any season. Floods of similar duration also occur in Tasmania, Victoria (particularly rivers draining the north-east ranges) and the Adelaide Hills, although in these regions they are more common in winter and spring.
- Long-lived floods of the major inland basins. These floods usually arise from heavy summer rains in inland Queensland and New South Wales, and move slowly downstream, some ultimately draining into the lower Murray-Darling system or towards Lake Eyre. Floods of this type can take several months to move from the upper catchments to the lower Darling or to Lake Eyre. They often cover an extensive area and gradually disappear through a combination of seepage into the sandy soils and evaporation; it is only occasionally that floodwaters of Queensland origin actually reach Lake Eyre. Floodwaters can also cover large areas in situ when heavy rains occur in a region of unco-ordinated drainage such as much of western and central Australia. (There

is no evidence that Lake Eyre flooding leads to increased rainfall in eastern Australia, with research indicating that any observed linkage is an artefact of the tendency of Lake Eyre floods to occur during La Niña years.)

Droughts

Drought, in general terms, refers to an acute deficit of water supply to meet a specified demand. The best single measure of water availability in Australia is rainfall, although factors such as evaporation and soil moisture are also significant and can be dominant in some situations. Demands for water are very diverse, and droughts therefore can be considered on a variety of timescales. Rainfall in a single year is important for unirrigated crop and pasture growth, while for large water storages and irrigation, variations on a multi-year timescale are more important, and a succession of relatively dry years that are not exceptional individually can cause severe water storages when aggregated over an extended period.

While droughts can occur in all parts of Australia, they are most economically damaging in south-eastern Australia (southern Queensland, New South Wales, Victoria, Tasmania and the settled parts of South Australia), an area encompassing about 75% of Australia's population and much of its agriculture. In south-western Western Australia, another economically and agriculturally significant area, interannual variability of rainfall is smaller than it is in the south-east and severe widespread droughts in individual years are less important, although, in recent decades, this area has experienced a general decline in rainfall (see *Climate change*).

In terms of rainfall deficits over a one to two-year period, the most severe droughts on record for eastern Australia have been those of 1901–02, 1982–83, 1994–95, 2002–03 and 2006–07, all of which were associated with El Niño. Occasionally, severe droughts are embedded within more extensive dry periods; the 1901–02 drought was contained within a persistently dry period from 1895–1903 (the so-called 'Federation Drought'). Droughts can have a severe economic impact, for example, the direct effect of the 2002–03 drought on agricultural production is that it had a downward impact on gross domestic product growth of almost one percentage point between 2001–02 and 2002–03, while the 2006–07 drought

had a downward impact of 0.6%. Other notable droughts on the 1 to 2 year timescale include those of 1888, 1914, 1919–20, 1940–41, 1944, 1946, 1965, 1967 and 1972. The years 2006 and 2010 also saw particularly severe short-term droughts in the south-west of Western Australia.

Longer-term periods of persistent below-average rainfall are also often loosely referred to as 'droughts', and apart from that of 1895–1903, have generally been more regional in nature. A typical example of such a long-term drought occurred over large parts of eastern Australia from 2001 to 2009, and in some areas, such as southern Victoria (including Melbourne), from 1997 to 2009. The Sydney region and eastern Queensland were affected from 1999–2000, although with some moderation from mid 2007 onwards. The long-term drought conditions in eastern Australia were largely ended by persistent heavy rains during 2010 and early 2011. The south-west of Western Australia has also experienced a marked downturn in rainfall since 1970. Other extended dry periods of this type affected much of inland Australia between 1958 and 1968, the south-east from 1937–45, and Queensland from 1991–95.

Typically, these multi-year dry episodes are not ones of continuous below normal rainfall, but rather periods of near normal rainfall over several months, alternating with drier periods, and few, if any, times of sustained above normal rainfall to offset the dry periods. Large water storages are particularly susceptible to such events, as they typically rely on a relatively small number of wet years to offset losses during drier periods. The Sydney water supply catchments provide an example of this, with about 40% of the total inflows into the Warragamba catchment since 1910 occurring in the wettest 10% of years.

The period from 2001 to 2009 has been the driest on record over parts of eastern Australia, meaning that many large water storages did not fully recover from the 2002–03 drought prior to the onset of the 2006–07 drought. While rainfall returned to near normal levels in the second half of 2003 following the severe drought of 2002–03, there were no periods of sustained above average rainfall in most of the region from early 2001 to the summer of 2009–10. For eastern Australia as a whole (defined as the combined areas of Queensland, New South Wales, Victoria and Tasmania), the four-year period from June 2001 to May 2005 was the driest June

to May four-year period on record, whilst the six-year period from June 2001 to May 2007 ranks second behind 1900–06. Heavy rains in the summers of 2007–08 and 2008–09 eased the situation somewhat in tropical Queensland and on parts of the east coast. For Australia’s cropping regions, the eight-year period from June 2000 to May 2008 was the driest on record, and for south-eastern Australia a similar record was set by the period from June 2001 to May 2009. Conditions in the period 2001–09 were generally comparable to those of the lengthy drought of the 1940s.

Map 1.8 compares the 2001–09 period to other eight-year periods. For example, the area around Melbourne had lower rainfall in the period 2001–09 than in any other eight-year period on record. The choice of period captures the peak intensity of the 2001–09 drought described above.

Adding to the impact of recent dry conditions has been the accompanying increase in temperature. The period from July 2001 to June 2009 was clearly the warmest such period on record

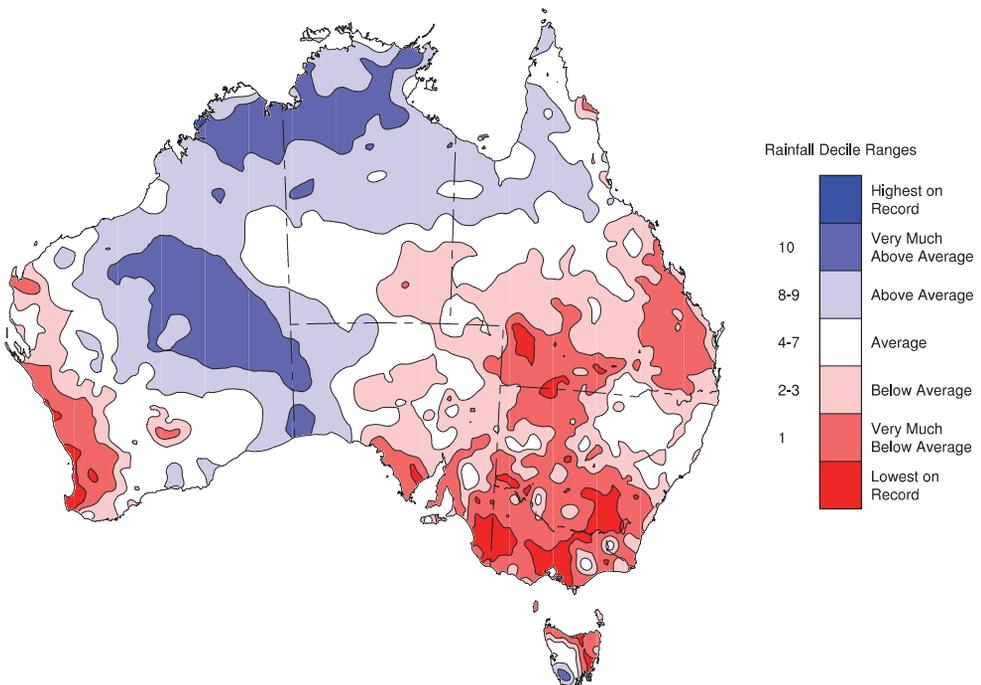
for eastern Australia. Maximum temperatures averaged over Australia were 0.86°C above the 1961–90 normal. In contrast, temperatures averaged through the driest periods of the 1940s were near the 1961–90 normal.

Drought definitions, and the area of coverage and length of droughts to that time, together with related information, may be obtained from the article *Drought in Australia*, in *Year Book Australia 1988*.

Thunderstorms, hail and tornadoes

Thunderstorms are most frequent over northern Australia. Thunder is heard at least once on 80 days or more per year near Darwin, largely as a result of convective processes during the summer wet season. High frequencies (30 to 50 per year) also occur over the eastern uplands of New South Wales as a result of orographic uplift of moist air streams. Some parts of southern Australia receive fewer than ten thunderstorms per year, with eastern Tasmania receiving fewer than five.

1.8 AUSTRALIAN RAINFALL DECILES—1 June 2001 to 31 May 2009



Source: Bureau of Meteorology.

Through most of Australia, thunderstorms are more common during the warmer half of the year, but along the southern fringe they also occur in winter as a result of low-level instability in cold air masses of Southern Ocean origin.

Thunderstorms are also relatively common over many parts of inland Australia, with most of the arid zone having at least 15 thunder days per year, and parts of interior Western Australia having 40 or more. These storms are often 'dry' with most or all rain evaporating before it reaches the ground – indeed, in a few locations there are more days of thunder per year than there are days of rain.

Some thunderstorms can become severe, with flash flooding, large hail and damaging winds. These storms can be very destructive. The Sydney hailstorm of 14 April 1999, in which hailstones up to nine centimetres (cm) in diameter were observed, was Australia's most costly natural disaster, with losses estimated at \$1.7 billion. Hailstorms with losses exceeding \$1 billion also occurred in both Melbourne and Perth in March 2010. Flash flooding associated with severe thunderstorms has caused loss of life, with particularly notable examples in Toowoomba and the Lockyer Valley (Queensland) in January 2011 and Canberra in January 1971. Thunderstorms have also been implicated in numerous air crashes, such as when a plane crashed into Botany Bay on 30 November 1961 with the loss of 15 lives. Wind gusts exceeding 170 km/h have been measured during severe thunderstorms, with one notable reading being 185 km/h at Brisbane Airport on 18 January 1985.

While thunderstorms in general are most common in northern Australia, the most damaging thunderstorms, in terms of hail and wind gusts, occur in the eastern halves of New South Wales and southern Queensland. Smaller hail (less than 1 cm in diameter) commonly occurs in southern coastal Australia in cold unstable air in the wake of cold frontal passages.

Tornadoes are also associated with severe thunderstorms, although they do not occur with the same frequency or severity as can occur in the United States of America. As tornado paths are narrow it is rare, but not unknown, for them to strike major population centres, with notable examples occurring in Brighton (Melbourne) in February 1918, the southern suburbs of Brisbane in November 1973 and several Perth suburbs in May 2005.

Snow

During most years, snow covers much of the Australian Alps above 1,500 metres for varying periods from late autumn to early spring. Similarly, in Tasmania, the mountains are covered fairly frequently above 1,000 metres in those seasons. The area, depth and duration of snow cover are highly variable from year to year. These areas can experience light snowfalls at any time of year. While small patches of snow can occasionally persist through summer in sheltered areas near the highest peaks, there are no permanent snowfields.

Snowfalls at lower elevations are more irregular, although areas above 600 metres in Victoria and Tasmania, and above 1,000 metres in the New South Wales highlands, receive snow at least once in most winters, as do the highest peaks of Western Australia's Stirling Ranges. In most cases, snow cover is light and short-lived. In extreme cases, snow has fallen to sea level in Tasmania and parts of Victoria, most recently in August 2005, and to 200 metres in other parts of southern Australia, but this is very rare. The only major Australian cities to have received a significant snow cover at any time in the last century are Canberra and Hobart, although Melbourne experienced a heavy snowfall in 1849, and there are anecdotal reports of snowflakes in Sydney in 1836.

The heaviest snowfall in Australian history outside the alpine areas was that of 4–5 July 1900, when 50–100 cm fell around Bathurst and in the Blue Mountains, and 25 cm as far west as Forbes (only 240 metres above sea level). Other major widespread low-elevation snow events include those of July 1901, July 1949 and July 1984.

Temperature

Average temperatures

Average annual air temperatures range from 28°C along the Kimberley coast in the extreme north of Western Australia to 4°C in the alpine areas of south-eastern Australia. Although annual temperatures can be used for broad comparisons, monthly temperatures are required for detailed analyses.

July is the month with the lowest average temperature in all parts of the continent. In the south, the months with the highest average temperature are January or February. Due to the increase in cloudiness during the wet season,

the month of highest average temperature in the north of the continent is December or, in the extreme north and north-west, November.

Temperature differences between winter and summer are least in tropical Australia. They are greatest in the southern inland, with seasonal differences along the coast being moderated by the ocean's proximity.

Maps 1.9 to 1.12 show average monthly maximum and minimum temperatures for January and July.

Average monthly maxima

In January, average maximum temperatures exceed 36°C over a vast area of the interior and exceed 39°C over parts of the north-west. The highest summer maxima occur in the Pilbara and Gascoyne regions of north-western Western Australia, where average January maxima are around 41°C. In some years, daily maxima exceed 40°C for several weeks at a time. Marble Bar experienced 160 consecutive

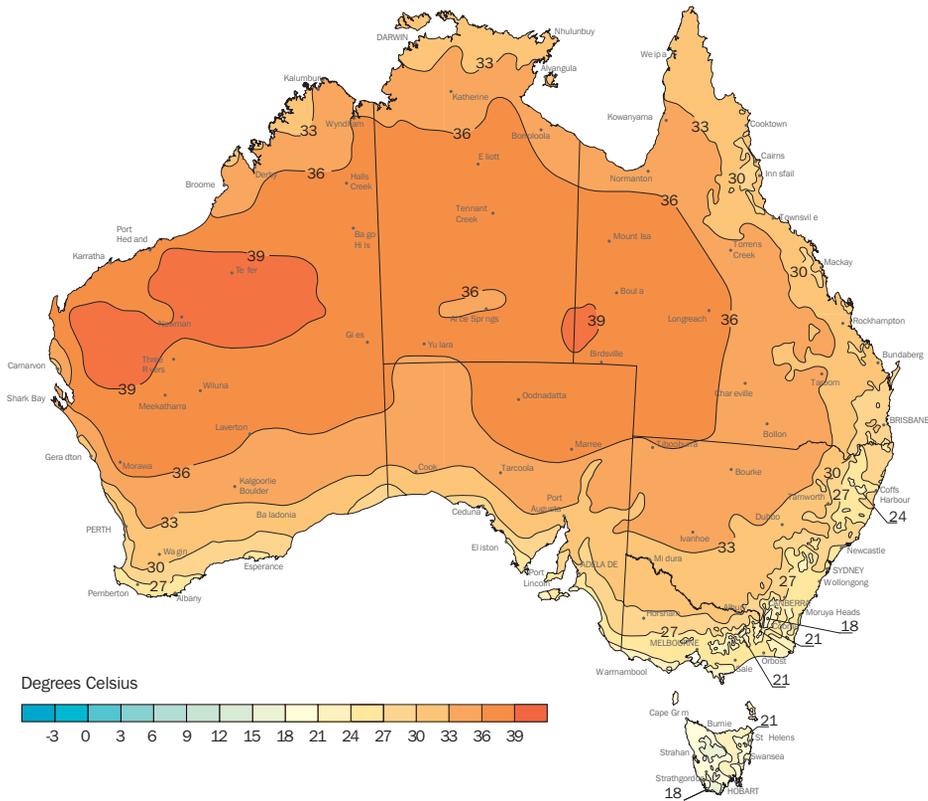
days above 37.8°C (100° Fahrenheit) in 1923–24, and had an average monthly maximum of 44.9°C in February 2007, an Australian record. At the other extreme, average January maxima are near 15°C on the highest peaks of the south-east ranges and near 20°C in much of Tasmania.

In July, a more regular latitudinal distribution of average maxima is evident, ranging from over 30°C near the north coast to below 3°C in the alpine areas of the south-east.

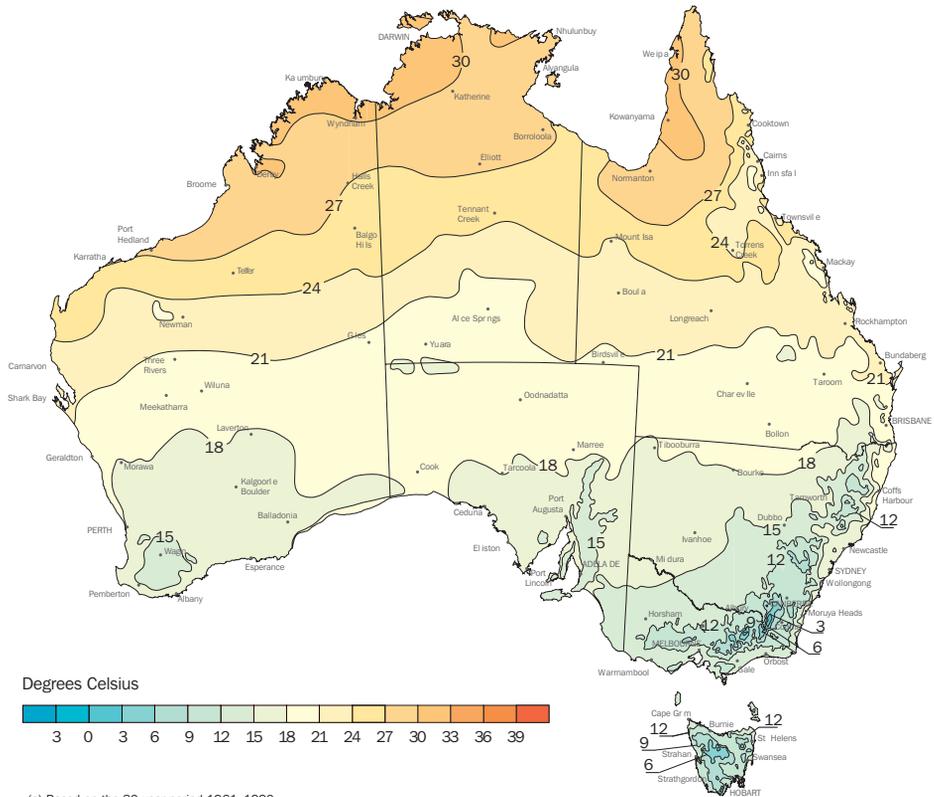
Average monthly minima

Average minimum temperatures in all seasons are highest in northern Australia and near the coasts, and are lowest in the mountainous areas of the south-east. The highest average January minimum temperatures (above 24°C) are found over most of tropical Australia away from the east coast, while in July (winter) they exceed 21°C only at some coastal locations in northern Australia and on the Torres Strait and Tiwi Islands.

1.9 AVERAGE MAXIMUM TEMPERATURE(a)—JANUARY



1.10 AVERAGE MAXIMUM TEMPERATURE(a)—JULY



(a) Based on the 30-year period 1961–1990.
Source: Bureau of Meteorology.

Low minimum temperatures are highly sensitive to local topography, with the lowest minimum temperatures occurring in high-elevation valleys, as cold air drains from hills to valleys overnight, making hilltops and ridges warmer overnight, even in areas with local relief of only a few tens of metres. In the most favoured locations in the mountains of New South Wales, average minimum temperatures are below 5°C in January and –5°C in July, while most inland areas south of the tropics have average July minima between 0° and 6°C.

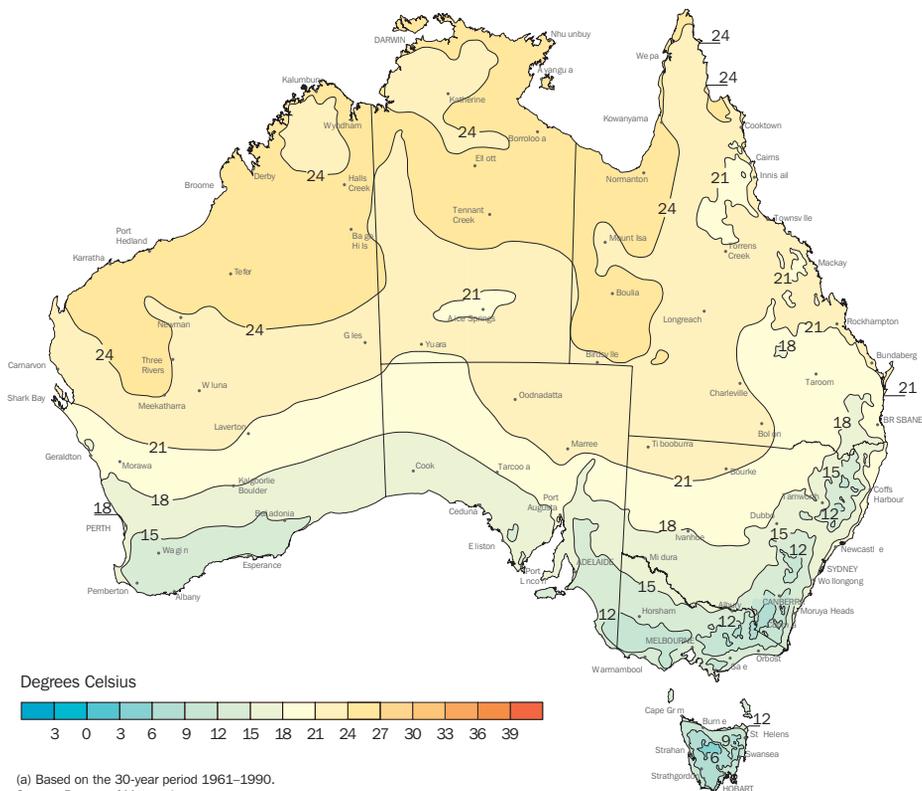
Extreme maxima

The highest extreme maxima in Australia are recorded in two regions, the Pilbara and Gascoyne regions of north-western Western Australia, and a broad belt extending from south-western Queensland across South Australia into south-eastern Western Australia. Many locations in this region have recorded temperatures

exceeding 48°C. Extreme temperatures in this southern belt are higher than those further north, due to the long trajectory over land of hot north-west winds from northern Australia, the lower moisture levels in summer compared with northern Australia, and the generally lower elevation (when compared with areas such as the southern Northern Territory and east-central Western Australia, both of which are largely more than 500 metres above sea level).

Most other locations in mainland Australia, except those near parts of the Queensland and Northern Territory coasts or above 500 metres elevation, have extreme maxima between 43° and 48°C. Most Tasmanian sites away from the north coast have extreme maxima between 35° and 42°C. The lowest extreme maxima are found along the north coast of Tasmania (e.g. 29.5°C at Low Head) and at high elevations (e.g. 27.8°C at Thredbo (Top Station)).

1.11 AVERAGE MINIMUM TEMPERATURE(a)—JANUARY



While extreme high temperatures are more common inland than they are near the coast, the highest temperatures recorded differ little between the two, except in Queensland, the Northern Territory and northern Tasmania. Notable extreme maxima observed near the coast include 50.5°C at Mardie and 49.1°C at Roebourne in Western Australia, 49.4°C at Whyalla and 47.9°C at Ceduna in South Australia, and 47.9°C at Avalon Airport in Victoria.

Extreme maximum temperatures recorded at selected locations, including the highest recorded in each state and territory, are shown in table 1.13.

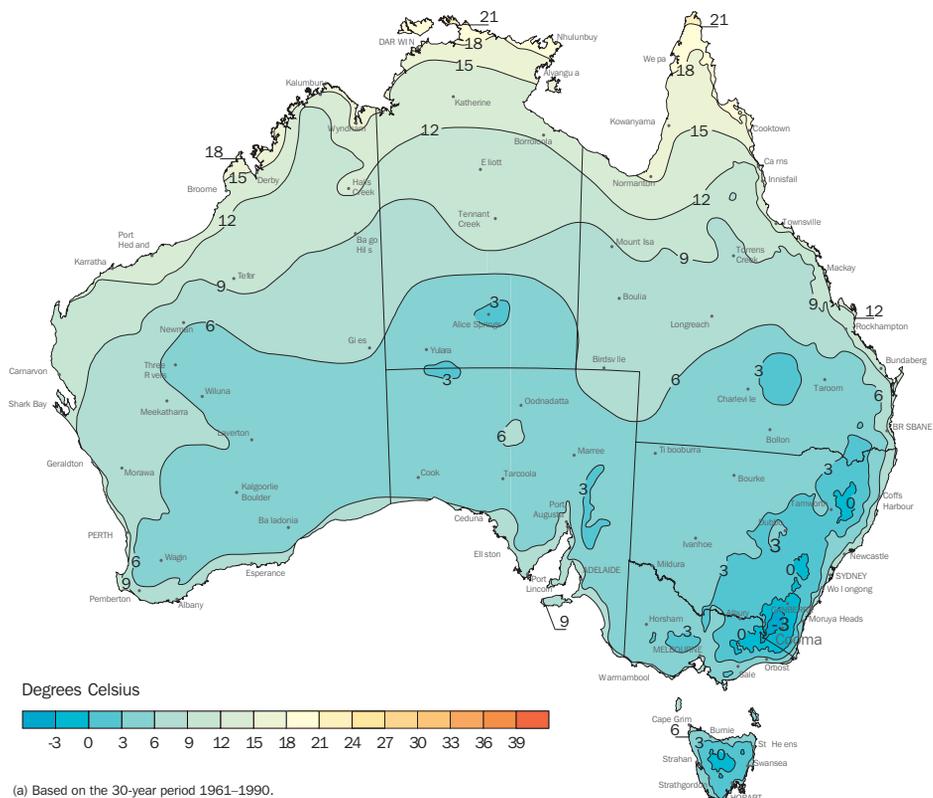
Prolonged heat waves, with a number of successive days over 40°C, are relatively common in summer over much of inland Australia, as well as parts of the north-west coast. Many inland locations have recorded ten or more successive days of such conditions, increasing to 20 or more days in parts of western Queensland and northern South Australia, and 50 or more days

in north-western Western Australia. These heat waves can be accompanied by oppressively warm nights, with Oodnadatta (South Australia) recording an Australian record nine successive nights above 30°C in February 2004.

Such prolonged heatwaves are rare in coastal regions, except in Western Australia. The record number of consecutive days in Melbourne over 40°C, for example, is five, with Brisbane and Sydney each registering two.

The coastal areas, though, can be affected by extreme heat over a period of one or two days. The then most extreme heatwave in the recorded history of south-eastern Australia occurred in January 1939. Adelaide (46.1°C on the 12th), Melbourne (45.6°C on the 13th) and Sydney (45.3°C on the 14th) all set record high temperatures during this period, as did many other centres in New South Wales, Victoria and South Australia. This extreme heat contributed to the 'Black Friday' bushfires, in which almost two

1.12 AVERAGE MINIMUM TEMPERATURE(a)—JULY



million hectares were burnt and 71 lives lost (see the *Bushfires* section in the *Environment chapter in Year Book Australia 2004*). More recently, extreme heat affected south-eastern Australia in late January and early February 2009, with state records broken in Victoria and Tasmania (table 1.13) and a record high of 46.4°C in Melbourne on 7 February. The peak of this heatwave also coincided with the ‘Black Saturday’ bushfires.

Extreme minima

The lowest recorded temperatures in Australia have been in the Snowy Mountains of New South Wales, where Charlotte Pass recorded –23.0°C on 28 June 1994 (table 1.14), with a number of other locations recording temperatures below –15°C. It is likely that comparably low temperatures occur in similarly sheltered locations in the Victorian highlands, but no observing stations away from the exposed peaks exist in this area.

Away from the Snowy Mountains, the lowest extreme minima in Australia are found above 500 metres elevation on the tablelands and ranges of New South Wales, eastern Victoria and southern Queensland, as well as in central Tasmania. Many locations in this region have recorded –10°C or lower, including Gudgenby, Australian Capital Territory (–14.6°C) and Woolbrook, New South Wales (–14.5°C). At lower elevations, most inland places south of the tropics have extreme minima between –3°C and –7°C, and such low temperatures have also occurred in favoured locations within a few kilometres of southern and eastern coasts, such as Sale, Victoria (–5.6°C), Bega, New South Wales (–8.1°C), Grove, Tasmania (–7.5°C), Eyre, Western Australia (–7.2°C) and Taree, New South Wales (–5.0°C).

In the tropics, extreme minima near or below 0°C have occurred at many places away from the coast, as far north as Herberton, Queensland (–5.0°C). Some locations near tropical coasts, such as Mackay (–0.8°C), Townsville (0.1°C) and

Kalumburu, Western Australia (0.3°C) have also recorded temperatures near 0°C. In contrast, some exposed near-coastal locations, such as Darwin, have never fallen below 10°C, and Thursday Island, in the Torres Strait, has an extreme minimum of 16.1°C.

1.13 EXTREME MAXIMUM TEMPERATURES

Station	°C	Date
New South Wales		
Wilcannia	50.0	11.1.1939
Victoria		
Swan Hill(a)	49.4	18.1.1908
Hopetoun	48.8	7.2.2009
Queensland		
Cloncurry(a)	53.1	16.1.1889
Birdsville	49.5	24.12.1972
South Australia		
Oodnadatta	50.7	2.1.1960
Western Australia		
Mardie	50.5	20.2.1998
Tasmania		
Scamander	42.2	30.1.2009
St. Helens	41.8	30.1.2009
Northern Territory		
Finke	48.3	1 & 2.1.1960
Australian Capital Territory		
Canberra (Acton)	42.8	11.1.1939

(a) Temperatures known not to have been measured in a Stevenson screen (see *Temperature measurement and the Stevenson screen*, in *Year Book Australia 2005*).

Source: Bureau of Meteorology.

1.14 EXTREME MINIMUM TEMPERATURES

Station	°C	Date
New South Wales		
Charlotte Pass	-23.0	28.6.1994
Victoria		
Mount Hotham	-12.8	30.7.1931
Queensland		
Stanthorpe	-11.0	4.7.1895
South Australia		
Yongala	-8.2	20.7.1976
Western Australia		
Eyre	-7.2	17.8.2008
Tasmania		
Shannon	-13.0	30.6.1983
Butlers Gorge	-13.0	30.6.1983
Tarraleah	-13.0	30.6.1983
Northern Territory		
Alice Springs	-7.5	12.7.1976
Australian Capital Territory		
Gudgenby	-14.6	11.7.1971

Source: Bureau of Meteorology.

The parts of Australia with the lowest extreme minimum temperatures are also the most subject to frost. The eastern uplands from southern Queensland to eastern Victoria experience ten or more frosts per month in each month from May to September, as do Tasmania's Central Plateau and a few susceptible locations in south-western Western Australia and the Flinders Ranges region of South Australia. At lower elevations, frost is less frequent and the season is shorter, although only the immediate coastal margins and the far north can be considered totally frost-free.

Frosts can occur at any time of year over most of Tasmania, much of inland Victoria and south-eastern South Australia, and the higher parts of the tablelands of New South Wales and the Australian Capital Territory. In these regions the median frost period generally exceeds 200 days, extending out to 300 days in central Tasmania.

Other aspects of climate

Humidity

In terms of the average water vapour content or humidity of the air, Australia is a dry continent. The amount of moisture in the atmosphere can be expressed in several ways, the most common being relative humidity. This measure can be thought of as the relative evaporating power of the air. When humidity is low, moisture on an exposed wet surface, like our skin, can evaporate freely. When it is high, evaporation is retarded. If the temperature is also high, people will feel discomfort or even stress as the body's ability to cool through the evaporation of perspiration is diminished. The combination of high temperature and high humidity is potentially dangerous for people who are not adapted or acclimatised to such conditions.

The main features of the relative humidity pattern are:

- Over the interior of the continent, there is a marked dryness during most of the year, which extends towards the northern coast in the dry season (May–October).
- The coastal fringes are comparatively moist, although this is less so along the north-west coast of Western Australia where airflow is predominantly off the continent.

- In northern Australia, the highest values of humidity occur during the summer wet season (December–February) and the lowest during the winter dry season (June–August).
- In most of southern Australia, the highest values are experienced in the winter rainy season (June–August) and the lowest in summer (December–February).

By way of a historical note, it is interesting that, as late as 1927, Griffith Taylor, from the Department of Physical Geography, University of Sydney, was asserting that tropical Australia was an unhealthy place to live, at least for women, because of its climate. However, in recent decades the introduction of air conditioning, more appropriate building design, and improved health measures such as proper sanitation, have greatly increased the comfort levels of those living in the tropics.

Global radiation

Incoming global radiation includes radiant energy reaching the ground directly from the sun and radiation received indirectly from the sky that is reflected and scattered downwards by clouds, dust and other airborne particles.

While there is a high correlation between daily global radiation and daily hours of sunshine, the latter is more dependent on variations in cloud coverage. Daily global radiation is at its strongest, all other things being equal, when the sun is closest to overhead south of the tropics (21–22 December), or directly overhead in the tropics. On the north-west coast around Port Hedland, Western Australia, where average daily global radiation is the highest for Australia (22–24 megajoules per square metre), average daily sunshine is also highest, being approximately ten hours. By way of contrast, in Darwin, the global radiation values for the dry month of July and cloudy month of January are comparable, yet the number of sunshine hours for July is nearly twice that for January.

Sunshine

Sunshine here refers to bright or direct sunshine. Australia receives relatively large amounts of sunshine, although seasonal cloud formations affect spatial and temporal distribution. Cloud cover reduces both incoming solar radiation and outgoing radiation from the earth's surface, and thus affects sunshine, air temperature and other measures of climate.

Most of the continent receives more than 3,000 hours of sunshine a year, or nearly 70% of the total possible. In central Australia and the mid-west coast of Western Australia, totals slightly in excess of 3,500 hours occur. Totals of less than 1,750 hours occur on the west coast and highlands of Tasmania, which is the equivalent of only 40% of the total possible per year.

In southern Australia, the duration of sunshine is greatest about December when the sun is at its highest elevation, and lowest in June when the sun is lowest. In northern Australia, sunshine is generally greatest over the period August to October prior to the wet season, and least over the period January to March during the wet season.

Evaporation

Average annual pan evaporation exceeds rainfall over most of Australia. It is highest in the northern interior of Western Australia, reaching over 4,000 mm near Telfer, and exceeds 3,000 mm over most of tropical Western Australia, northern South Australia, the central Northern Territory and western Queensland. It is lower in tropical areas with higher rainfall and cloud cover, such as the Top End of the Northern Territory, and eastern Queensland.

At the other end of the scale, Australia's lowest pan evaporation occurs in Tasmania, ranging from well under 1,000 mm per year in the west to close to 1,200 mm in the east. Over the mainland it is below 1,200 mm in the far south-west of Western Australia and in most of southern Victoria from Melbourne eastwards, and less than 1,400 mm over southern Victoria and adjacent parts of South Australia and New South Wales.

Over most of Australia evaporation is greatest in summer and least in winter, due to higher temperatures and solar radiation. In the far north, in contrast, the seasonal cycle is dominated by the effect of increased cloud cover during the tropical wet season. In this region, evaporation peaks in spring, with a secondary peak in autumn in some places, and is lowest in late summer.

Cloud

Seasonal distribution of cloudiness varies predominantly in line with seasonal variations in rainfall. In the southern parts of the continent, particularly in the coastal and low-lying areas, the winter months are generally cloudier than the

summer months. This is due to the formation of extensive areas of stratiform cloud and fog during the colder months, when the structure of the lower layers of the atmosphere and higher levels of humidity favour the formation of this type of cloud. Particularly strong seasonal variability of cloud cover exists in northern Australia, where skies are cloudy during the summer wet season and mainly cloudless during the winter dry season. Cloud cover is greater near coasts and on the windward slopes of the eastern uplands of Australia and less over the dry interior.

Fog

The formation of radiation fogs, in which air near the ground is cooled by overnight radiation from the ground, is determined by the occurrence of a favourable blend of temperature, humidity, wind and overlying cloud cover. The nature of the local terrain can also be important for the development of fog, and there is a tendency for it to be particularly prevalent and persistent in valleys and hollows. The incidence of such fogs can vary significantly over short distances. Other types of fogs occur when low cloud covers high ground ('hill fog'), particularly where highlands are close to the coast, and more rarely, near some coastlines when warm moist air moves over relatively cool waters near the shore ('sea fog').

Fog in Australia tends to be more common in the south than the north, although parts of the east coastal areas are relatively fog-prone even in the tropics. Fog is more likely to occur in the colder months, particularly in the eastern uplands. Radiation fogs normally develop overnight and dissipate during the morning or early afternoon, although on rare occasions they persist through the day, particularly in inland Tasmania. The highest fog incidence at a capital city is at Canberra, which has an average of 47 days per year on which fog occurs, 29 of which are between May and August. Brisbane averages 20 days of fog per year. Darwin averages only two days per year, mostly in July and August.

Winds

The mid-latitude anticyclone belt is the chief determinant of Australia's two main prevailing wind streams. These streams tend to be easterly to the north of this belt and westerly to the south. The cycles of development, motion and decay of low-pressure systems that form to the north and south of the anticyclone belt and also

intersperse between individual anticyclones result in a great diversity of wind flow patterns. Wind variations are greatest around the coasts where diurnal land and sea-breeze effects also come into play. Sea breezes play a prominent role in modifying coastal climates in many parts of Australia, particularly along the west coast of Western Australia where they are a major feature of the summer climate. In Perth, the sea breeze is known as the 'Fremantle Doctor'.

Orography affects the prevailing wind pattern in various ways, such as the channelling of winds through valleys, deflection by mountains and cold air drainage from highland areas. The high frequency of north-west winds at Hobart, for example, is caused by the north-west to south-east orientation of the Derwent River valley, while wave effects on the lee side of the Adelaide Hills can lead to very strong local winds ('gully winds') in the eastern suburbs of Adelaide during periods of general easterly flow.

Perth is the windiest capital, with an average wind speed of 15.6 km/h; Canberra is the least windy with an average wind speed of 5.4 km/h.

The highest wind speeds and wind gusts measured in Australia have been associated with tropical cyclones. The highest recorded gust was 267 km/h at Learmonth (Western Australia) on 22 March 1999 (with Tropical Cyclone Vance), while gusts reaching 200 km/h have been recorded on several occasions in northern Australia with cyclone visitations. The highest gusts recorded at Australian capitals have been 217 km/h at Darwin (during Tropical Cyclone Tracy), 185 km/h at Brisbane Airport and 156 km/h at Perth.

Dust storms

Dust storms are a regular occurrence on windy days in many of the arid zones of Australia. During drought years, they can extend to the more densely settled areas of the south-east, particularly when strong north to north-westerly winds occur in advance of an approaching cold front. Well-known examples include those of February 1983, which plunged central Melbourne into darkness, and September 2009, which covered a vast area of eastern Queensland and New South Wales, including Brisbane and Sydney. The first of these occurred in the later part of the severe El Niño related drought of 1982–83, while the second has accompanied the prolonged dry conditions of the post-2001 period.

Fire weather

While bushfires are not strictly a climatic phenomenon, both weather and climate are strong determinants of their occurrence and intensity. Provided vegetation is sufficiently abundant and dry, the spread of bushfires is most rapid in windy conditions with low humidity. In southern Australia, such conditions are also normally associated with high temperatures. A Fire Danger Index, which combines expected wind speed, humidity, temperature and a measure of vegetation dryness, is frequently used to assess the risk of rapid fire spread on any given day.

The most favoured season for bushfires varies in different parts of Australia. In south-eastern Australia (including Tasmania) the most favoured season is summer and early autumn; in coastal New South Wales and southern Queensland it is spring and early summer; and in much of northern Australia it is winter and spring (or the later part of the 'dry' season). In the arid zones of Australia, large fires most commonly occur in the months following an abnormally wet season, when there is enough vegetation to provide fuel. Extremely widespread fires occurred in central Australia in winter and spring of both 1974 and 2011, following two of the wettest 'wet seasons' on record for the region. In 1974 about 15% of Australia's total land area was burnt.

The southeast Australian bushfires, which occurred at the end of 2002 and the beginning of 2003, were among the most protracted and extensive of the last century. The 2002–03 bushfire season and its impact were discussed in the *Environment chapter* in *Year Book Australia 2004*. There were also protracted and extensive fires, particularly in Victoria, in 2006–07, while more recently the 'Black Saturday' fires caused major loss of life and destruction of property in Victoria in February 2009. Destructive fires also occurred east of Perth in late 2009 and early 2011.

International comparisons

Australia has the sixth highest land area of all countries in the world at nearly 8 million square kilometres. It is exceeded only by Brazil, China, the United States of America, Canada and Russia.

Tables 1.15 and 1.16 show the area of Australia relative to that of other continents and countries.

Table 1.17 shows global and continental temperature anomalies from 1910 to 2010. Globally, and for all continents, the temperature deviation increases in each decade from the 1980s to the 2000s (compared with the average temperature between 1961 and 1990). For individual years, from 1990 to 2010, all global temperature deviations, and almost all continental deviations, are positive.

1.15 AREA OF CONTINENTS

	'000 sq km
Continents	
Asia	44 900
Africa	30 300
North America	24 700
South America	17 800
Antarctica	14 000
Europe	9 900
Australia and Oceania	8 500
Total landmass	150 100

Source: *Encyclopedia Britannica, Inc.*

1.16 AREA OF SELECTED COUNTRIES

	'000 sq km
COUNTRIES (SEVEN LARGEST)	
Russia	17 075
Canada	9 971
United States of America	9 809
China	9 556
Brazil	8 512
Australia	7 692
India	3 204
SELECTED OTHER COUNTRIES	
Indonesia	1 904
France	547
Papua New Guinea	462
Japan	377
Germany	357
Malaysia	330
Philippines	299
New Zealand	268
United Kingdom	242
Timor-Leste	14

Source: *Encyclopedia Britannica, Inc.*

1.17 GLOBAL AND CONTINENTAL TEMPERATURE ANOMALIES, Temperature deviation(a)

Period	Global °C	Europe °C	Asia °C	Africa °C	North America °C	South America °C
10-YEAR PERIODS						
1910–19	-0.39	-0.37	-0.52	-0.36	-0.47	-0.43
1920–29	-0.28	-0.25	-0.28	-0.29	-0.23	-0.45
1930–39	-0.13	0.24	-0.26	-0.14	0.12	-0.18
1940–49	-0.06	-0.26	-0.12	0.03	0.17	-0.03
1950–59	-0.13	-0.14	-0.32	-0.13	0.03	-0.22
1960–69	-0.09	-0.12	-0.18	-0.13	-0.14	0.05
1970–79	-0.07	0.01	-0.11	-0.10	-0.19	-0.14
1980–89	0.10	0.03	0.16	0.16	0.23	0.03
1990–99	0.25	0.44	0.52	0.36	0.42	0.19
2000–09	0.43	1.02	0.93	0.75	0.58	0.36
YEARS						
1990	0.27	1.02	0.64	0.42	0.26	0.07
1991	0.24	0.41	0.39	0.19	0.45	0.13
1992	0.08	0.46	0.01	0.01	0.13	-0.11
1993	0.10	-0.09	0.11	0.25	0.17	0.07
1994	0.18	0.47	0.42	0.14	0.43	0.31
1995	0.30	0.91	0.94	0.43	0.49	0.28
1996	0.18	-0.17	0.17	0.37	-0.30	0.03
1997	0.36	0.28	0.71	0.50	0.33	0.46
1998	0.51	0.24	0.90	0.78	1.36	0.62
1999	0.28	0.90	0.87	0.48	0.88	0.06
2000	0.27	1.28	0.58	0.38	0.52	-0.01
2001	0.41	0.79	0.86	0.66	0.79	0.37
2002	0.48	0.96	1.14	0.73	0.46	0.47
2003	0.48	0.80	0.85	0.80	0.59	0.44
2004	0.43	0.87	0.98	0.72	0.40	0.44
2005	0.52	0.95	0.91	0.94	0.91	0.49
2006	0.46	0.90	0.82	0.73	1.09	0.48
2007	0.46	1.42	1.39	0.85	0.61	0.17
2008	0.36	1.33	1.06	0.71	0.16	0.24
2009	0.47	0.94	0.73	0.99	0.23	0.46
2010	0.53	0.68	0.92	1.29	0.83	0.49

(a) Temperatures are shown as anomalies (or deviations) from 1961–90 base period.

Source: Bureau of Meteorology.

La Niña and the floods of 2010–11

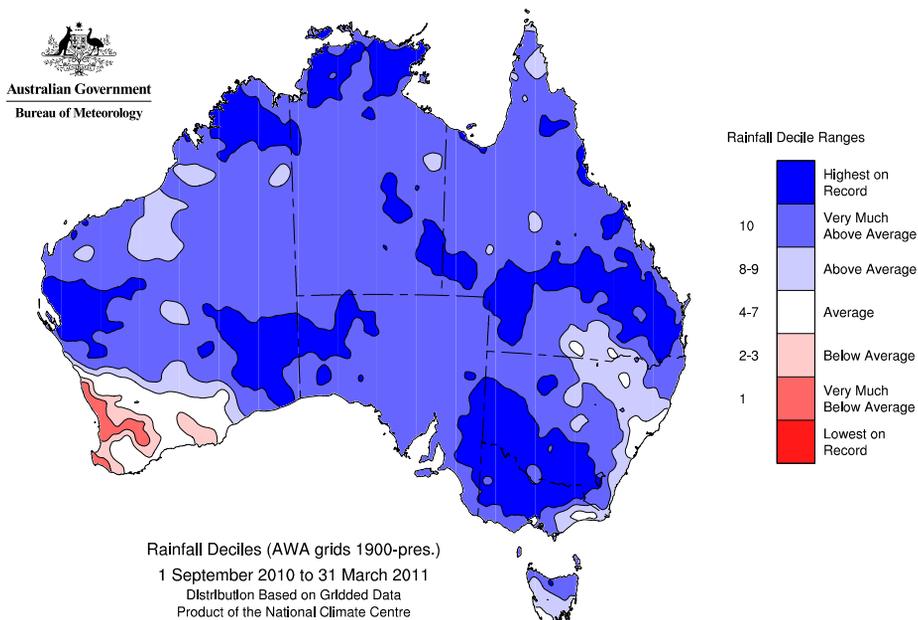
One of the strongest La Niña events on record occurred in the second half of 2010 and the early months of 2011. Sea surface temperatures in the central and eastern tropical Pacific were more than 2°C below normal in places, and the Southern Oscillation Index (SOI), an indicator of air pressure differences between Darwin and Tahiti, was above +20 for several months; only 1917 has previously seen such high values sustained over such a period of time.

If conditions in the Pacific Ocean were not favourable enough for Australian rainfall, elsewhere the environment was taking perhaps the most favourable alignment possible for heavy rain in Australia. The waters of the Indian Ocean south of Indonesia were warmer than normal, as were those off the north coast of the Australian continent, providing an ample source of moisture for rain-bearing systems.

Unusual heavy rains occurred in northern Australia during the cooler months of 2010 – normally the dry season in the tropics – but it was in September that widespread heavy rain

really began. September 2010 was Australia's wettest September on record, starting a sequence of seven months that were all much wetter than average. March 2011 was also the wettest March on record, December 2010 and February 2011 both ranked second, and January 2011 was the only one of the seven months to miss the top ten wettest months. It was also the wettest spring on record for Australia (and for Queensland, New South Wales and the Northern Territory), and the second wettest summer (with Victoria having its wettest). The seven-month period from September 2010 to March 2011 saw almost exactly double the normal rainfall for Australia, and fell just short of November 1973–May 1974 as the country's wettest seven-month period on record (map S1.1). Every mainland state and territory ranked either first or second for this period, with most also experiencing about double their usual rainfall, except in South Australia where it was closer to three times normal. The only parts of the country that had below-normal rainfall for the period were the

S1.1 AUSTRALIAN RAINFALL DECILES—1 September 2010 to 31 March 2011



Source: Bureau of Meteorology.

south-west of Western Australia (where a severe drought was in progress) and parts of coastal New South Wales between Sydney and Port Macquarie.

The heavy rains brought with them widespread and extensive flooding throughout northern, central and eastern Australia. These began with floods in northern Victoria and southern New South Wales in September and October, but it was from late November onwards that the most significant floods occurred. Probably the worst-hit areas were the Fitzroy and Brisbane River catchments in eastern Queensland, and the Loddon and Wimmera catchments in northern Victoria. However, almost every significant river system in inland Victoria, New South Wales and southern Queensland, as well as numerous coastal rivers in those states (and in Tasmania), saw substantial flooding at some stage between late November 2010 and early February 2011. Brisbane itself experienced its worst floods since 1974.

In February and March 2011, the focus of most flooding shifted to the tropics and central Australia, with parts of the Kimberley being especially hard hit. March also saw a number of exceptional localised flash floods. There were extensive floods in central Australia, particularly in the far west of Queensland, although Lake Eyre did not quite reach its levels of the previous year as one of its main feeders, the Cooper Creek, missed out on the most extreme flooding. Conditions over most of the continent returned to near normal from April 2011 onwards.

The heavy rains of 2010–11 largely ended the long-term drought that had affected large parts of eastern Australia for most of the preceding decade. Many water storages that had been far below capacity for several years, especially in the southern half of the Murray-Darling Basin, were full or overflowing by mid 2011. Murray-Darling basin storages rose from around 25% of capacity in February 2010 to near 80% by year's end, and further to 86% by spring 2011.

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2

ENVIRONMENT

Society and economy have a complex relationship with the environment. The environment contributes to the production of goods and services that support people's lifestyles. Australia's growing economy, and its increasing use of energy and other resources, has brought prosperity and wellbeing to many Australians. However, the environment also sustains damage through these activities.

This chapter presents a range of statistics that may be used to build up a picture of the state of Australia's environment. It draws on output from Australian Bureau of Statistics (ABS) household and business surveys as well as data from a number of other agencies, including the Australian Government Bureau of Meteorology, the Australian Bureau of Agricultural and Resource Economics and Sciences, the Environment Protection and Heritage Council, the National Pollution Inventory, and the Australian Government Departments of: Agriculture, Fisheries and Forestry; Sustainability, Environment, Water, Population and Communities; and Climate Change.

This chapter contains two special articles, *Building a land account for Australia* and *Land management practices in the Great Barrier Reef catchment area*.

Related information can be found in chapters 1 *Geography and climate*, 16 *Agriculture*, 17 *Forestry and fishing*, 19 *Energy*, 22 *Service industries* and 24 *Transport*.

Household water use and conservation

Water supply and use needs to be understood in the context of Australia's climate, which is characterised by highly variable rainfall between regions, seasons and years. Since 2002, many parts of Australia have been subject to mandatory water restrictions in response to drought. The growth of urban populations also increases pressure on existing water supplies.

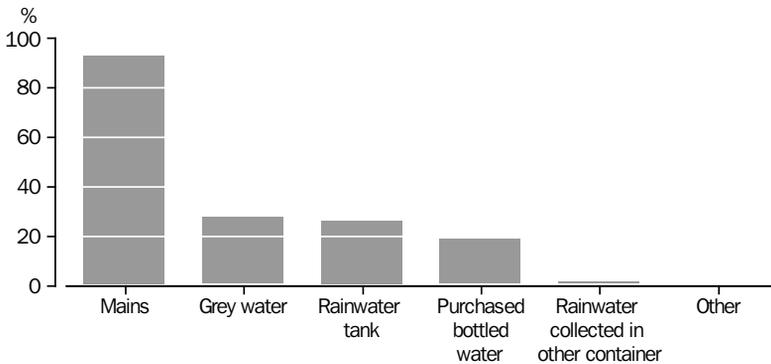
Mains (town) water was the most common source of water for Australian households in 2010, with 93% of households being connected to this source (graph 2.1). Despite the majority of Australians having mains/town water supply, many households also rely on other sources to supplement their water supply. Grey water was

the second most common source of water for households (28% of households) followed by rainwater tanks (26%).

In March 2010, 32% of households with dwellings suitable for a rainwater tank had a rainwater tank installed compared with 24% in 2007 (graph 2.2). South Australia continues to have the highest proportion of households with rainwater tanks followed by Queensland (57% and 42% respectively of households in 2010). The largest increases between 2007 and 2010 occurred in the Australian Capital Territory (more than doubling from 8% to 18%), Victoria (from 21% to 36%) and Queensland (from 26% to 42%).

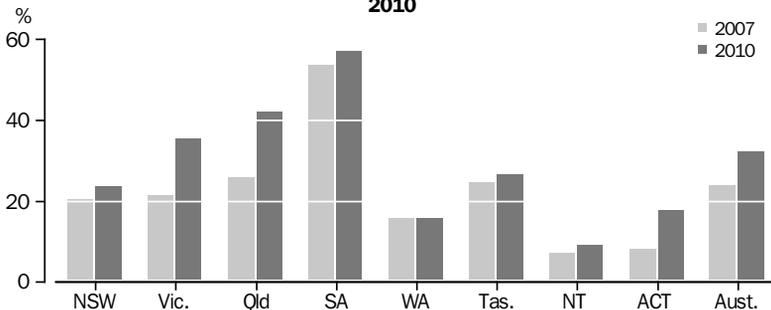
Areas outside capital cities continued to have a higher proportion of dwellings with rainwater tanks (43% compared with 26% in capital cities in 2010) (graph 2.3). Nearly nine out of ten (89%)

2.1 SOURCES OF WATER FOR HOUSEHOLDS—2010



Source: *Environmental Issues: Water use and Conservation* (4602.0.55.003).

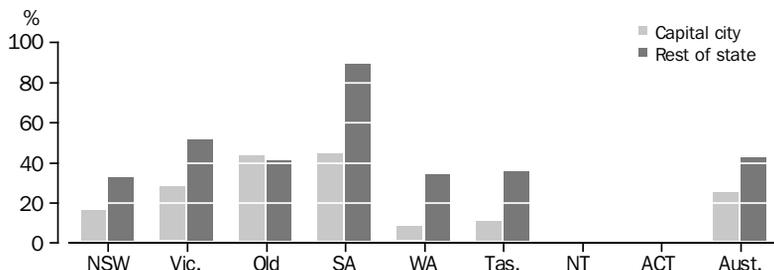
2.2 HOUSEHOLDS WITH RAINWATER TANK INSTALLED AT DWELLING(a)—2007 and 2010



(a) Includes only households with dwellings suitable for a rainwater tank, including separate house, semi-detached house, terrace house, townhouse.

Source: *Environmental Issues: Water Use and Conservation* (4602.0.55.003).

2.3 RAINWATER TANK INSTALLED AT DWELLING(a)(b)—2010

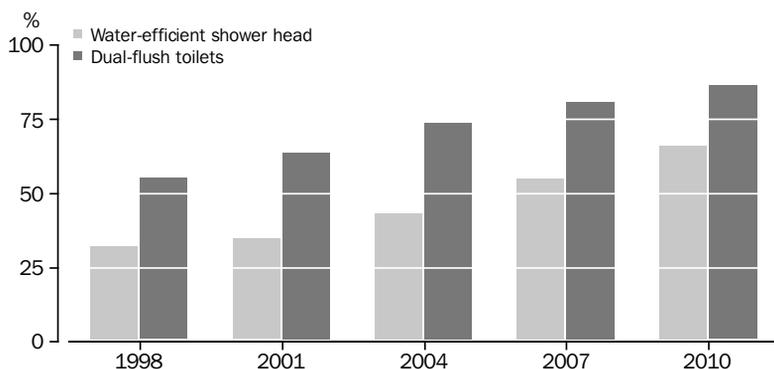


(a) Includes only households with dwellings suitable for a rainwater tank, including separate house, semi-detached house, terrace house, townhouse.

(b) No regional split between capital city and balance of state/territory for the NT and ACT as sample does not support any breakdown beyond the whole territory.

Source: *Environmental Issues: Water Use and Conservation* (4602.0.55.003).

2.4 HOUSEHOLDS WITH WATER SAVING PRODUCTS—1998–2010



Source: *Environmental Issues: Water Use and Conservation* (4602.0.55.003).

households outside the capital city in South Australia had a rainwater tank installed. Adelaide (45% of households) and Brisbane (43%) were the capital cities with the highest proportion of households with rainwater tanks.

Since the introduction of water restrictions, increasing numbers of households have installed water conserving devices, including dual-flush toilets and reduced-flow shower heads. In 2010, 86% of households had at least one dual-flush toilet, up from 55% in 1998. At least one water-efficient shower head was installed in the dwellings of two-thirds of Australian households (66%), up from 32% in 1998 (graph 2.4).

The most common step taken to save water in the garden was using mulch, which has increased from 22% in 2007 to 27% in 2010. This was followed by only watering when necessary, which

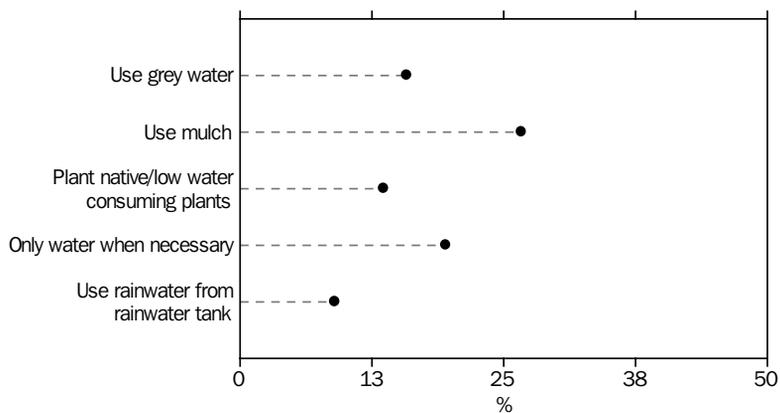
has remained steady at 20%, and the use of grey water at 16% (graph 2.5).

Household energy use and conservation

Consumption of energy by households accounted for 12% of total energy consumption in Australia during 2008–09. Space heating and water heating dominated household energy use, contributing around 61% of residential energy consumption (ABARE–BRS, 2010).

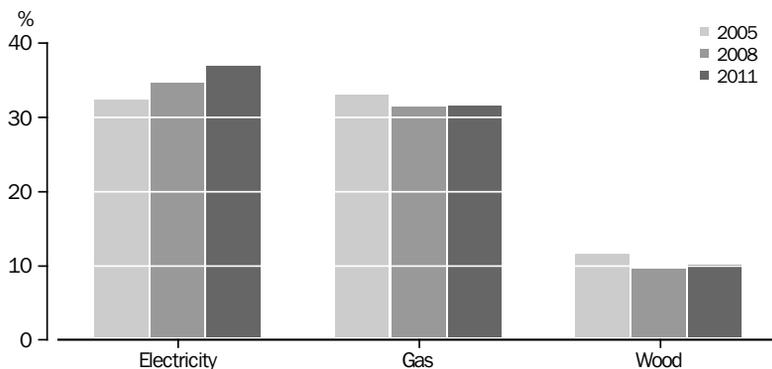
In 2011, 37% of households used electricity as their main source of energy for space heating, followed by gas (32% of households) and wood (10%) (graph 2.6). While wood and gas decreased slightly as the main source of energy between 2005 and 2011, use of electricity increased (from 32% to 37%).

2.5 STEPS TAKEN TO SAVE WATER IN THE GARDEN—2010



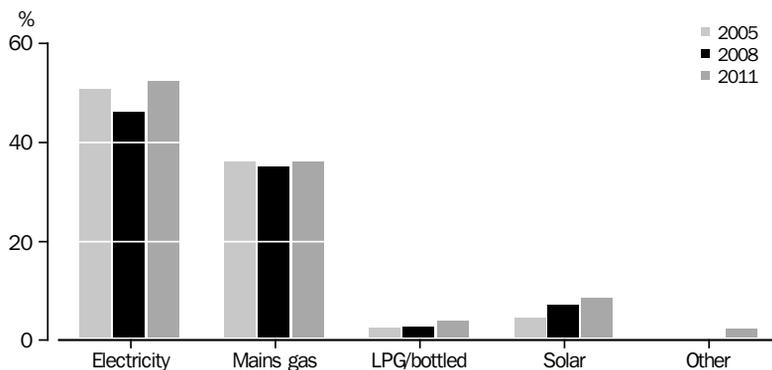
Source: *Environmental Issues: Water Use and Conservation (4602.0.55.003)*.

2.6 SOURCES OF ENERGY FOR SPACE HEATING—2005, 2008 and 2011



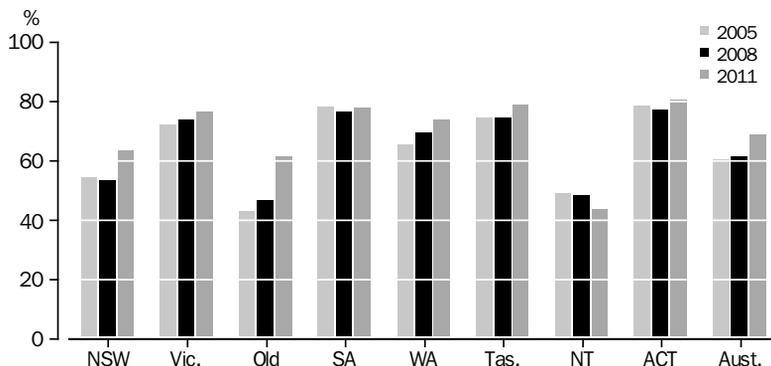
Source: *Environmental Issues: Energy Use and Conservation (4602.0.55.001)*.

2.7 SOURCES OF ENERGY FOR HEATING WATER—2005, 2008 and 2011



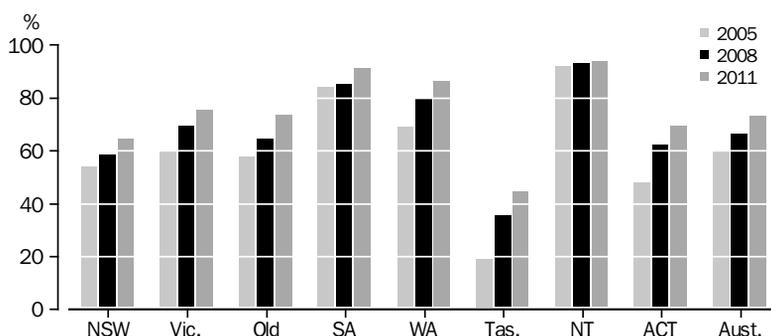
Source: *Environmental Issues: Energy Use and Conservation (4602.0.55.001)*.

2.8 HOUSEHOLDS WITH INSULATION—2005, 2008 and 2011



Source: *Environmental Issues: Energy Use and Conservation (4602.0.55.001)*.

2.9 HOUSEHOLDS WITH COOLERS(a)—2005, 2008 and 2011



(a) Refers to both refrigerated air conditioners and non-refrigerated evaporative coolers.

Source: *Environmental Issues: Energy Use and Conservation (4602.0.55.001)*.

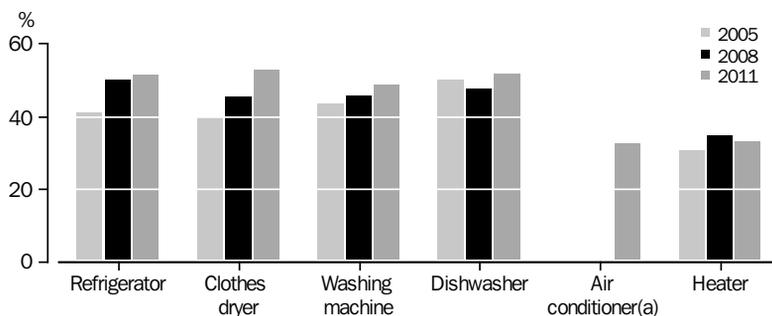
Electricity was the most common source of energy for heating water (graph 2.7). This increased from 46% of households in 2008 to 52% in 2011. Mains gas remained fairly steady at 36% (compared to 35% in 2008) and was the next most common. The use of solar energy for heating water, while still small, has increased steadily since 2005, from 4% of households to 9% of households in 2011.

The proportion of Australian households with insulation increased from 61% in 2005 to 69% in 2011 (graph 2.8). In the Australian Capital Territory, 81% of households had insulation in 2011 compared with 44% of households in the Northern Territory. The largest increases were in Queensland (from 47% of households in 2008 to 62% in 2011) and New South Wales (from 53% in 2008 to 63% in 2011).

Coolers are contributing more to household energy use and costs (ABARE–BRS, 2010). Use of coolers in Australian dwellings has increased steadily since 2005 (graph 2.9). In 2011, 73% of dwellings in Australia had coolers, up from 66% in 2008 and 59% in 2005. Both Tasmania and the ACT have shown relatively large increases in the use of coolers over this period (19% in 2005 to 44% in 2011 for Tasmania, and 48% to 70% for the ACT).

Increasing energy prices provide households with an incentive to conserve energy, which often takes the form of purchasing more energy efficient appliances. In Australia, mandatory energy efficiency labelling has been implemented for a variety of electrical appliances including washing machines, dishwashers, refrigerators and air conditioners. Energy star rating was a factor

2.10 CONSIDERED ENERGY STAR RATING AS A FACTOR WHEN REPLACING SELECTED APPLIANCES—2005, 2008 and 2011



(a) Portable air conditioner. No historical data for 2005 and 2008.

Source: *Environmental Issues: Energy Use and Conservation (4602.0.55.001)*.

considered by over half of households purchasing refrigerators, dishwashers and clothes dryers in the year ending March 2011. In contrast, only one-third of households purchasing a heater or an air conditioner considered energy star ratings (graph 2.10).

Environmental management by industry

There are many different ways in which Australian businesses manage their environmental impact. These actions and activities were measured in the ABS 2008–09 Energy, Water and Environment Survey. The practices surveyed included: development of an environmental policy/plan or system, water management activities, recycling or re-use and undertaking energy efficiency or energy reduction measures.

During 2008–09, many Australian businesses implemented environmental management activities (graph 2.11). The most common were energy efficiency or energy reduction measures (implemented by 55% of businesses), recycling or re-use of materials (23%) and water management activities (22%).

The size of a business was a significant factor influencing the participation in environmental management activities (graph 2.12). Large businesses were more likely to undertake all forms of environmental management activities, with 88% undertaking energy efficiency or energy reduction measures, 63% recycling or re-using

materials, 60% engaging in water management activities and 47% conducting energy usage audits. Overall, 45% of large businesses had some form of environmental policy/plan or system compared to just 3% of small businesses.

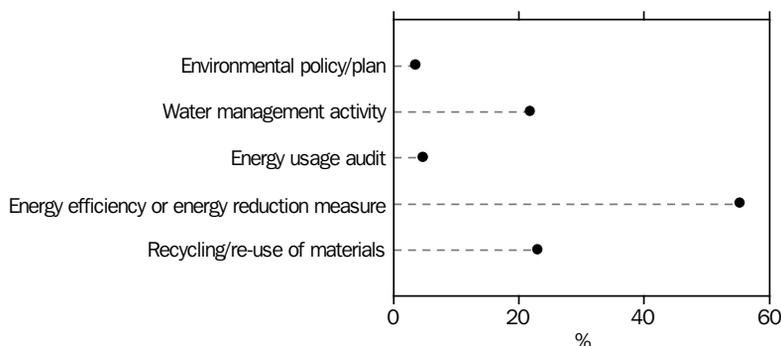
Waste management

Australia's growing economy and its increasing use of energy and other resources have brought prosperity and wellbeing to many Australians. However, a growing economy and a growing population also mean more waste generation. Australia has one of the highest rates of waste generation per capita in the world. Wastes may be solid, liquid or gaseous. They can be hazardous, or non-hazardous. They may be classified according to their source (municipal, commercial and industrial, construction and demolition) or by composition (organic, paper, glass, metal and plastic).

This section presents information on waste management activities and waste quantities received, processed and transferred from waste facilities.

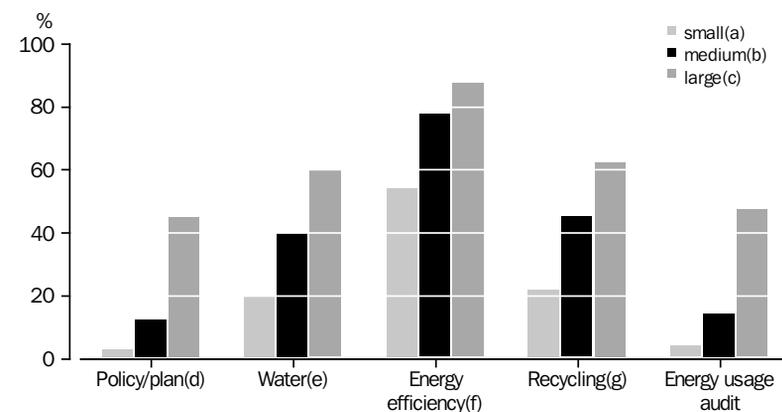
Table 2.13 presents estimates of the financial performance of businesses in waste management services in Australia in 2009–10. Data refer to businesses in scope for Waste collection, treatment and disposal services and do not include waste activities undertaken by businesses whose primary activity is outside this scope (e.g. those in the Manufacturing and Mining industries).

**2.11 SELECTED ENVIRONMENTAL MANAGEMENT ACTIVITIES,
Businesses—2008-09**



Source: *Energy, Water and Environment Management (4660.0)*.

**2.12 SELECTED ENVIRONMENTAL MANAGEMENT ACTIVITIES,
By business size—2008-09**



- (a) Refers to small businesses 0–19 employees.
- (b) Refers to medium businesses 20–199 employees.
- (c) Refers to large businesses 200 or more employees.
- (d) Environmental policy/plan or system.
- (e) Water management activity.
- (f) Energy efficiency or energy reduction measure.
- (g) Recycling or re-use of materials.

Source: *Energy, Water and Environment Management (4660.0)*.

At the end of June 2010, there were 2,719 businesses/organisations involved in the provision of waste management services. They comprised 2,172 businesses in the private and public trading sector classified to the Waste collection, treatment and disposal services industry and 547 General government sector organisations.

In 2009–10, waste management businesses in the private and public trading sector had a total income of \$8.6 billion. The main source of

income was from the provision of waste services (\$5.1b), consisting of \$4.3 billion for non-recyclable waste and \$0.8 billion for recyclables. Sales of recyclable material contributed another \$2.2 billion or 26% of total income.

In the private and public trading sector, 709 waste management services businesses had activity located in New South Wales in June 2010, representing 33% of the total waste management services businesses in Australia, while 592 (28%)

2.13 SUMMARY OF OPERATIONS(a), Private and public trading sector—2009–10

		New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania/ NT/ACT	Australia
Businesses at end June	no.	709	592	409	182	208	72	2 172
Employment at end June	no.	8 730	6 945	5 114	1 917	3 269	836	26 812
Income								
Income from waste services (includes recyclables)	\$m	1 953.4	1 206.4	922.2	362.3	594.3	110.5	5 149.1
Income from sales of recyclable or recoverable material	\$m	693.2	699.3	401.8	212.2	202.0	22.9	2 231.4
Other sources of income and income from energy generated from waste	\$m	526.4	312.6	171.9	51.2	134.0	19.3	1 215.5
Total income	\$m	3 173.0	2 218.3	1 495.9	625.7	930.3	152.7	8 596.0
Expenses								
Wages and salaries	\$m	527.9	386.3	314.6	100.8	197.0	40.3	1 566.9
Contract and subcontract expenses for waste management services	\$m	190.4	175.2	88.1	46.7	46.2	11.0	557.7
Fees for the treatment/processing and/or disposal of waste	\$m	245.8	141.8	134.8	34.5	71.9	6.7	635.4
Other expenses	\$m	2 010.1	1 362.0	850.9	400.5	519.1	86.2	5 228.7
Total expenses	\$m	2 974.2	2 065.3	1 388.4	582.4	834.1	144.2	7 988.7

(a) Waste collection, treatment and disposal services industry, Subdivision 29, Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition.

Source: *Waste Management Services, Australia, 2009–10* (8698.0).

2.14 WASTE STREAMS OF MATERIAL RECEIVED AT LANDFILLS(a), By source—2009–10

	Organic(b) '000 t	Non-organic '000 t	Unseparated organic and non-organic '000 t	No source type provided '000 t	Total '000 t
Domestic and municipal waste	891.2	1 163.5	4 511.3	840.2	7 406.2
Commercial and industrial waste	478.1	^1 247.4	4 434.6	503.8	6 663.9
Construction and demolition waste	^132.2	3 994.6	1 212.4	^237.9	5 577.2
Other waste	*200.8	128.3	416.5	*76.8	822.4
No waste stream provided	na	na	na	1 156.3	1 156.3
Total	1 702.3	6 533.9	10 574.8	2 815.1	21 626.1

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

na not available

(a) Includes the private and public trading sector and general government sector. Excludes some landfills operated by businesses not coded to ANZSIC 29.

(b) Includes paper and timber.

Source: *Waste Management Services, Australia, 2009–10* (8698.0).

had activity located in Victoria. The businesses in these two states contributed 59% of total private and public trading sector employment, 63% of total income and 63% of total expenses in 2009–10.

There were an estimated 918 landfills operated by the Waste management services businesses and organisations (including general government) in 2009–10. Australia has a strong dependence on landfill for waste management. The majority of waste that is not recycled or re-used in Australia is disposed of in the nation's landfills.

During 2009–10, there were 21.6 million tonnes of waste received at landfills, with 7.4 million tonnes (34%) coming from the domestic and municipal waste stream, 6.7 million tonnes (31%) from the commercial and industrial waste stream and 5.6 million tonnes (26%) from the construction and demolition waste stream (table 2.14).

Of the material received at facilities other than landfills, 10.4 million tonnes (59%) were recovered or reprocessed, 4 million tonnes (23%) were disposed to landfill or other final destination, and 3.2 million tonnes (18%) were

2.15 QUANTITIES OF MATERIAL DISPOSED OR DIVERTED FROM LANDFILL(a)—2009–10

		New South			South	Western	Tasmania/	
		Wales	Victoria	Queensland	Australia	Australia	NT/ACT	Australia
Disposed at landfills	'000 t	6 255.4	2 623.3	5 040.9	^ 785.0	^ 2 279.2	746.3	17 730.1
Recovered or reprocessed (all facilities)	'000 t	4 913.0	2 454.2	2 758.1	1 544.2	893.7	586.7	13 150.0
Total(b)	'000 t	11 168.4	5 077.5	7 799.0	2 329.2	3 172.9	1 333.0	30 880.0
Diversion rate	%	44.0	48.3	35.4	66.3	28.2	44.0	42.6

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Includes the public and private trading sector and general government sector. Data are collected from organisations classified to ANZSIC Subdivision 29, Waste collection, treatment and disposal services.

(b) Excludes waste disposed at destinations other than landfills (e.g. incineration, indefinite storage, etc).

Source: Waste Management Services, Australia, 2009–10 (8698.0).

transferred to other businesses/organisations for recovery or reprocessing. Some of this waste may be transferred out of the waste services industry and reprocessed by another industry.

A total of 13.2 million tonnes of material were recovered or reprocessed from landfills and other waste facilities. This material was diverted from being disposed at landfills, resulting in a diversion rate of 43%. South Australia had the highest waste diversion rate of 66% (table 2.15).

Land and biodiversity

Biodiversity (or biological diversity) is the variety of all life forms on earth – the different plants, animals and micro-organisms, the genes they contain, and the ecosystems of which they form a part. Biodiversity is constantly changing; it is increased by genetic change and evolution and reduced by processes such as habitat degradation and species extinction.

Australia's biodiversity is unique and globally significant, with Australia being home to many endemic species of plants and animals. Australia is recognised as one of only 17 'mega-diverse' countries, with ecosystems of exceptional variety and uniqueness. This group of mega-diverse countries covers less than 10% of the global surface, but supports more than 70% of the earth's biological diversity.

Loss of biodiversity is considered by some as Australia's most serious environmental threat. Habitat degradation resulting from human activity has put many species at risk, with the clearance of native vegetation a significant threat to biodiversity. Other threats include deterioration of soil and water quality, increased dryland salinity, the spread of weeds and feral

pests, and climate change. Although land clearing has continued, in 2009 the extent of forest land conversion was about one-third (32%) of the 1990 level (graph 2.16).

Threatened species

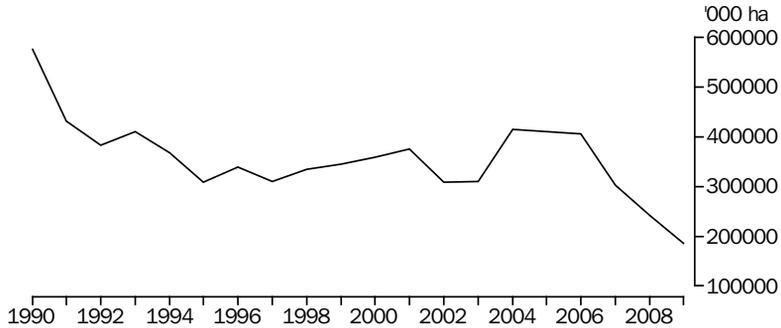
The Australian Government administers biodiversity conservation through the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act). This environmental legislation provides a framework and advice to protect and manage important flora, fauna, ecological communities and heritage places. The EPBC Act classifies listed threatened species into six categories: extinct, extinct in the wild, critically endangered, endangered, vulnerable and conservation dependent.

Since the commencement of the EPBC Act in July 2000, the number of listed threatened fauna species has increased by 41% from 315 to 444 (graph 2.17). The number of endangered fauna species rose by 51% between 2000 and 2011, while the number of vulnerable fauna species increased by 23%. In November 2011, nearly half (45%) of the 121 mammals listed as threatened were classified as vulnerable, nearly a third (32%) were more seriously threatened (endangered and critically endangered) and the remainder were presumed extinct (table 2.18).

These increases may reflect taxonomic revisions and improved reporting in conservation status and do not necessarily mean a change in the conservation status of the fauna.

Table 2.18 shows that in 2011, 98 species of Australian flora and fauna were listed as extinct, while 1,687 species and 30 ecological communities were listed as endangered or

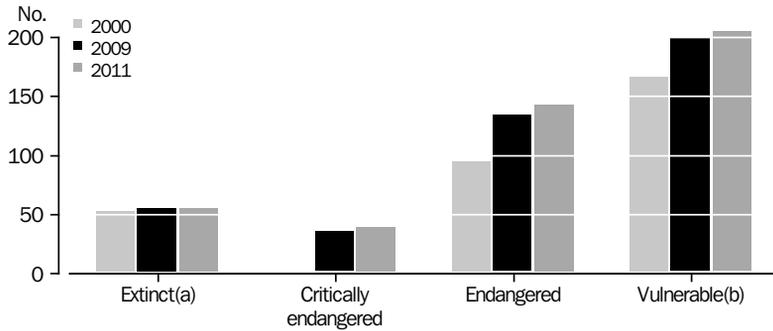
2.16 LAND USE CHANGE, Forest conversion and reclearing(a)



(a) Forest conversion is land cleared for the first time. Reclearing is clearing of land previously cleared.

Source: Australia's National Greenhouse Accounts, National Inventory Report 2009, Vol 2, table 7.2.

2.17 THREATENED FAUNA SPECIES



(a) Includes category 'extinct in the wild'.

(b) Includes category 'conservation dependent'.

Source: Department of Sustainability, Environment, Water, Population and Communities, <<http://www.environment.gov.au>>.

2.18 THREATENED SPECIES AND ECOLOGICAL COMMUNITIES, Australia—2011

Native species	Extinct	Extinct in the wild	Critically endangered	Endangered	Vulnerable	Conservation dependent	Total
	no.	no.	no.	no.	no.	no.	
Fauna							
Fish	—	1	4	16	26	4	51
Frogs	4	—	2	15	12	—	33
Reptiles	—	—	4	16	37	—	57
Birds	23	—	6	44	61	—	134
Mammals	27	—	4	35	55	—	121
Other animals	1	—	20	17	10	—	48
Total Fauna	55	1	40	143	201	4	444
Flora	42	—	118	530	651	—	1 341
Total species	97	1	158	673	852	4	1 785
Ecological communities	—	—	18	11	1	—	30

— nil or rounded to zero (including null cells)

Source: Department of Sustainability, Environment, Water, Population and Communities.

vulnerable under the EPBC Act. An ecological community is a naturally occurring and unique group of plants and animals.

Parks and protected areas

Although Australia's biodiversity continues to be threatened by many factors, measures have been put in place to protect native flora and fauna. One such measure is a system of protected areas (the Natural Reserve System) that is dedicated to the protection and maintenance of biological diversity, and natural and cultural resources. The development of a comprehensive, adequate and representative National Reserve System is the responsibility of the Australian, state and territory governments as part of Australia's obligation under the United Nations Biodiversity Convention, established in 1993.

Most national parks and other protected areas in Australia are declared and managed by state and territory governments, although some protected areas are managed by conservation or other groups. Declaration and management of Indigenous Protected Areas – land owned by Aboriginal and Torres Strait Island people that is managed to protect its natural and associated cultural values – began in 1998.

The area of conservation reserves in each state and territory is recorded in the Collaborative Australian Protected Areas Database (CAPAD)

using the International Union for Conservation of Nature (IUCN) classification system of protected areas. The classification system comprises seven categories based on the main (or primary) management intent of protected areas.

From 2006 to 2008, Australia's terrestrial protected areas increased by more than 8.9 million hectares and now extend across 98.5 million hectares or 13% of Australia's total area. Table 2.19 shows the area of protected land in each category in 2008. Included in the 98.5 million hectares is 20.6 million hectares of Indigenous Protected Areas. These areas are actively managed by the Aboriginal and Torres Strait Islander owners and rangers to protect biodiversity by controlling weeds, feral animals and bushfires, along with visitor impacts.

The area protected for National parks (category II) increased by nearly 11 million hectares between 2002 and 2008 to encompass 5% of the total land area of Australia by 2008 (graph 2.20).

The Australian Government's Caring for our Country Program aims to expand the area protected within the National Reserve System to at least 125 million hectares by 2013 and expand Indigenous Protected Areas by between 8 and 16 million hectares. In addition, the programs aim to increase native habitat by at least one million hectares and reduce the impact of cane toads, camels, rodents, rabbits and weeds.

2.19 TERRESTRIAL PROTECTED AREAS, Australia—2008

<i>IUCN category</i>	<i>Primary management intent</i>	<i>no.</i>	<i>Area</i> <i>'000 ha</i>	<i>Proportion(a)</i> <i>%</i>
IA	Strict nature reserve: managed mainly for science	2 491	22 008	2.9
IB	Wilderness area	66	4 159	0.5
II	National park: ecosystem conservation and recreation	1 000	39 868	5.2
III	National monument: conservation of specific natural features	2 333	1 649	0.2
IV	Habitat/species management	2 190	4 220	0.6
V	Protected landscape/seascape	218	1 017	0.1
VI	Managed resource protected area	1 042	25 566	3.3
Total		9 340(b)	98 487(c)	12.8

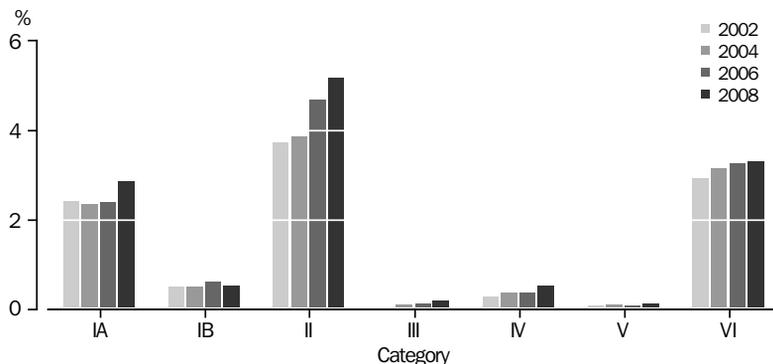
(a) Proportion of the total land area of Australia, 768,826,956 ha.

(b) Includes 25 Indigenous Protected Areas.

(c) Includes Indigenous Protected Areas of 20,592,227 ha.

Source: Department of Sustainability, Environment, Water, Population and Communities.

2.20 PROTECTED AREAS, As a percentage of Australia—2002–2008



Source: Department of the Environment, Water, Heritage and the Arts, CAPAD.

Invasive species

An invasive species is a non-indigenous species with an adverse impact on the habitats that it invades. Invasive species threaten valued environmental, agricultural or other resources through the damage they cause. Invasive species include feral animals, non-native invertebrates and introduced weeds. They can threaten native species, contribute to land degradation and reduce agricultural productivity.

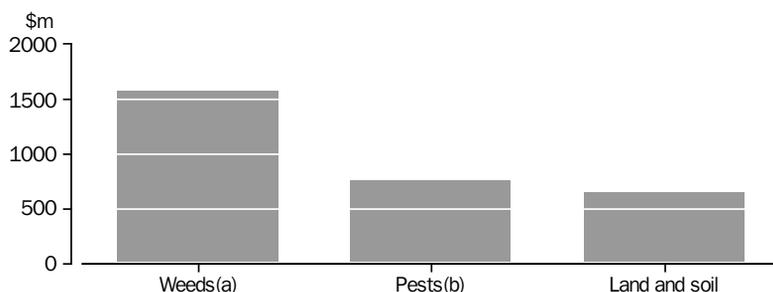
The cost of weeds to Australian agriculture (impact and control costs) has been estimated at more than \$3.4 billion annually (*Caring for our Country, Business Plan 2009–2010*). ABS data for 2006–07 show that farmers spent \$1.6 billion controlling and preventing weeds, which was more than for other pests (\$768m) and land and soil problems (\$649m) combined (graph 2.21).

Weed management activities also proved very time consuming, with agricultural businesses undertaking, on average, 31 person days of effort on these activities in 2006–07. In comparison, 26 and 23 days were spent on managing pests and land and soil problems, respectively.

Weeds of National Significance is an agreed list of 20 problem weeds used as a guide for a coordinated national effort for addressing weed problems (table 2.22). Selection of these species was made by the Australian Government and all state and territory governments in 1999, based on environmental damage and economic impacts.

Some invasive pests were deliberately introduced to Australia, while others were accidentally imported. Table 2.23 lists the major introduced pest species of concern.

2.21 FARM EXPENDITURE ON NATURAL RESOURCE MANAGEMENT—2006–07



(a) A weed is a plant growing where it is not wanted. Weeds may damage crops or poison livestock when growing in pasture.

(b) A pest is a noxious, destructive or troublesome animal or insect.

Source: *Natural Resource Management on Australian Farms, 2006–07* (4620.0).

2.22 WEEDS OF NATIONAL SIGNIFICANCE

Common name	STATE/TERRITORY IN WHICH WEED FOUND							
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT
Alligator Weed	X	X	X					X
Athel Pine	X	X	X	X	X		X	
Bitou Bush/Boneseed(a)	X	X	X	X	X	X		
Blackberry	X	X	X	X	X	X		X
Bridal Creeper	X	X	X	X	X	X		
Cabomba	X	X	X				X	
Chilean Needle Grass	X	X	X	X				X
Gorse	X	X	X	X	X	X		
Hymenachne			X				X	
Lantana	X	X	X	X	X		X	
Mesquite	X		X	X	X		X	
Mimosa					X		X	
Parkinsonia	X		X	X	X		X	
Parthenium Weed	X		X				X	
Pond Apple			X					
Prickly Acacia			X	X	X		X	
Rubber Vine			X		X			
Salvinia	X	X	X	X	X		X	
Serrated Tussock	X	X				X		X
Willows(b)	X	X	X	X		X		X

(a) For the purposes of this list, the two taxa are treated as one.

(b) Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow.

Source: <<http://www.weeds.gov.au/weeds/lists/wons.html>>.

2.23 INVASIVE INTRODUCED PESTS OF CONCERN

Category	Invasive species/disease common name	Scientific or disease name
Diseases, fungi, and parasites	Beak and feather disease	<i>Psittacine circoviral</i>
	Amphibian chytrid fungus disease	<i>Chytridiomycosis</i>
	Mundulla yellows (not attributable to a specific organism)	
	Root-rot fungus	<i>Phytophthora cinnamomi</i>
	Myrtle rust	<i>Uredo rangellii</i>
Feral animals	Cane toad	<i>Bufo marinus</i>
	European wild rabbit	<i>Oryctolagus cuniculus</i>
	European red fox	<i>Vulpes vulpes</i>
	Feral camel	<i>Camelus dromedarius</i>
	Feral cat	<i>Felis catus</i>
	Feral goat	<i>Capra hircus</i>
	Feral horse	<i>Equus caballus</i>
	Feral donkey	<i>Equus asinus</i>
	Feral pig	<i>Sus scrofa</i>
	Feral water buffalo	<i>Bubalus bubalis</i>
Insects	European wasps	<i>Vespula germanica</i>
	Feral honeybees	<i>Apis mellifera</i>
	Red fire ant	<i>Solenopsis invicta</i>
	Yellow crazy ant	<i>Anoplolepis gracillipes</i>
	Tramp ant (six species)	

Source: <<http://www.environment.gov.au/biodiversity/invasive/index.html>>.

The cane toad is an example of a feral animal. It was introduced into Australia as a biological control against cane beetles that destroy sugarcane crops, but failed to control the cane beetles and became a major pest itself. Cane toads eat mainly insects, but also frogs, small mammals and snakes. Additionally, because they are poisonous, cane toads kill many animals that prey on them including goannas, quolls and birds. They are still spreading across Australia, migrating both west and south.

Feral deer are an emerging problem. Expanding and invading populations are damaging natural environments and agriculture. Deer were introduced from Europe for hunting in the 19th century.

Through biological control, European wasp numbers have been reduced to manageable levels since 1989 by the introduction of a small parasitic wasp (*Specbopbaga vesparum*). The introduction followed rigorous testing to ensure that this wasp only attacks the European wasp.

Water

Water is critical for sustaining life. It performs essential functions within terrestrial and marine ecosystems and represents an important input into Australia's economy, particularly agriculture.

Long-term drought in many parts of Australia, together with increasing evidence of the adverse effects of increased water use on river health, has changed the way Australians regard water. Taking too much water out of Australia's river and groundwater systems can have detrimental economic and environmental consequences. There is added pressure on the system due to climatic conditions, which affect native animal and plant populations, agricultural production and water availability for human consumption.

Water management

With the signing of the National Water Initiative (NWI) in 2004, the states and territories, along with the Australian Government, officially recognised the need to improve the co-ordination of water management, subsequent efficiency of water use and the health of Australia's river and groundwater systems. Built on the Council of Australian Governments (COAG) framework for water reform signed in 1994, the NWI involves a

range of reforms to the water industry, including improved water planning, water trading and water accounting. The *Water Act 2007* (Cwlth) established the Bureau of Meteorology as the major custodian of all water related data including collection, publication and implementation of water information standards. The Murray-Darling Basin Authority was also established under this Act, making it responsible for a national focus on water management in the Murray-Darling Basin.

Water markets are an important mechanism for allocating water efficiently and contributing to NWI goals of managing water to optimise economic, social and environmental outcomes. The *National Water Commission, Australian Water Market Report, 2009–10* estimated that the value of transactions for traded water was almost \$3 billion and involved 4,444 gigalitres (GL) of water.

Water availability

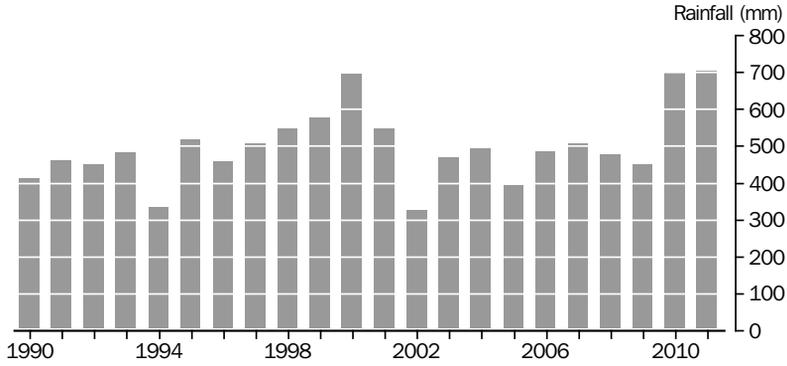
Water is principally made available to society from surface water in the form of rivers, lakes, reservoirs, dams and rainwater tanks, and from underground aquifers in the form of wells and bores. As an island continent, Australia is totally dependent on precipitation (rainfall and snow) for its water supply. Because Australia is the driest inhabited continent, man-made water storage is critical in maintaining society's water supply. Recognising the connectivity between surface and groundwater resources, the NWI parties have agreed to manage connected systems as single resources.

Rainfall

Average annual rainfall varies considerably across Australia. Large areas of the country have average annual rainfalls of 600–1,500 millimetres (mm), a range similar to most European and North American averages. However, about half of the continent experiences an average annual rainfall of less than 300 mm.

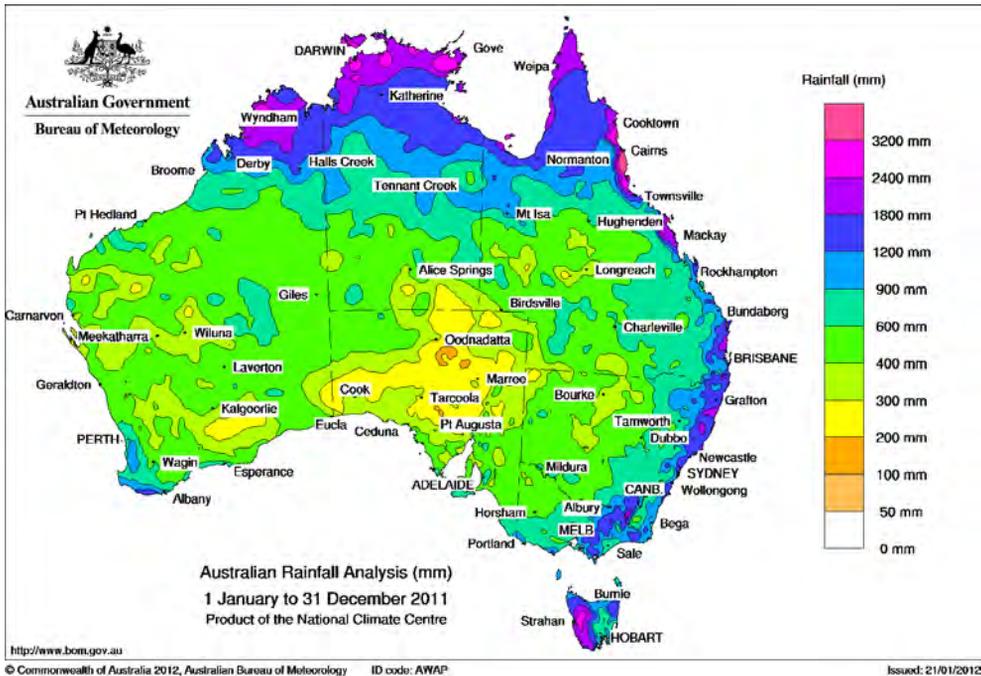
Rainfall averaged over Australia during 2011 was 705 mm, very similar to 2010 (703 mm). The observations were the highest and second highest (respectively) during the period 1990 to 2011 (graph 2.24). Map 2.25 shows rainfall totals during 2011 over Australia, while Map 2.26 shows that most areas of Australia received above average rainfall for their region during 2011.

2.24 AVERAGE ANNUAL RAINFALL, Australia—1990 to 2011

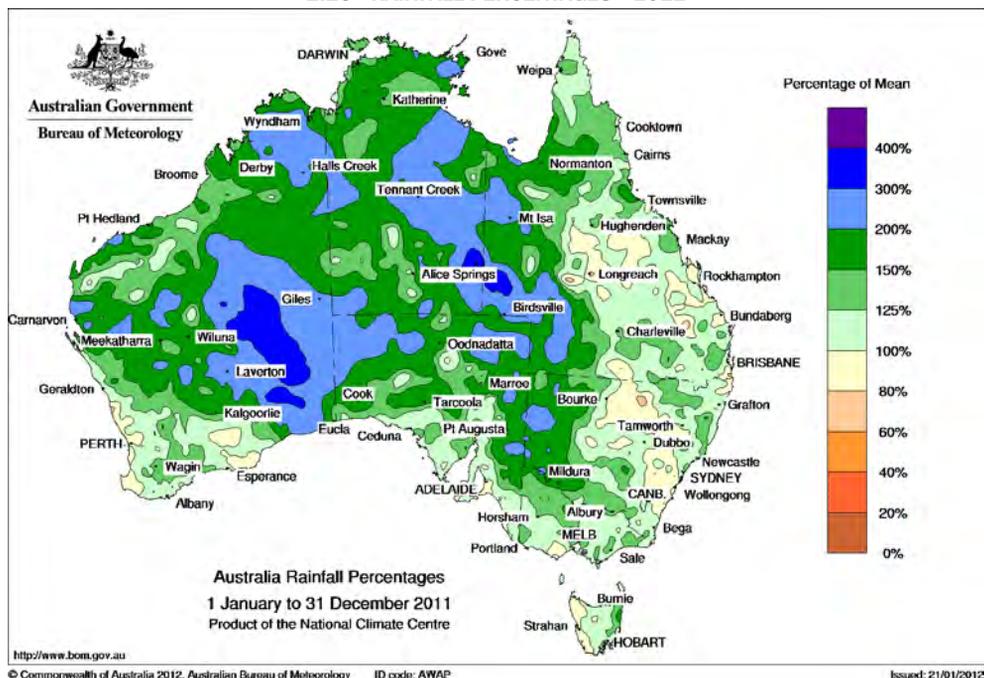


Source: Bureau of Meteorology.

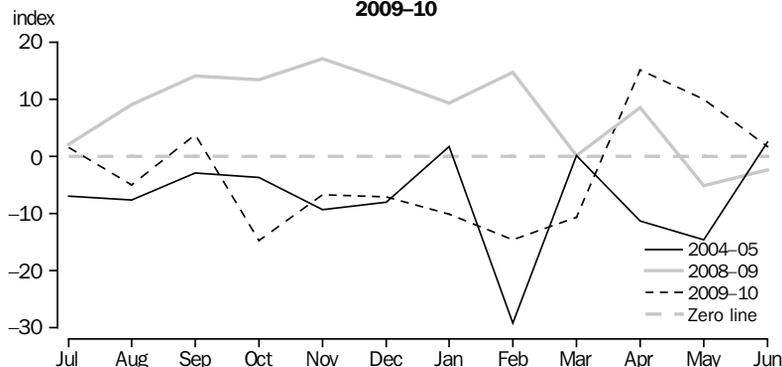
2.25 RAINFALL TOTALS—2011



2.26 RAINFALL PERCENTAGES—2011



2.27 SOUTHERN OSCILLATION INDEX, July to June—2004-05, 2008-09 and 2009-10



Source: Bureau of Meteorology.

More information on Australia's rainfall can be found in chapter 1 *Geography and climate* and the Bureau of Meteorology website.

El Niño and La Niña phenomena

The Southern Oscillation Index (SOI) is calculated using the air pressure difference between Tahiti and Darwin. A strongly negative SOI (below -10), is characteristic of El Niño,

which is often associated with below average winter and spring rainfall over eastern Australia, and a weaker than normal monsoon in the north. A strongly positive SOI (above $+10$) is characteristic of La Niña, which is often associated with above average winter and spring rainfall over eastern Australia, and an earlier than normal start to the northern monsoon season, with above-average rainfall during the tropical wet season.

In 2009–10, Australia experienced a weak El Niño event (graph 2.27). The largest impact of El Niño occurred during spring, with below average rainfall levels across much of Australia. After a relatively dry winter and spring, the warmer months exhibited rainfall patterns atypical of those normally associated with El Niño, with widespread above average summer rainfall in eastern Australia.

Chapter 1 *Geography and climate* has a special article on La Niña and the floods of 2010–11.

Water use

Water use is important to quantify because it gives a baseline for the amount of water that society needs to operate, the pressures placed on natural water systems by society, and the impacts of water management decisions on society. Measuring patterns of water use is important when predicting future land use, developing policy initiatives, or when reviewing the impact of present and past practices. For example, water use patterns give an indication of where water use efficiency programs or the buy-back of water licences should be focused. An assessment of water use by industry and households enables water managers to target management tools like drought contingency programs (e.g. water restrictions). Comparing water use with the economic value generated shows which activities are generating the most economic value to society as a result of using the resource.

The ABS publication *Water Account, Australia* (4610.0) provides information on the flow of water from the environment into the economy, and back to the environment. It provides data on the use of water by households, businesses and governments within the economy, and water returns to the environment.

The 2009–10 water account showed that 64,076 gigalitres (GL) of water was extracted from the environment and used within the Australian economy during 2009–10. The majority of this (86%) was extracted directly from the environment by water users, while the remaining water was extracted by the Water supply, sewerage and drainage services industry and then supplied to users.

In 2009–10, the Agriculture industry was by far the largest consumer of water, accounting for 52% of total water consumption in that

year. The Water supply, sewerage and drainage services industry and Household sector were the next highest (14% each), followed by the Manufacturing industry (5%).

The Agriculture industry consumed 6,987 GL of water in 2009–10. Sheep, beef cattle and grain farming had the highest consumption within the Agriculture industry, with 2,649 GL (or 38% of the industry's consumption). An estimated 2% (126 GL) of total agricultural water use was actually re-use water. Nursery and floriculture production consumed the highest percentage of re-use water at 7% of their total water consumption, followed by Mushroom and vegetable growing at 3% of their total water consumption.

The Mining industry accounted for 4% (489 GL) of water consumption by Australian industry in 2009–10, with Metal ore mining consuming the greatest amount (298 GL or 61%) of the water consumed by this industry.

In 2009–10, the Electricity, gas, water and waste services industry was the largest extractor of water from the environment, taking 49,793 GL. However, because 99.7% of this is in-stream use for hydro-electric power generation, the industries only actually consumed 297 GL or 2% of Australia's total water consumption.

Total water consumption in Australia fell by 28% between 2004–05 and 2009–10, from 18,767 GL to 13,476 GL, with household water consumption falling by 11% to 1,868 GL over the same time period. The decline in water consumption over this time period is indicative of reduced rainfall and drought conditions affecting water availability, particularly in southern and eastern parts of Australia.

In 2008–09, there was a large difference in the average amount paid for supplied water by different parts of the economy – households on average paid \$1.93 per 1,000 litres (kL) and agricultural businesses \$0.12 per kL.

Agricultural water use for irrigation

Less than 1% of the 399 million hectares of Australia's agricultural land was irrigated in 2009–10. However, of all water used for agricultural production, 90% was used for irrigation of crops and pastures. The remainder was used for other agricultural purposes, such as stock drinking water, dairy and piggery cleaning.

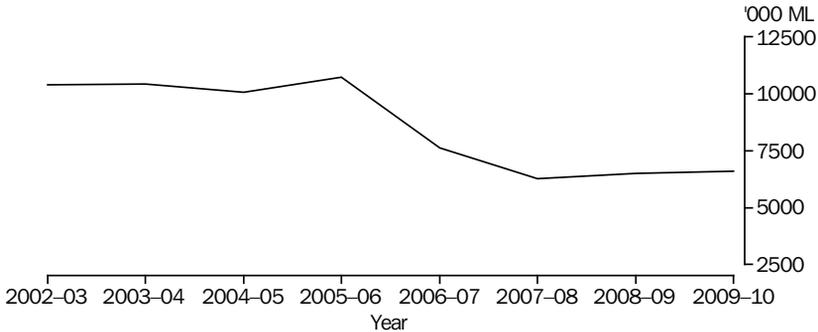
Agricultural water use for irrigation rose in 2009–10 by 1.5% to 6,596 GL (graph 2.28). However, the area irrigated increased by 5% to 1.84 million hectares. As a result, the average application rate decreased from 3.7 ML/ha to 3.6 ML/ha.

Pasture for grazing accounted for the greatest amount of irrigated land (542,121 hectares) in Australia in 2009–10, with the volume of irrigation

water applied representing 26% of the total water used for irrigation.

There was an increase of 2.1% in the amount of water used for irrigation in the Murray-Darling Basin between 2008–09 and 2009–10 (table 2.29). The amount of water used for irrigation in the rest of Australia also rose slightly (0.8%). In total, the amount of water used for irrigation in

2.28 AGRICULTURAL WATER USE FOR IRRIGATION(a)



(a) Minor break in time series in 2005–06 due to changes to ABS survey frame.

Source: *Water Use on Australian Farms (4618.0)*.

2.29 AGRICULTURE WATER USE FOR IRRIGATION, Australia and Murray-Darling Basin

Year	MURRAY-DARLING BASIN		REST OF AUSTRALIA		TOTAL AUSTRALIA	
	Volume applied ML	change %	Volume applied ML	change %	Volume applied ML	change %
2005–06	7 369 807	..	3 367 557	..	10 737 364	..
2006–07	4 458 279	-39.5	3 177 915	-5.6	7 636 194	-28.9
2007–08	3 141 659	-29.5	3 143 140	-1.1	6 284 799	-17.7
2008–09	3 492 407	11.2	3 008 170	-4.3	6 500 577	3.4
2009–10	3 564 481	2.1	3 031 558	0.8	6 596 040	1.5

.. not applicable

Source: *Water Use on Australian Farms (4618.0)*.

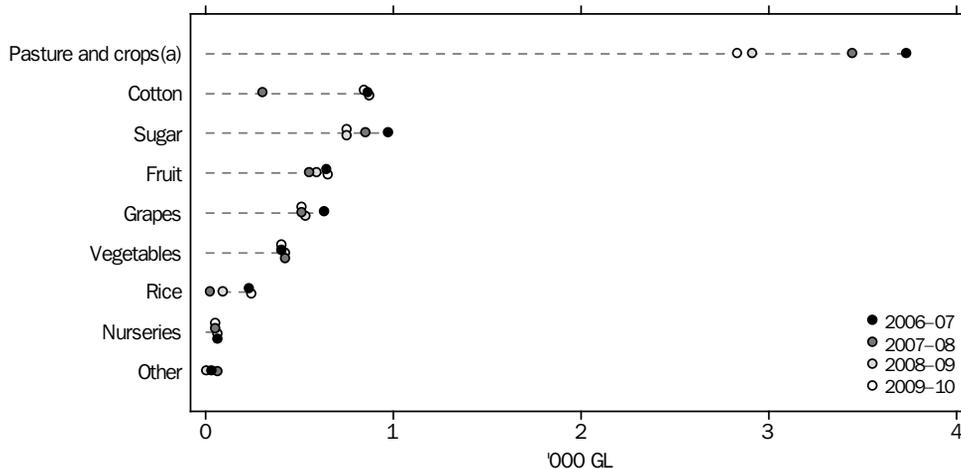
2.30 AGRICULTURAL IRRIGATION USE, By state—2009–10

	AGRICULTURAL BUSINESSES	IRRIGATION	
	no.	ML	% of total
New South Wales(a)	43 228	2 002 797	30.4
Victoria	32 741	1 504 742	22.8
Queensland	27 578	1 823 870	27.7
South Australia	14 097	711 991	10.8
Western Australia	12 465	252 058	3.8
Tasmania	3 935	281 953	4.3
Northern Territory	510	18 628	0.3
Australia	134 553	6 596 040	100.0

(a) Includes ACT.

Source: *Water Use on Australian Farms (4618.0)*.

2.31 WATER CONSUMPTION IN AGRICULTURE, By activity



(a) Includes pasture for grazing, hay, silage and seed production as well as cereal crops; excludes rice.

Source: *Water Use on Australian Farms (4618.0)*.

Australia increased by 95 GL, or 1.5%, between 2008–09 and 2009–10.

While there was a 1.5% increase in the amount of water used for irrigation between 2008–09 and 2009–10 in Australia, some states and territories recorded increased use of irrigation water, while others recorded a decrease (table 2.30). Victoria used a total of 1,505 GL, a 26% increase from the previous year, while Western Australia recorded an increase of 11% to 252 GL. Queensland’s use of irrigation water dropped by 235 GL (or 11%).

New South Wales used more water for irrigation than any other state or territory in 2009–10, with 30% (or 2,003 GL) of the total Australian irrigation water used.

Graph 2.31 shows water use by agricultural activity for the years 2006–07 to 2009–10. Pastures and cereal crops, together, were by far the largest consumer of water, followed by sugar and cotton.

In 2009–10, the gross value of irrigated agricultural production was \$11.5 billion, an increase of 9% from 2004–05. Vegetables for human consumption was the greatest contributor (21%) at \$2.4 billion, followed closely by Fruit and nuts (20%) at \$2.2 billion and Dairy production (16%) at \$1.8 billion. Irrigated agricultural production contributed 29% of the total gross value of agricultural commodities produced in 2009–10.

More information on irrigation in agriculture can be found in chapter 16 *Agriculture*.

Air

The Earth’s atmosphere consists mainly of nitrogen and oxygen. It also contains smaller amounts of other gases and particles, including ozone that protects against harmful ultraviolet rays and greenhouse gases that trap some of the sun’s rays and regulate the earth’s surface temperature.

However, some human activities change the nature of the atmosphere, affecting air quality, levels of ultraviolet (UV) radiation and the amount of greenhouse gases (notably, carbon dioxide and methane). For example, the burning of fossil fuels (e.g. coal, oil and gas) has greatly added to the atmospheric levels of the greenhouse gas, carbon dioxide, while the clearing of forests and grasslands has reduced their capacity to remove carbon dioxide from the atmosphere.

Emissions of substances into the atmosphere are considered in this section under three main categories: greenhouse gas emissions, air pollutants and ozone depleting substances.

Greenhouse gas emissions

The main naturally occurring greenhouse gases (GHGs) in the earth's atmosphere are carbon dioxide and water vapour. The increased trapping of heat in the atmosphere arises from increasing levels of GHGs in the atmosphere. This is known as the greenhouse effect and has been linked to global warming and climate change. A 2007–08 ABS survey of households (*Environmental views and behaviour, 2007–08*, 4626.0.55.001) indicated that nearly three-quarters (74%) of Australians were concerned about climate change.

The main GHGs generated by human activities are carbon dioxide, methane and nitrous oxide. Smaller amounts of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride are also emitted. Carbon dioxide is by far the dominant GHG, accounting for about 75% when expressed as carbon dioxide equivalents (CO₂-e). CO₂-e is a measure used to take account of the different types of GHG emissions on a common basis.

Australia's total GHG emissions in 2009 were nearly 3% higher than in 1990 (including net emissions from land use, land use change and forestry). Carbon dioxide emissions were 3% higher, methane emissions were 5% lower, and nitrous oxide emissions were 34% higher. When Australia ratified the Kyoto Protocol, its goal was to limit net GHG emissions to 8% above the 1990 levels across the period 2008–2012. On a gross basis (i.e. excluding net emissions from land use, land use change and forestry), the change between 1990 and 2009 was 31%.

The main GHGs are described below.

Carbon dioxide

Most of Australia's carbon dioxide emissions occur as the result of fuel combustion. In 2009, fuel combustion accounted for 90% of the nation's total carbon dioxide emissions.

Between 1990 and 2009, carbon dioxide emissions from fuel combustion increased by 47%. Within the fuel combustion activities, energy industries showed an increase of 59% and transport was up 35% in this period (graph 2.32).

The energy industries, in particular electricity generation from coal-fired stations, accounted for 60% of fuel combustion emissions in 2009, up from 56% in 1990. Transport accounted for 22% of fuel combustion emissions in 2009, down from 24% in 1990.

Methane

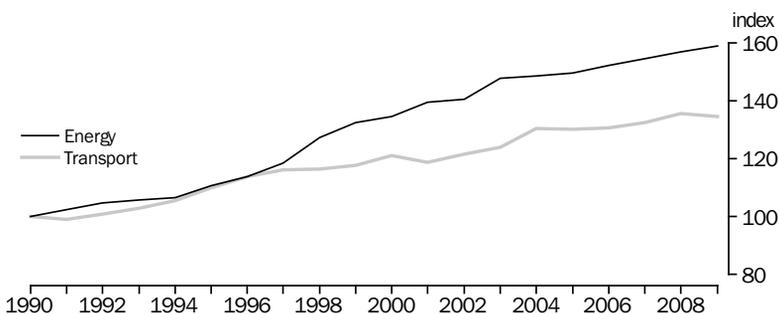
When expressed in CO₂-e, methane comprised 20% of Australia's total GHG emissions in 2009, compared to 22% in 1990.

The digestive processes of livestock (enteric fermentation) and fugitive emissions from fuels together account for more than three-quarters of Australia's methane emissions (graph 2.33).

Nitrous oxide and other gases

When expressed in CO₂-e, nitrous oxide comprised 5% of Australia's total GHG emissions in 2009, compared to 4% in 1990. Nitrous oxide emissions are mainly associated with nitrogen-based fertilisers and manure use.

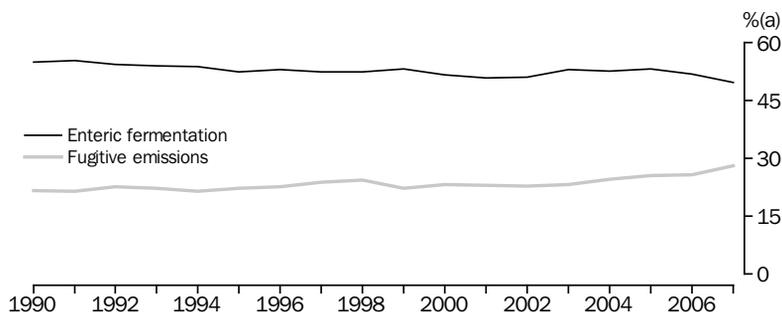
2.32 CARBON DIOXIDE EMISSIONS(a), Energy and transport



(a) Relative to 1990 base year, 1990 = 100.0.

Source: Australian Greenhouse Emissions Information System (AGEIS),
National Greenhouse Gas Inventory – Accounting for the Kyoto Target, April 2011.

2.33 MAIN SOURCES OF METHANE EMISSIONS



(a) Percentage (%) of total methane emissions.

Source: Australian Greenhouse Emissions Information System (AGEIS), National Greenhouse Gas Inventory – Kyoto Protocol Accounting Framework.

Very small contributions to GHG emissions are made by the hydrofluorocarbons (HFCs), the perfluorocarbons (PFCs) and sulphur hexafluoride that are used in refrigeration and air-conditioning equipment, fire extinguishers, aerosol cans and electrical equipment. The combined contribution of these gases to the total GHG emissions has been around 1% or less over the period 1990 to 2009.

Air pollutants

The state of our air is an important factor in the quality of life. However, poor air quality can have a range of negative effects, causing health problems, reducing crop yields and harming flora and fauna. Air pollutant levels are not considered to be high in urban Australia relative to other world cities.

The main air pollutants in outdoor (or ambient) air are carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulphur

dioxide and particulates (dust). The National Environment Protection Measure for Ambient Air Quality (the Air NEPM) sets standards for the maximum concentrations of key air pollutants that all Australian jurisdictions are legally bound to meet.

Carbon monoxide is produced when combustion of vegetation and fossil fuels is incomplete. In 2009, agriculture generated over five times as much carbon monoxide as all other sources combined (table 2.34).

The main source of sulphur dioxide emissions is industrial activity including copper, lead, zinc, nickel and silver processing.

Nitrogen dioxide is an important air pollutant because it contributes to the formation of photochemical smog, which is another health hazard. The burning of fossil fuels (coal, oil and gas) is a major source of nitrogen dioxide.

2.34 SELECTED AIR POLLUTANTS AND SOURCES—2009

Sector	Oxides of nitrogen(a)	Carbon monoxide	Sulphur dioxide
	'000 tonnes	'000 tonnes	'000 tonnes
Energy			
Electricity and heat production	626.95	67.46	631.04
Manufacturing	391.04	300.37	107.90
Transport	339.27	1 995.33	28.76
Road transport	232.68	1 657.27	15.31
Residential	7.79	562.88	0.48
Industrial processes	25.32	4.62	1 811.28
Agriculture	691.81	16 238.37	..

.. not applicable

(a) Mainly nitric oxide (NO) and nitrogen dioxide (NO₂).

Source: DCC, National Greenhouse Gas Inventory 2009, Common Reporting Tables Agriculture, Energy and Industrial Processes.

2.35 PARTICULATE EMISSIONS—2009–10

Source of emissions	PM ₁₀	PM _{2.5}
	kilograms/year '000	kilograms/year '000
Burning (fuel reduction, regeneration, agricultural) / Wildfires	240 000	na
Metal ore mining	230 000	4 200
Coal mining	220 000	5 500
Windblown dust	190 000	na
Paved/unpaved roads	160 000	na
Electricity generation	23 000	9 500
Solid fuel burning (domestic)	20 000	na
Motor vehicles	12 000	na
Basic non-ferrous metal manufacturing	9 500	1 400
Other non-metallic mineral mining and quarrying	8 100	160
Construction material mining	7 400	210
Water transport	6 900	160
Basic ferrous metal manufacturing	5 100	200
Sugar and confectionary manufacturing	4 200	2 300
Oil and gas extraction	2 200	680
Log sawmilling and timber dressing	1 400	900

na not available

Source: Department of Sustainability, Environment, Water, Population and Communities, National Pollution Inventory extracted 29/11/2011.

Particulate matter (mainly smoke and dust) emissions are reported in the National Pollution Inventory (NPI). Two sizes of particle are measured, 10 µm (micrometres) or less in diameter (PM₁₀) and 2.5 micrometres or less in diameter (PM_{2.5}). These particles are of a size that can be inhaled and hence pose a health hazard to humans (and animals). Besides being a health hazard, particulate matter can affect the aesthetics and utility of areas through reduction in visibility. It may also damage buildings, other structures and vegetation.

PM_{2.5} is mainly emitted by coal-burning electricity generating plants and by mining operations. Bushfires and dust storms add to the burden of PM₁₀ emissions, though mining is also a large contributor. Within a given region or population centre, the exposure to these particles will vary according to local activities.

It should be noted that the measurements relate to the amounts generated at the source and therefore exposure of humans and the environment to pollution cannot be determined by the NPI. Industrial/mining emissions are estimated from reports provided by industry, while others, such as windblown dust, bushfires, and motor vehicles are estimated by state and territory authorities (table 2.35).

Ozone depleting substances

The ozone layer is a naturally occurring layer of the upper atmosphere where harmful ultraviolet radiation from the sun is filtered out. Ozone depleting substances (ODSs) can break down the ozone layer, allowing more harmful radiation to penetrate.

Data collected in the upper atmosphere have shown a general thinning of the earth's ozone layer, including a 5–9% depletion over Australia since the 1960s. The Antarctic ozone hole is a thinning of ozone in the stratosphere over Antarctica each spring.

The main classes of ODSs are chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halons and methyl bromide. Australia was a signatory to the Montreal Protocol in 1989, whereby countries agreed to phase out the use of ODSs. The use of CFCs, traditionally used in refrigeration and aerosols, has largely been replaced by hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), which are synthetic greenhouse gases. Emissions from HFCs and PFCs increased almost five-fold between 1990 and 2007, but in total they contribute 1% or less to Australia's total greenhouse gas emissions.

Accounting for the environment

Land and environment assets can be valued through traditional national accounting techniques. This allows these assets to be compared to other assets in a national accounting context, for example, the impact of their depletion on the ability to generate income and production in the future. While the System of Environmental-Economic Accounts (SEEA) recommends treatment of environment assets in both physical and monetary terms, land and other environment assets were consistently measured in the System of National Accounts and other frameworks prior to the development of the environment accounts. This section covers the existing treatment of environmental assets and the impact of their depletion on national accounts estimates of value added, income and savings. The special article in this chapter, *Building a land account for Australia*, describes land accounting and its relationship to the SEEA.

Environmental assets

The economy has a complex relationship with the environment. The environment provides the raw materials and energy for the production of goods and services that support people's lifestyles. The environment also sustains damage through the activities of households and businesses. This damage is well documented in environmental literature and previously was not in scope of the national accounts. The 2008 System of National Accounts includes the impact of depletion on the value of natural assets that lie within the production boundary. These impacts are measured in the 'Other changes in assets' accounts, though not explicitly published in the Australian System of National Accounts. Therefore, while depletion occurs in the national balance sheet for Australia, it is often overridden by the value of new discoveries.

The national accounts measure of GDP includes the value of goods and services produced and the income generated through the use of environmental assets, but it does not reflect the economic cost of depleting environmental assets or the damage that arises from economic activity that is not remediated. In recognition of this asymmetry, the ABS has examined how to capture

the environmental damage sustained in servicing the Australian economy and the longer-term sustainability in exploiting its environmental assets.

The next section discusses how the environment is treated in the Australian System of National Accounts and provides a broad overview of the environmental accounting activities undertaken by the ABS to capture certain economic costs to the environment.

Environmental assets in the Australian System of National Accounts

For an asset to be included in the Australian System of national accounts, it must have an identifiable owner, and the owner must be able to derive an economic benefit from holding or using the asset. Environmental assets that could be considered economic assets for the purposes of a national account include subsoil assets, land, forests, water, and fish stocks in open seas that are under the control of an economic agent (often the government).

Environmental assets such as the atmosphere are outside the scope of national accounts, as they do not have an identifiable owner who can derive an economic benefit from their use. This is not to suggest that these assets are of no value. On the contrary, many environmental assets are essential to life itself. Even if they fell within the definition of an economic asset, the valuation techniques available to measure such assets tend to be arbitrary and controversial.

There are four environmental assets identified in the Australian national and sector balance sheets: land, significant subsoil assets, plantation timber and native standing timber available for exploitation. Land valuations are available through administrative sources. Net present value techniques that take into account current production rates, prices, costs, and discount rates are used to value both subsoil and native forest assets. Plantations are included in the balance sheet as inventories because timber growth is controlled by an economic entity. Water and fish stocks have not been included on the Australian national balance sheet to date due to a lack of available data.

2.36 ASSETS(a), Current prices—30 June

	2001	2011	Average annual compound growth rate
	\$b	\$b	%
Financial	493.8	1 253.1	9.8
Buildings and structures	1 674.5	3 495.9	7.6
Machinery and equipment	334.0	552.3	5.2
Other produced	242.6	391.1	4.9
Other non-produced	8.2	11.2	3.2
Environmental	1 524.1	4 420.6	11.2
Total	4 277.1	10 124.1	9.0

(a) System of National Accounts 2008 basis.

Source: Australian System of National Accounts (5204.0).

2.37 ENVIRONMENTAL ASSETS, Current prices—30 June

	2001	2011	Average annual compound growth rate
	\$b	\$b	%
Rural land	113.8	264.6	8.8
Other land	1 205.1	3 520.6	11.3
Oil and gas	98.4	234.9	9.1
Other subsoil	98.1	389.4	14.8
Plantation standing timber	6.8	9.6	3.5
Native standing timber	1.9	1.7	-1.1
Total	1 524.1	4 420.8	11.2

Source: Australian System of National Accounts (5204.0).

2.38 ENVIRONMENTAL ASSETS, Volume/Real(a)—30 June

	2001	2011	Average annual compound growth rate
	\$b	\$b	%
Land	3 711.9	4 108.2	1.0
Subsoil	426.1	592.7	3.4
Plantation standing timber	9.2	8.7	-0.6
Native standing timber	1.7	1.8	0.6
Total	4 148.9	4 711.4	1.3

(a) Reference year for chain volume measures is 2009–10.

Source: Australian System of National Accounts (5204.0).

The Australian national balance sheet recorded \$10,124 billion worth of assets at 30 June 2011, of which \$4,421 billion (44%) were economic environmental assets (table 2.36). The value of environmental assets grew strongly in the period 2001 to 2011, with an average annual compound growth rate of 11%.

Land accounted for 86% of the value of Australia's environmental assets included in the national balance sheet as at June 2011 (table 2.37). The value of land nearly trebled in the period 2001 to 2011 – an average annual compound growth rate of 11%. Subsoil assets, which accounted for

14% of environmental assets in 2011, more than trebled in value over the period. In contrast, plantation standing timber saw relatively modest growth, while the value of native standing timber decreased slightly. Native and plantation standing timber together accounted for less than 1% of the value of Australia's environmental assets in 2011.

The strong growth in the value of Australia's environmental assets was mainly due to rising prices. In the period 2001 to 2011, the average annual compound growth rate in volume (or 'real') terms was only 1.3% (table 2.38).

Measuring depletion

Depletion is defined across a number of accounts within the 2008 System of National Accounts, which defines depletion of natural resources as:

“... depletion of natural resources covers the reduction in the value of deposits of subsoil assets as a result of the physical removal and using up of the assets... .. depletion of natural forests, fish stocks in the open seas and other uncultivated biological resources included in the asset boundary as a result of harvesting, forest clearance, or other use beyond sustainable levels of extraction should be included ...”

Depletion is accounted for in the Other changes in volume accounts, which form an essential component of the national balance sheets. Australian practice is not to publish these estimates directly, although they are included in the annual national balance sheet estimates.

Depletion in an economic sense results because the value of the resource stock has been lowered through its use in a productive activity, and that use has reduced the asset's ability to produce an income stream in the future. In this sense, depletion is analogous to depreciation of produced assets whereby the current value of the stock of fixed assets declines through normal use, wear and tear and foreseen obsolescence.

Physical depletion (or extraction) may not necessarily equate to economic depletion in cases where asset values are low or the resource life is long. While the physical dimension of depletion can be fairly readily observed in practice, its value cannot. This is because the mineral or other

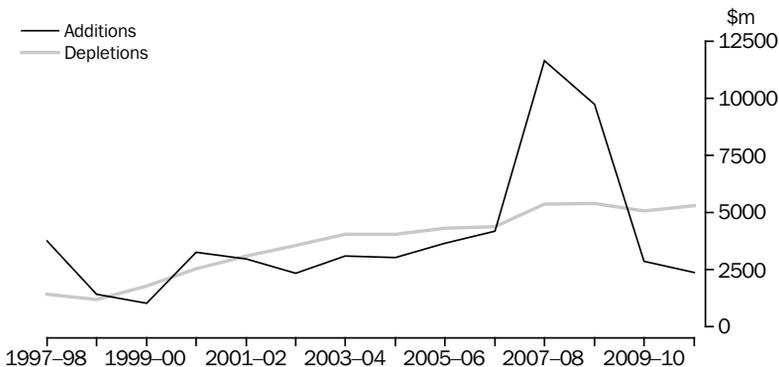
natural resource product is not what is being valued – rather, it is the decline in the value of the mineral asset below the ground or the standing timber in the forest.

Subsoil assets

The economic depletion of minerals and fossil fuels in any one year is the change in the value of the asset between the beginning and end of the year arising purely from the extraction of these natural resources. An ‘addition’ occurs when previously unknown stocks of minerals are discovered and delineated, or previously subeconomic stocks become economic because of changes in prices or mineral extraction techniques. An ‘addition’ can also be negative. For example, if mineral prices fall and previously economic stocks become subeconomic, the owner can no longer derive an economic benefit from the asset so it is excluded from asset values. In the Australian National Accounts, the value of a new discovery is not in itself considered as output or income because it is a ‘gift of nature’. Similarly, reclassification of the economic status of known stocks is considered to be an ‘Other change in volume’, not production or income.

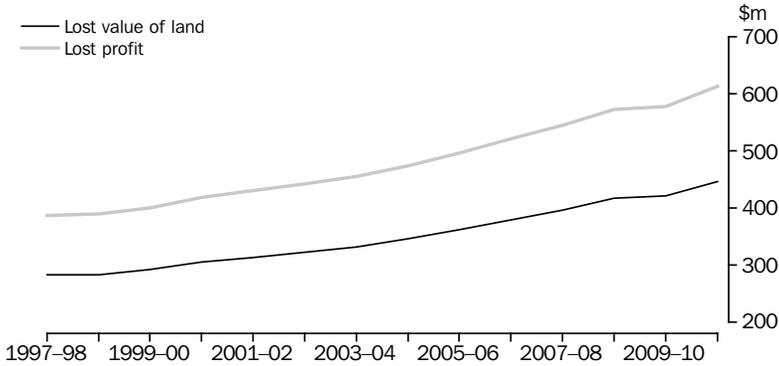
Graph 2.39 shows that economic depletions of minerals and fossil fuels increased at a relatively constant rate, whereas ‘additions’ are erratic as subsoil discoveries can be both substantial and sporadic. Over the life of the additions and depletions estimates, most additions are consistent with depletions, which means that the values of environmental assets are largely driven through price changes.

2.39 SUBSOIL ADDITIONS AND DEPLETIONS



Source: ABS data on request, Australian System of National Accounts.

2.40 LAND DEGRADATION



Source: ABS data on request, Australian System of National Accounts.

Land

If land is used sustainably, it has an infinite life and no adjustment for economic depletion is required. However, where land is being degraded due to economic activity, an adjustment to income for land degradation is applicable. In the context of economic depletion used here, land degradation represents the year-to-year decline in the capital value of land resulting from economic activity after adjusting for price changes.

Changes in the value of land can be determined from data on market values or land rates data. However, data for land values are affected by a host of factors other than changes in productive capacity from the impact of land degradation, including inflation, technological advances and changes in land use due to re-zoning, subdivision and 'lifestyle' considerations.

Two national studies (Kemp and Connell, 2001; National Land and Water Resources Audit, 2002) used different approaches to measure economic losses due to land degradation. Kemp and Connell used a farm survey to estimate the extent of land degradation on farms. Combining data from the survey with land value data, regression techniques were used to estimate that the difference in the capital value of farms with and without degradation was approximately \$14 billion in 1999. This represents the total accumulated value of losses in land value due to degradation. The National Land and Water Resources Audit used models to estimate the 'yield gap', the difference between profits with and without soil degradation. Lost profit at full

equity due to salinity, sodicity and acidity was estimated as \$3 billion in 1996-97.

In concept, these two approaches can be reconciled because the net present value of future lost profits should be equal to the decline in the capital value of land due to degradation. The ABS has used the data from these studies to produce estimates of the incremental effect of land degradation on the value of land and the lost profits from agricultural production each year. The results are presented in graph 2.40.

Forest assets

Forests are renewable biological resources. In the national balance sheet, forests are depicted as two types – old growth native forests and plantations. The valuation of the depletion of renewable assets presents a different set of issues to valuation of non-renewable assets as it may be possible to replace, over time, the part of the asset that is used in the current period. Where a forest is harvested sustainably, no depletion adjustment is required.

Estimates for the economic depletion of native forests are not available. However, given that the value of native forests on the national balance sheet is \$2 billion compared with \$560 billion for subsoil assets, it is expected that depletion will have an insignificant effect on the overall value of natural resources. This is premised on a narrow economic view that does not account for damage to intrinsic non-monetary values such as ecosystem services, biodiversity and aesthetic/recreational values.

Other uncultivated biological resource assets

Depletion in some of the more complex renewable resources is difficult to quantify and is not included in these depletion estimates. These would typically include estimates of any unsustainable extraction or harvesting of fish, native flora and fauna, unsustainable use of ecosystems and any other depletion of uncultivated biological resources. The ABS plans to research some of these estimates in the future.

Applying environmental accounts depletion estimates

There is currently an asymmetry in the Australian National Accounts between the treatment of produced assets, such as buildings, and environmental assets. Depreciation of produced

assets (termed Consumption of fixed capital (COFC) in the national accounts) is deducted to derive various 'net' income measures in the national accounts such as net domestic product (NDP), net national income (NNI) and national net saving (NNS). No similar deduction is made for environmental assets when they are used up or degraded as a result of economic activity. The net measures thus fall short of being sustainable concepts of income, although they are superior to the various 'gross' measures in the national accounts.

International discussion on the treatment of renewable and non-renewable resources in the environmental accounts concluded that reappraisals and discoveries of mineral and energy resources are not the result of productive activities. Non-renewables should be treated as a

2.41 SELECTED NATIONAL ACCOUNTS ESTIMATES ADJUSTED FOR DEPLETION

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Subsoil depletion	4 046	4 325	4 393	5 358	5 414	5 065	5 302
plus							
Land degradation	346	362	380	397	418	421	447
equals							
Gross depletion adjustment	4 392	4 687	4 772	5 755	5 832	5 486	5 749
GDP	920 899	994 803	1 083 060	1 175 949	1 252 218	1 293 380	1 401 168
less							
Consumption of fixed capital	143 826	156 274	170 690	184 124	198 489	207 042	217 294
equals							
NDP	777 073	838 529	912 370	991 825	1 053 729	1 086 338	1 183 874
less							
Gross depletion adjustment	4 392	4 687	4 772	5 755	5 832	5 486	5 749
equals							
Depletion adjusted NDP	772 681	833 842	907 598	986 070	1 047 897	1 080 852	1 178 125
Gross national income	886 835	956 161	1 034 662	1 125 963	1 206 140	1 245 564	1 344 337
less							
Consumption of fixed capital	143 826	156 274	170 690	184 124	198 489	207 042	217 294
equals							
Net national income	743 009	799 887	863 972	941 839	1 007 651	1 038 522	1 127 043
less							
Gross depletion adjustment	4 392	4 687	4 772	5 755	5 832	5 486	5 749
equals							
Depletion adjusted NNI	738 617	795 200	859 200	936 084	1 001 819	1 033 036	1 121 294
Gross saving	195 132	221 993	241 315	266 852	307 964	297 730	337 184
less							
Consumption of fixed capital	143 826	156 274	170 690	184 124	198 489	207 042	217 294
equals							
National net saving	51 306	65 719	70 625	82 728	109 475	90 688	119 890
less							
Gross depletion adjustment	4 392	4 687	4 772	5 755	5 832	5 486	5 749
equals							
Depletion adjusted net national saving	46 914	61 032	65 853	76 973	103 643	85 202	114 141
Depletion adjusted NNS as a % of GDP	5	6	6	7	8	7	8

Source: Australian System of National Accounts, data on request.

volume change to the stock of resources. Subsoil discoveries therefore do not form a part of production and income. Additions to renewable resources need to be offset against the harvest of these resources.

The experimental estimates derived for the value of depletions of subsoil assets and the degradation of agricultural land are indicative of adjustments that could be made to the national accounts in the context of a satellite account and are shown in table 2.41. Depletion adjustments unambiguously lower the net values. If the value of discoveries is included in income in

place of the value of mineral exploration, the net effect of that adjustment can be positive or negative. These estimates will be different to those previously published due to the treatment of subsoil additions as 'Other volume changes to assets' and not as a factor of production or income.

Adjusting the national accounts for depletion will affect growth rates. As table 2.42 shows, the adjustments have impacts of similar magnitude (+/-0.1%) on the growth rates of NDP, NNI and NNS as a proportion of GDP.

2.42 CHANGES IN SELECTED NATIONAL ACCOUNTS ESTIMATES AFTER ADJUSTMENT FOR DEPLETION

	2006-07	2007-08	2008-09	2009-10	2010-11
	%	%	%	%	%
GDP	8.9	8.6	6.5	3.3	8.3
NDP	8.8	8.7	6.2	3.1	9.0
Depletion adjusted NDP	8.8	8.6	6.3	3.1	9.0
Net change in NDP growth	0.0	-0.1	0.1	0.0	0.0
GNI	8.2	8.8	7.1	3.3	7.9
NNI	8.0	9.0	7.0	3.1	8.5
Depletion adjusted NNI	8.0	8.9	7.0	3.1	8.5
Net change in NNI growth	0.0	-0.1	0.0	0.0	0.0
Gross saving	0.0	0.4	1.9	-1.6	1.1
NNS as a % of GDP	-0.1	0.5	1.7	-1.7	1.6
Depletion adjusted NNS as a % GDP	0.0	0.4	1.8	-1.7	1.5
Net change in NNS growth	0.1	-0.1	0.1	0.0	-0.1

Source: Australian System of National Accounts data on request.

Building a land account for Australia

Environmental economic accounting is a method of integrating environmental data with economic and social data. The ABS is evaluating the feasibility of developing a national land account in accordance with international statistical standards. This will provide government and the community with comprehensive, accurate and consistent information to inform debate and monitor environmental policy.

Background

Land, as an asset, represents a major proportion of Australia's national economic value. This value was \$3,614.4 billion in June 2010 (*Australian System of National Accounts – National Balance Sheet*, 5204.0). The land assets in Australia are owned, leased or used by governments, businesses and individuals for a variety of purposes and activities.

Essentially all economic activities involve the use of some land (except for activities such as fishing) and there is a range of economic transactions related to land, either directly or indirectly (as an input to production or as a store of wealth). Administrative arrangements, such as zoning laws, constrain the availability of land for particular purposes.

In Australia, land value is driven by physical characteristics such as location, vegetation cover, accessibility, climate, biodiversity, soils and mineral resources, as well as other factors such as land zoning and man-made improvements applied to the land and surrounds (e.g. proximity to main roads). Use of land can also result in degradation or improvements to the asset over time; for example, mining operations commencing in forested areas may destabilise natural ecosystems even though the land is usually required to be returned to its former status once the mining operations have ceased.

Although there are many sources of data available to quantify the characteristics of land and how these characteristics change over time, the lack of integration of these data has meant that the information has not been fully utilised to support sound policy decisions. In response to this situation, the ABS developed and released *Land Account: Great Barrier Reef Region, Experimental Estimates, 2011* (4609.0.55.001) in order to gain familiarity with

the concepts and methods used to produce land accounts and review the quality and limitations of available data sources.

Internationally, the United Nations Statistical Division has produced a framework, the System of Environmental-Economic Accounts (SEEA), which became an international standard in 2012. Australia already produces annual water and energy accounts consistent with the standard.

What is land accounting?

Land accounting measures the change in the land and its attributes resulting from the impact of human and natural activity. The value of a set of land accounts is the ability to measure these attributes by examining stocks at different points in time to support policy around sustainable economic and environmental management.

A land account integrates information already held by different levels of government in order to:

- enable the relationships between the land and the economy to be identified, analysed and understood
- present data using a framework that is consistent with broader economic data, such as the System of National Accounts (SNA)
- examine the effectiveness or efficiency of private and public environmental protection and natural resource management expenditures
- support more targeted policy development by showing how land is used by different parts of the economy and how different economic activities may deplete or degrade the productive capacity of land
- show how land use and land cover affect the availability of water

- provide a system into which monetary valuations of land assets and environmental-related flows can be incorporated with physical data
- access the monetary implications of environmental actions
- identify critical gaps and deficiencies in land data, and
- identify which industries currently own or manage land that is of significance to carbon storage and exchange.

Benefits of land accounting

A land account is a powerful decision-making tool that can be used for planning by industry, government and the community. It can be used to inform debate on a wide range of issues as shown in the following examples.

Example 1

With Australia's population projected to be between 31 and 43 million people by 2056 (*Population Projections, Australia 2006 to 2101*, 3222.0) and further impacts from climate change forecast, land use changes such as the loss of agricultural land to urban growth or the clearance of native forests for agriculture will become a key policy and planning issue. Land accounts will provide information for policy-makers to make informed decisions about the economic and environmental impact of the location of new suburbs, towns and cities.

Example 2

Land accounts will present the ownership of land (in both dollars and hectares) broken down by industry and region and importantly, track changes over time. This information will allow the comparison between different regions across time to understand the impacts and effectiveness of government policies and investments as well as assessing the impact these have on environmental trends.

Example 3

Responding quickly and effectively to natural disasters is an important role of government, especially as these may become more frequent with the potential impact of climate change. Information from a land account will show a range of information for small regional levels

by integrating ABS data with information from other government agencies. From a single source, information will be available on Australia's society (e.g. household composition and demographics, income), economy (e.g. industry of businesses, land use, land value, number of people employed, agricultural output, business income) and environment (e.g. land cover, forest and vegetation cover).

Land account outputs

A land account consists of a series of tables, maps and graphs that show the economic, social and environmental interactions with land measured in both hectares and in dollar terms.

To produce the base information for a land account, data from the Valuers-General and the ABS Register of Businesses are attributed to a land parcel. The resultant file is integrated with data from ABS collections and information from other agencies. For the Great Barrier Reef land account, information was sourced from the Bureau of Meteorology, Geoscience Australia, the Australian Bureau of Agriculture and Resource Economics and Sciences, the Department of Climate Change and Energy Efficiency and the Department of Sustainability, Environment, Water, Population and Communities. Over time, it is expected that more data sources will be added to further enrich the output.

As well as tables, the Great Barrier Reef land account includes a Google Earth® interface that presents a 'flyover' view of the Great Barrier Reef catchment regions, divided into small statistical areas, ranging from city blocks to sparse agricultural and remote communities. Data windows present more than 70 attributes for each of these land areas across the themes of:

- boundary information, population and business counts
- rateable value and land use, and dynamic land cover, and
- fire, temperature and rainfall.

The release includes ESRI® Geodatabase and Mapinfo® versions that can be downloaded from the ABS website and used as a socio-economic layer in a GIS system.

Land management practices in the Great Barrier Reef catchment area

The Great Barrier Reef is one of the world's most significant natural assets. It makes a major contribution to Australia's social, economic and environmental wellbeing.

To support the sustainable management of the Great Barrier Reef, the Australian Government is working with land managers in the catchments that discharge into the reef in order to increase the adoption of management practices that will improve water quality. The primary purpose of the 2008–09 Survey of Land Management Practices in the Great Barrier Reef Catchments was to provide benchmark data on these practices for each of the 28 river catchments draining into the Great Barrier Reef (GBR).

This information is one component in the evidence framework used to assess progress towards long-term improvement in reef condition. It complements other information on land management practices collected from industry, research organisations and regional bodies, along with biophysical data on water quality.

The Survey of Land Management Practices in the Great Barrier Reef Catchments is the third ABS survey to collect information using a spatial, land-based area frame.

In the methodology underpinning the survey, the unit surveyed is a physical land holding that has been aggregated from land parcels under common ownership or management within an individual catchment. The usual approach used in ABS surveys of agricultural or natural resource management practices is to collect information directly from agricultural businesses and attribute the information collected to a specific area.

The advantage of this methodology is that it can be used as a spatial building block, with the land-based area frame and methodology used to integrate other information related to that piece of land. It also supports a diversity of spatial outputs, allowing the data to be presented in different ways.

The survey collected information from the land owner and/or manager of the holding on a range of land management practices applied to agricultural land. These were: soil testing for nutrients, fertiliser use, chemical use (including weed, pest and disease control), riparian management, surface water management and irrigation water management. Information was also collected on practices specific to particular agricultural activities.

Land in the Great Barrier Reef catchments

The 28 catchments draining into the Great Barrier Reef lagoon (the body of water between the coastline and the reef) cover a total land area of over 38 million hectares across five Natural Resource Management (NRM) Regions. The land area covered stretches from the Wet Tropics World Heritage Area in the north to the Sunshine Coast in the south. Of this area, approximately 28.5 million hectares has been included in this survey, covering land used mainly for agricultural production by holdings with a predominant activity of sugar cane, horticulture, broadacre cropping or beef cattle grazing.

The outputs by land size were produced to test the hypothesis that land owners and managers had a different take-up rate of land management practices depending on the size of the holding.

The outputs by sub catchment have been produced to demonstrate to users of these data that it is possible to produce data at a relatively fine geographic level.

Land for crops

Of the 17,104 holdings in the 28 GBR catchments, there were 8,264 holdings reporting that they had land that was mainly used for crops. This included land used for sugar cane, grains, vegetables, fruit, nuts, cotton, grapevines and nurseries. It also included holdings with land that was left fallow between crops.

The area of land used for crops was categorised into three size groupings: small (less than 50 hectares, 3,574 holdings), medium (50 to 150 hectares, 2,987 holdings) and large (greater than 150 hectares, 1,703 holdings).

The survey results show that holdings of different sizes differed in take-up of a given land management practice. Generally, larger holdings were more likely to adopt a given land management practice than smaller holdings.

When planting and applying chemicals, 59% of the large holdings avoided this activity in periods of high rainfall risk or irrigation schedule. Only 28% of the small holdings and 36% of medium-sized holdings with cropping land avoided this activity during such periods. Proportionally more of the larger holdings (39%) changed their farm layout to industry best practice to avoid 'off-farm' chemical loss than the small and medium sized holdings (20% and 36% respectively).

Over half (52%) of the large holdings used contour banks, diversion banks or constructed waterways to manage surface water run-off. Less than a third (30%) of the small holdings

and 39% of the medium-sized holdings undertook this practice.

Using mechanical cultivation as an alternative control method for controlling weeds, pests or diseases was a practice undertaken by 70% of the large holdings, 67% of the medium-sized holdings and 42% of the small-sized holdings. Proportionally more of the larger holdings (43%) rotated their chemical groups to avoid resistance than the medium and small holdings (29% and 26% respectively). Similarly, a higher proportion of the large holdings (37%) varied the selection of their crops or breeds as an alternative control method for controlling weeds, pests or diseases than the medium and small holdings (26% and 17% respectively).

Although relatively small in number, 3% (111) of small holdings used the National Standard for Organic and Bio-dynamic produce compared to 2% (63) of the medium-sized holdings and 2% (34) of the large-sized holdings.

Table S2.1 provides additional data relating to land used for crops.

S2.1 HOLDINGS IN THE GREAT BARRIER REEF CATCHMENT USING LAND FOR CROPS(a)

		HOLDINGS WITH LAND AREA USED FOR CROPS			Total
		Less than 50 ha	50–150 ha	150 ha or more	
Number of holdings	no.	3 574	2 987	1 703	8 264
Surface water run-off management practices					
Recycling pits or sediment dams	%	11.5	27.8	36.3	22.5
Furrow management(b)	%	18.4	23.0	27.8	22.0
Grassed or rubble spoon drains	%	27.9	39.6	41.2	34.9
Contour banks, diversion banks or constructed waterways Maintained at least 40% ground cover in riparian areas and/or constructed waterways	%	29.7	38.7	52.3	37.6
Ensured at least 40% ground cover remained on paddocks at the end of the 2008 dry season	%	31.8	34.7	39.9	34.5
Other water run-off practices	%	40.1	38.7	44.9	40.6
Water run-off practices not required on the holding	%	12.9	13.3	17.7	14.0
Holdings not responding to this question	%	14.0	9.1	2.4	9.8
		7.2	7.4	4.7	6.8

(a) Including sugar cane, grains, vegetables, fruit, nuts, cotton, grapevines and nurseries.

(b) Including banking ends, ripping and modifying furrow shapes.

Source: *Land Management Practices in the Great Barrier Reef Catchments, Experimental Estimates, 2008–09* (4619.0.55.002).

Land for grazing

Of the 17,104 holdings in the 28 GBR catchments, there were 12,878 holdings reporting that they had land that was used for grazing (table S2.2). This comprised land used for grazing on improved pastures as well as grazing on other land. The other land included natural pastures and grasslands, rangelands, woodland and shrubland, forested areas, riparian areas and swamps and wetlands.

The area of land used for grazing was categorised into three size groupings: small (less than 200 hectares, 6,641 holdings), medium (200 to 2,000 hectares, 3,921 holdings) and large (greater than 2,000 hectares, 2,316 holdings).

The survey results show that holdings with different areas of grazing land did not demonstrate appreciable differences in the take-up of specific land management practices. Moderate differences were apparent for some specific practices.

There were proportionally more holdings of small sizes (12%) using recycling pits or sediment dams to manage surface water run-off than medium-sized holdings (11%) or large holdings (8%). Having grassed or

rubble spoon drains to manage surface water run-off was utilised by 16% of small holdings, 8% of medium-sized holdings and 6% of large holdings.

Nearly 60% of large holdings ensured that they had at least a 40% ground cover remaining on their paddocks at the end of the 2008 dry season. By way of comparison, 42% of small holdings and 48% of medium sized holdings had at least a 40% ground cover remaining.

Holdings in the four Burnett River sub catchments

Table S2.3 shows key findings for the four Burnett River sub catchments. The Burnett River catchment was used to demonstrate the versatility of using a physical land holding (the cadastral parcel) in the survey development. Because any holding selected in the survey could be assigned to one of the four sub catchments, data for the four sub catchments could be produced, even though the original sample was not designed to produce data at the sub catchment level.

There were 3,587 holdings in the Burnett River catchment. Of these, 1,067 holdings were located in the Barker and Barambah Creeks sub catchment, 806 holdings in the Boyne and

S2.2 HOLDINGS IN THE GREAT BARRIER REEF CATCHMENT USING LAND FOR GRAZING(a)

		HOLDINGS WITH LAND AREA USED FOR GRAZING			Total
		Less than 200 ha	200–2000 ha	2000 ha or more	
Number of holdings	no.	6 641	3 921	2 316	12 878
Riparian management practices					
Actively controlled stock access to riparian areas	%	25.8	20.8	30.7	25.2
Riparian areas fully fenced off and alternative water points established	%	14.1	12.5	16.8	14.1
Cattle ramps constructed into creek and river banks to minimise damage	%	4.1	3.7	3.9	3.9
No rivers or creeks on the holding	%	20.7	11.8	8.5	15.8
Did not have any of the identified management practices	%	47.9	61.8	56.4	53.7

(a) Comprises grazing on improved pastures and grazing on other land (including natural pastures/grasslands, rangelands, woodland/shrubland, forested areas, riparian areas and swampland/wetland).

Source: *Land Management Practices in the Great Barrier Reef Catchments, Experimental Estimates, 2008–09* (4619.0.55.002).

S2.3 HOLDINGS IN THE FOUR SUB CATCHMENTS WITHIN THE BURNETT RIVER CATCHMENT

		<i>Barker and Barambah Creeks sub catchment</i>	<i>Boyne and Auburn Rivers sub catchment</i>	<i>Lower Burnett River sub catchment</i>	<i>Upper Burnett River sub catchment</i>	<i>Total holdings in the catchment</i>
Number of holdings						
All holdings	no.	1 067	806	1 191	523	3 587
Holdings growing Sugar cane	no.	..	..	258	..	258
Holdings undertaking Horticulture	no.	75	50	225	1	351
Holdings with Broadacre crops	no.	359	182	162	120	823
Holdings with Beef cattle	no.	960	745	874	485	3 064
Use of alternative control methods for weeds, pests or diseases – chemical						
Rotated chemical groups to avoid resistance	%	8.5	14.1	20.3	17.1	14.9
Used chemicals the holding considered to be more environmentally friendly	%	17.3	21.8	22.0	22.9	20.7
Use of alternative control methods for weeds, pests or diseases – mechanical						
Cultivation	%	30.0	22.6	31.7	29.7	28.8
Slashing	%	47.1	33.4	48.4	29.8	41.9
Mulching or matting	%	16.8	10.8	17.2	14.8	15.3
Use of alternative control methods for weeds, pests or diseases – other						
Biological controls (a)	%	3.3	5.2	7.2	2.9	5.0
Practising good farm hygiene	%	29.2	29.1	35.4	46.5	33.8
Variety (crop or breed) selection	%	15.9	9.9	10.6	10.9	12.0
Break cropping	%	5.6	6.4	13.8	11.9	9.4
Controlled burning	%	16.8	14.8	21.8	29.4	19.8
Used NSOBP(b)	%	1.1	0.3	1.0	0.8	0.8
Did not use any of the listed alternative control methods	%	9.3	20.0	8.2	6.5	10.9
Holdings not responding to the question on alternative control methods	%	14.2	23.4	14.7	21.6	17.5

.. not applicable

(a) Introducing parasites, predators or pathogens as control methods.

(b) National Standard for Organic and Bio-dynamic produce.

Source: *Land Management Practices in the Great Barrier Reef Catchments, Experimental Estimates, 2008–09* (4619.0.55.002).

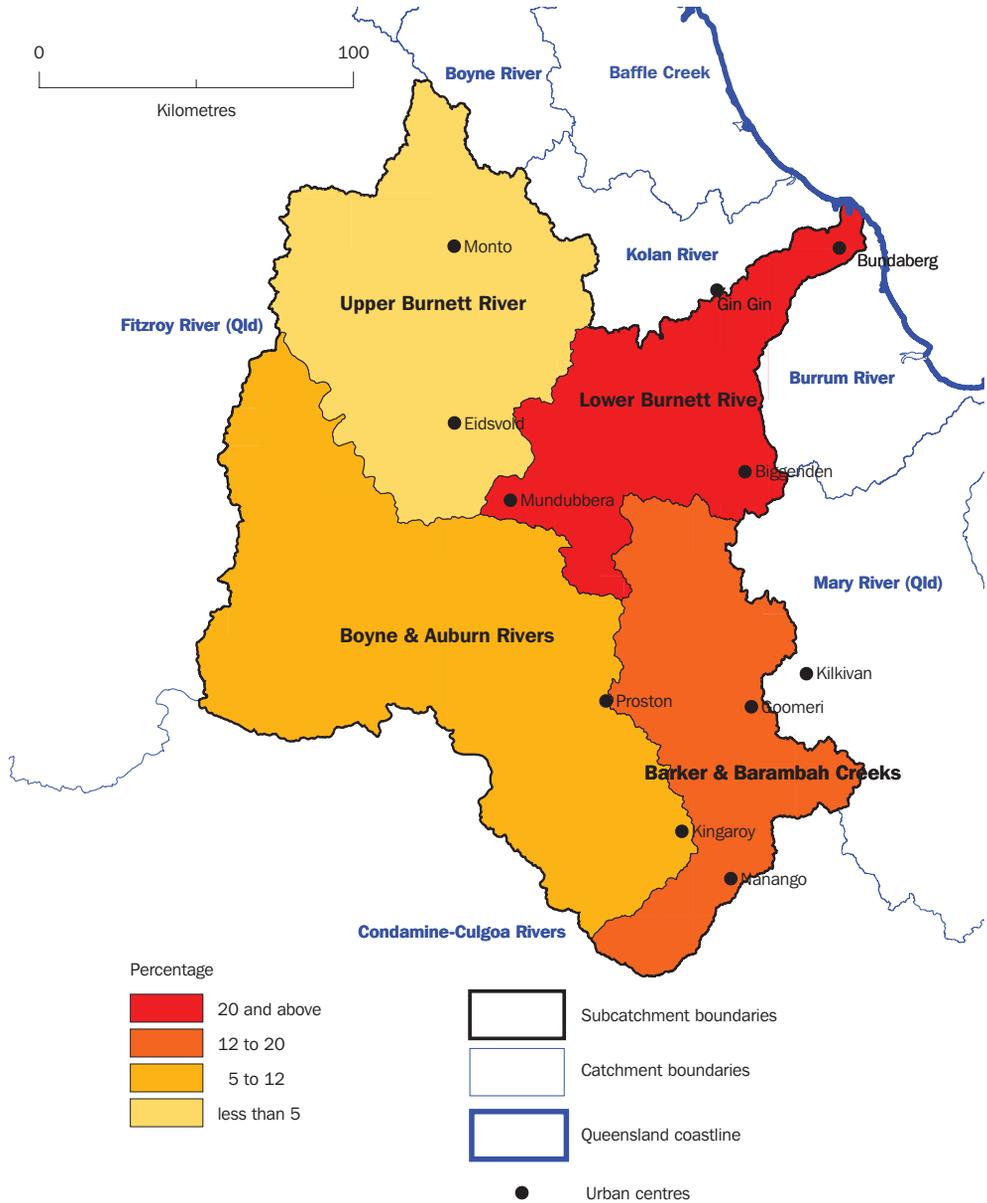
Auburn Rivers sub catchment, 1,191 holdings in the Lower Burnett River sub catchment and 523 holdings in the Upper Burnett River sub catchment.

Map S2.4 shows a spatial representation of holdings in the Burnett River catchment according to the percentage that considered nutrients introduced by fertilising prior to applying fertiliser.

Map S2.5 shows a spatial representation of holdings in the Burnett River catchment according to the percentage that rotated chemical groups to control weeds, pests or diseases.

More detailed information can be accessed on the ABS web site – catalogue numbers 4619.0.55.001 and 4619.0.55.002.

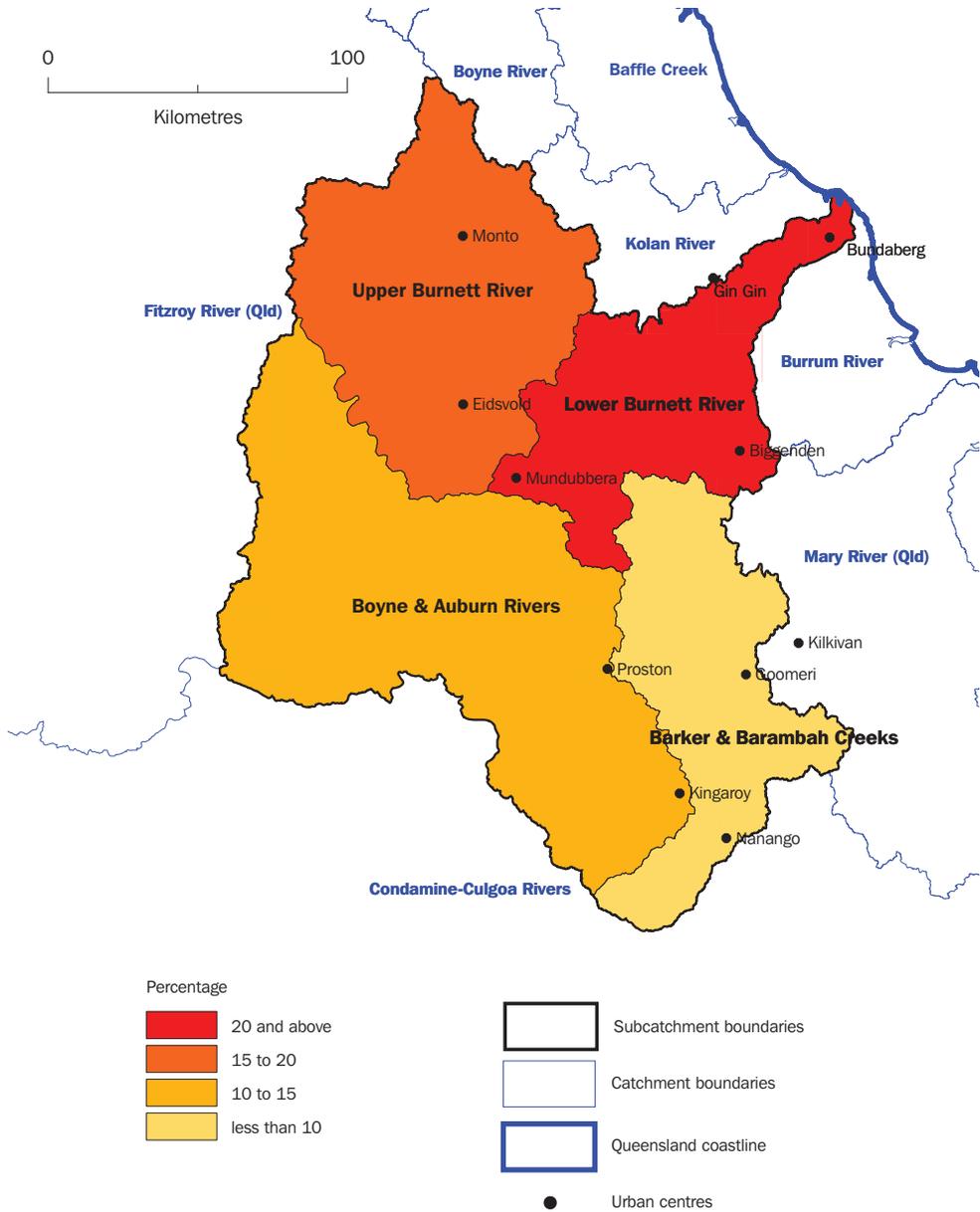
S2.4 HOLDINGS THAT CONSIDERED NUTRIENTS INTRODUCED BY FERTILISING PRIOR TO APPLYING FERTILISER



@ Commonwealth of Australia, 2010

Based on *Land Management Practices in the Great Barrier Reef Catchments, Final* (4619.0.55.001).
 Source: Geographical layers Department of Resource Management Qld.

S2.5 HOLDINGS THAT ROTATED CHEMICAL GROUPS TO CONTROL WEEDS, PESTS OR DISEASES



@ Commonwealth of Australia, 2010

Based on *Land Management Practices in the Great Barrier Reef Catchments, Final* (4619.0.55.001).

Source: Geographical layers Department of Resource Management Qld.

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ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES

Aboriginal and Torres Strait Islander peoples occupy a unique and important place in Australia's society and culture. They are the original inhabitants of the Australian continent and nearby Torres Strait Islands, and their cultures are amongst the oldest in the world. Aboriginal communities in Australia are diverse, with many cultures, customs and languages. Torres Strait Islander peoples also have their own distinct identity and culture.

This chapter is new to *Year Book Australia* and presents information about Aboriginal and Torres Strait Islander peoples across nine broad domains of wellbeing, as identified in the *ABS Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islander Peoples, 2010* (4703.0). These nine domains are of specific importance to the Aboriginal and Torres Strait Islander population, and may differ from concepts of wellbeing seen as relevant to the wider Australian population.

The responsibility for implementation and overall co-ordination of Australian Government policy and programs for Aboriginal and Torres Strait Islander peoples lies with the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs. A number of other government departments also have responsibility for specific programs.

The 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) is the primary data source for this chapter, with supplementary data from a number of other data collections. In the 2008 NATSISS, information about the characteristics of Aboriginal and Torres Strait Islander people was self-reported, or in the case of children aged 0–14 years (and a small number of 15–17 year olds), was collected from a parent, guardian or other household member on behalf of the child. Similarly, information about the household was collected from a nominated household spokesperson, on behalf of household members. In Australian Bureau of Statistics surveys, Aboriginal and Torres Strait Islander respondents are self-identified, or have been identified as being of Aboriginal and Torres Strait Islander origin by a member of their household. Unless otherwise stated, all differences between groups (for instance, remote and non-remote) are statistically significant at the 5% level.

This chapter contains two special articles, *Cherbourg State School Language for Life project*, and *Aboriginal and Torres Strait Islander community co-operatives and credit unions*.

Further information about Aboriginal and Torres Strait Islander peoples can be found in other chapters of *Year Book Australia*, including 4 *Government*, 6 *Defence*, 7 *Population*, 9 *Income and welfare*, 10 *Housing*, 11 *Health*, 12 *Education and training* and 13 *Crime and justice*.

The feature article on the *National Year of Reading 2012* discusses Aboriginal and Torres Strait Islander people's literacy.

Population

The final estimated resident Aboriginal and Torres Strait Islander population, at 30 June 2006, was 517,000 people or 2.5% of the total Australian population. The majority (90%) were of Aboriginal origin; 6% were of Torres Strait Islander origin, and 4% were of both Aboriginal and Torres Strait Islander origin. Estimates of the size and age structure of the Aboriginal and Torres Strait Islander population are based on 2006 census data adjusted for under-count as well as other factors, for example, where the indigenous status of a person was not stated.

Where people live

Of the total Aboriginal and Torres Strait Islander population at 30 June 2006, 152,700 (or 30%) lived in New South Wales, 144,900 (or 28%) in Queensland, 71,000 (or 14%) in Western Australia and 64,000 (or 12%) in the Northern Territory. The Northern Territory had the largest proportion of its population who were Aboriginal and Torres Strait Islander (30%), compared with 4% or less for all states and the Australian Capital Territory. Three-quarters (75%) of Aboriginal and Torres Strait Islander people were living in major cities or regional areas in 2006, with the remaining 25% living in remote and very remote areas (graph 3.1).

A young population

The Aboriginal and Torres Strait Islander population is a relatively young population, with a median age of 21 years, compared with 37 years for the non-Indigenous population. The younger age structure of the Aboriginal and Torres Strait

Islander population is shown in graph 3.2. In 2006, more than one-third (38%) of Aboriginal and Torres Strait Islander people were aged less than 15 years, compared with 19% of non-Indigenous people. People aged 65 years and over comprised 3% of the Aboriginal and Torres Strait Islander population and 13% of the non-Indigenous population.

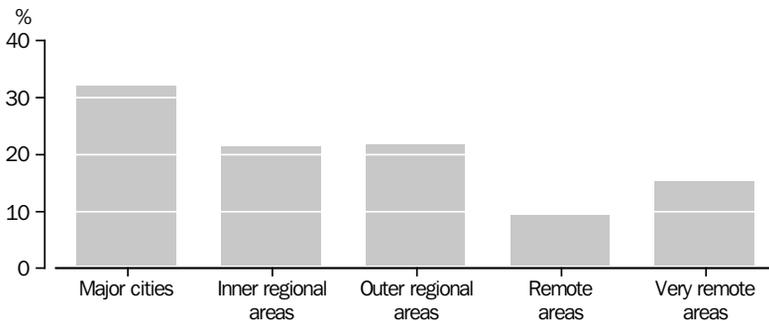
Fertility rates

The age structure of the Aboriginal and Torres Strait Islander population reflects higher fertility rates, and deaths occurring at younger ages. The fertility rate for Aboriginal and Torres Strait Islander women has fallen in recent decades, from around 5.80 babies per woman in the 1960s to 2.40 babies per woman in 2007. It has since risen to 2.57 babies per woman in 2010 and is higher than the fertility rate for the total Australian female population (1.89 babies per woman in 2010) due, in part, to higher fertility at younger ages. In 2010, three-quarters (75%) of births to Aboriginal and Torres Strait Islander mothers were to women aged less than 30 years, compared with under half (45%) of births to all Australian women.

Life expectancy at birth

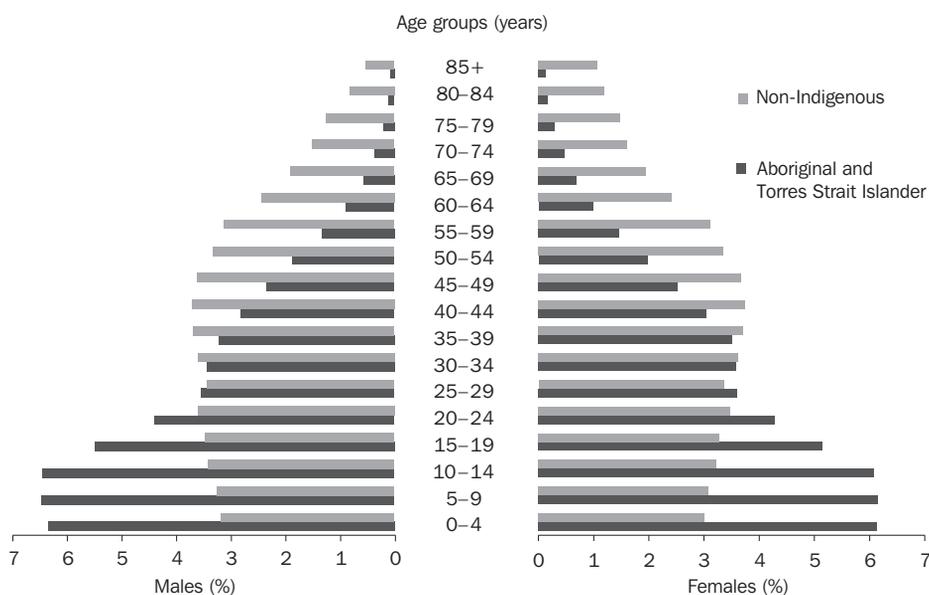
In the period 2005–2007, life expectancy at birth was estimated to be 67.2 years for Aboriginal and Torres Strait Islander males, around 12 years less than life expectancy at birth for non-Indigenous males (78.7 years). Similarly, the estimated life expectancy at birth for Aboriginal and Torres Strait Islander females was 72.9 years, around 10 years less than life expectancy at birth for non-Indigenous females (82.6 years).

**3.1 ESTIMATED RESIDENT POPULATION,
Aboriginal and Torres Strait Islander people—30 JUNE 2006**



Source: *Experimental Estimates of Aboriginal and Torres Strait Islander Australians, June 2006* (3238.0.55.001).

3.2 AGE STRUCTURE OF THE ABORIGINAL AND TORRES STRAIT ISLANDER AND NON-INDIGENOUS POPULATIONS JUNE 2006(a)



(a) Final estimates based on the 2006 Census of Population and Housing.

Source: *Australian Demographic Statistics (3101.0)*.

More information on the Aboriginal and Torres Strait Islander population can be found in chapter 7, *Population*.

Culture, heritage and leisure

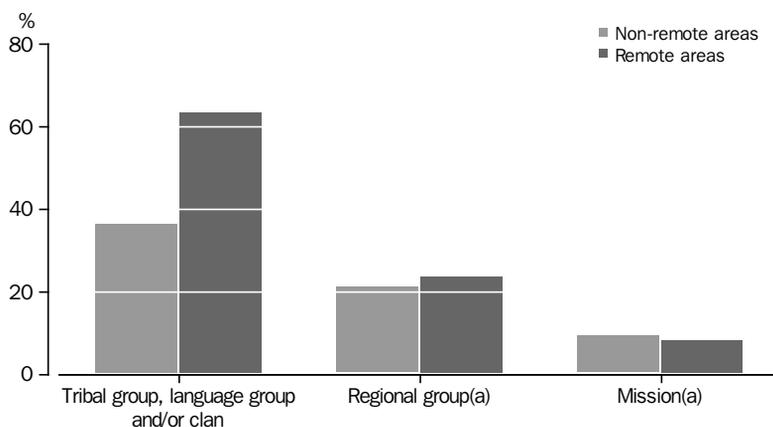
Connections with cultural groups and the land

Identification with culture can form an important part of a person's identity, and may contribute to high self-esteem and feelings of wellbeing. According to the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS), just over half (57%) of the 480,500 Aboriginal and Torres Strait Islander people aged three years and over identified with a cultural group (meaning a tribal or language group, a clan, a mission or a regional group). Identification with a cultural group was more common in remote areas than in non-remote areas (77% compared with 51%), and among people aged 25 years and over (67%) than among those aged 3–24 years (49%).

Nationally, one-third (33%) of Aboriginal and Torres Strait Islander people identified with a tribal group, and almost one-quarter (22%) identified with a regional group. A further one in six people identified with a language group (17%) or clan (16%), and 9% associated themselves with a mission. Similar proportions of Aboriginal and Torres Strait Islander people in non-remote and remote areas identified with a mission or regional group. However associations with a tribal group, language group or clan were more common in remote areas than in non-remote areas (63% compared with 37%) (graph 3.3).

Connection to land and sea is a vital part of the culture and heritage of Aboriginal and Torres Strait Islander peoples. In 2008, almost two-thirds (64%) of Aboriginal and Torres Strait Islander people aged three years and over recognised an area as their homelands or traditional country (i.e. an area of land with which they have ancestral and/or cultural links). Recognition of homelands was more common in remote areas than in non-remote areas, and among older people than younger people.

3.3 TYPE OF CULTURAL GROUP IDENTIFIES WITH Aboriginal and Torres Strait Islander people aged 3 years and over



(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Of the 234,400 Aboriginal and Torres Strait Islander people aged 15 years and over who recognised an area as their homelands, just over one-third (35% or 82,600) were living in their homelands, an increase from 2002 (31% or 61,700). A higher proportion of Aboriginal and Torres Strait Islander people in remote areas than in non-remote areas were living in their homelands in 2008 (52% compared with 28%). An estimated 151,800 Aboriginal and Torres Strait Islander people recognised their homelands, but did not live there. A small proportion (5%) of people who recognised homelands visited them at least once a month, 15% said they visited them several times a year, and 11% said they visited them once a year. Almost one-third (30%) said they visited their homelands less frequently than once a year.

Aboriginal and Torres Strait Islander language speakers

Language is not only a form of communication, it is also a way of expressing and maintaining culture, knowledge and identity. Aboriginal and Torres Strait Islander languages convey unique meanings and are central to the survival of cultural knowledge (Australian Institute of Aboriginal and Torres Strait Islander Studies, *National Indigenous Languages Survey Report 2005*).

In 2008, one in ten (10% or 50,100) Aboriginal and Torres Strait Islander people aged three years and over spoke an Aboriginal or Torres Strait Islander language as their main language at home. A further 7% could speak at least one Aboriginal or Torres Strait Islander language, but did not report it as being the main language used at home (table 3.4). A further 21% of people spoke some words of an Aboriginal or Torres Strait Islander language and 62% did not report speaking an Aboriginal or Torres Strait Islander language. Around one in five Aboriginal and Torres Strait Islander people (19%) said that they could understand an Aboriginal or Torres Strait Islander language, including 17% who were language speakers. A further 32% said that they understood some Aboriginal or Torres Strait Islander words, including 21% who reported being able to speak a few words.

People living in remote areas were far more likely than those living in non-remote areas to speak an Aboriginal or Torres Strait Islander language (49% compared with 7%) and to understand an Aboriginal or Torres Strait Islander language (51% compared with 8%). Children and youth were less likely than people aged 25 years and over to speak an Aboriginal and Torres Strait Islander language (13% compared with 22%) and to understand an Aboriginal and/or Torres Strait Islander language (14% compared with 24%).

3.4 LANGUAGE SKILLS, Aboriginal and Torres Strait Islander people aged 3 years and over—2008

	Non-remote areas	Remote areas	Australia
	%	%	%
Aboriginal/Torres Strait Islander language is main language spoken at home	1.2	38.8	10.4
English/other language is main language spoken at home			
Speaks an Aboriginal/Torres Strait Islander language	5.5	10.5	6.7
Speaks only some Aboriginal/Torres Strait Islander words(a)	21.3	20.0	21.0
Does not speak an Aboriginal/Torres Strait Islander language	71.8	30.7	61.7
<i>Total for whom English/other language is main language spoken at home</i>	98.7	61.2	89.5
Understands an Aboriginal/Torres Strait Islander language	8.3	51.3	18.9
Understands only some Aboriginal/Torres Strait Islander words	33.0	27.5	31.7
	no.	no.	no.
All persons aged 3 years and over(b)	362 500	117 900	480 500

(a) Difference between non-remote and remote rate is not statistically significant.

(b) Includes children aged 3–5 years who were not speaking yet.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Of the 37,600 people aged 15 years and over who spoke an Aboriginal or Torres Strait Islander language as their main language at home, 69% (26,000) had no difficulty communicating with English speakers.

Learning an Aboriginal or Torres Strait Islander language

In 2008, an estimated 29,400 (21%) Aboriginal and Torres Strait Islander children aged 3–14 years who did not already speak an Aboriginal or Torres Strait Islander language as their main language at home, were learning to speak one. A considerable proportion of these children had the opportunity to learn an Aboriginal or Torres Strait Islander language at school (41%) and/or were being taught by a parent (40%) or other relative (including siblings) (36%). Among Aboriginal and Torres Strait Islander people aged 15 years and over, both the proportion and number of people who were learning an Aboriginal or Torres Strait Islander language were lower (7% or 21,500). For this group, the most common teachers of language were a relative other than a parent (40%), a parent (24%) and/or a community elder (19%).

Aboriginal and Torres Strait Islander people aged 15 years and over in remote areas were more than twice as likely as those in non-remote areas to be learning an Aboriginal or Torres Strait Islander language (13% compared with 6%), with the same pattern evident for children aged 3–14 years (41% compared with 17%).

Traditional knowledge and cultural education

Cultural education occurs in a number of ways, such as elders passing down traditional knowledge to younger generations and through school-based cultural education.

Spending time with elders

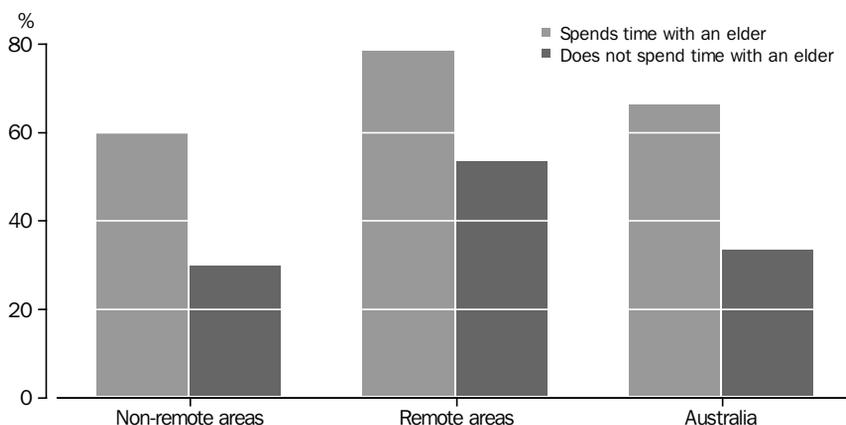
In 2008, an estimated 65,000 Aboriginal and Torres Strait Islander children aged 3–14 years (42%) were spending some time with an Aboriginal or Torres Strait Islander leader or elder – 31% at least one day a week and a further 12% less frequently. Children living in remote areas were much more likely than those in non-remote areas to have been spending time with an elder at least one day a week (49% compared with 25%).

Children who were spending some time with an elder were more likely to identify with a cultural group such as a clan, tribal or language group than children who were not spending any time with an elder (66% compared with 33%) (graph 3.5). Contact with an elder also increased the likelihood of children speaking an Aboriginal or Torres Strait Islander language (21% compared with 7% who had not spent time with an elder).

Learning about Aboriginal and Torres Strait Islander cultures at school

In 2008, there were an estimated 124,500 Aboriginal and Torres Strait Islander children aged 5–14 years attending school. Just over two-thirds (67%) of these children were being taught about Aboriginal and Torres Strait Islander cultures

3.5 IDENTIFIES WITH A CULTURAL GROUP(a), By whether spends time with an elder Aboriginal and Torres Strait Islander children aged 3–14 years



(a) Clan, tribal, language, regional group or mission.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

at school. These children were more likely to identify with a cultural group (54% compared with 42% who were not being taught about Aboriginal and Torres Strait Islander cultures at school). This was the case in both remote and non-remote areas.

A smaller proportion of people aged 15 years and over (45%) reported that they had been taught about Aboriginal and Torres Strait Islander culture at school or as part of further studies. Aboriginal and Torres Strait Islander youth aged 15–24 years were more likely than those aged 25 years and over to report having been taught about this at school or during further studies (64% compared with 37%). In 2008, almost three-quarters (74% or 48,800) of youth who had received Aboriginal and Torres Strait Islander cultural education learned about it in secondary school, and 62% in primary school. Among people aged 25 years and over, almost half had learned about Aboriginal and Torres Strait Islander cultures in primary school (49% or 40,500) and 48% in secondary school. One in six (17%) people aged 25 years and over learned about it during their university or other higher education, and one in seven (14%), at TAFE.

Involvement in cultural events and activities

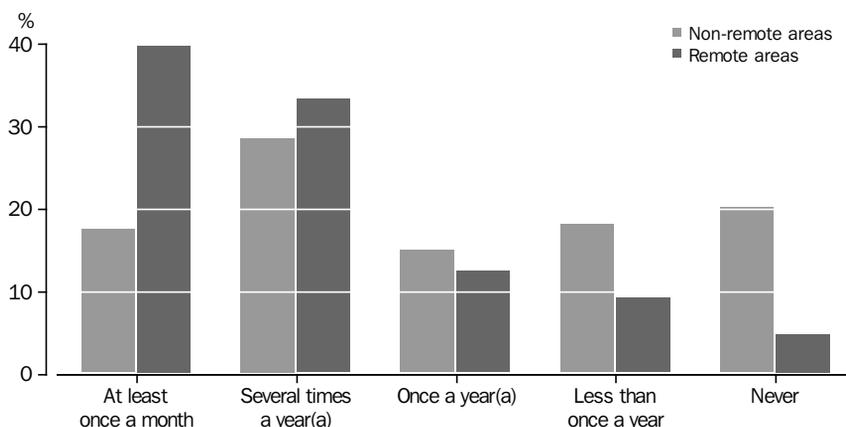
Involvement in cultural events and activities is a way of celebrating, maintaining and building on cultural heritage. In 2008, almost two-

thirds (65%) of Aboriginal and Torres Strait Islander people aged three years and over had been involved in one or more cultural events, ceremonies or Aboriginal and Torres Strait Islander organisations in the 12 months before the survey, with higher overall participation rates in remote areas than in non-remote areas (81% compared with 60%).

The types of cultural events and activities that people participated in varied according to remoteness. Aboriginal and Torres Strait Islander people in remote areas were more likely than those in non-remote areas to have been involved in a ceremony (including funerals/sorry business) (61% compared with 31%), to have attended a sports carnival (46% compared with 22%), and/or an arts, craft or music ceremony or festival (33% compared with 24%). In contrast, a higher proportion of people living in non-remote areas than in remote areas had been involved with NAIDOC week activities (43% compared with 37%) and/or an Aboriginal and Torres Strait Islander organisation (16% compared with 12%) in the 12 months before the survey.

Almost all (99%) Aboriginal and Torres Strait Islander people aged 15 years and over said that they would like to participate in cultural events and do other cultural activities such as fishing, hunting and performing Aboriginal or Torres Strait Islander music and dance. Of those who wanted to participate in cultural events and activities (322,300

3.6 HOW OFTEN ATTENDS CULTURAL EVENTS AND ACTIVITIES Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

people), 23% did so at least once a month, while 30% did so several times a year and 15% once a year. A further 16% participated less frequently than once a year, and 16% said they never attend. Aboriginal and Torres Strait Islander people in remote areas were more than twice as likely as people in non-remote areas to have participated in cultural events and activities at least once a month (40% compared with 18%) (graph 3.6).

Just over two-thirds (69%) of Aboriginal and Torres Strait Islander people aged 15 years and over said that they were able to participate in cultural events and activities as often as they would like (79% in remote areas and 66% in non-remote areas). An estimated 99,600 Aboriginal and Torres Strait Islander people (31%) were unable to participate in cultural events and activities as often as they would like. Just over one-quarter of them (29%) said that it was because the events or activities were too far away, 18% cited their caring commitments, and 16% said that they could not afford to attend. People living in remote areas were more likely than those living in non-remote areas to have reported that cultural events or activities were too far away (38% compared with 27%).

Teachers of cultural activities

In 2008, Aboriginal and Torres Strait Islander children aged 3–14 years most commonly had

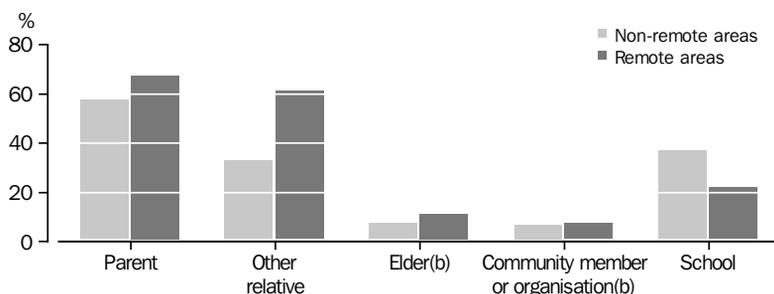
parents teaching them cultural activities such as fishing, hunting and performing Aboriginal or Torres Strait Islander music and dance (60%), followed by other relatives (including siblings) (41%) and teachers at school (33%).

A higher proportion of children in remote areas, than in non-remote areas, were being taught about cultural activities by other relatives (61% compared with 33%) (graph 3.7). In contrast, children in non-remote areas were more likely than those in remote areas to have been doing cultural activities with teachers at school (37% compared with 22%).

Participation in sporting, social and community activities

In 2008, Aboriginal and Torres Strait Islander children aged 3–14 years were highly likely to have participated in at least one sporting, social or community activity in the 12 months before the survey (92%) (table 3.8). Most children (84%) had undertaken one or more social activities, 72% had participated in at least one sporting activity, and just under half (45%) had been involved in one or more community/interest group activities. The most commonly reported activities for children were sport or physical activities (60%), visiting a park, botanic gardens, zoo or theme park (55%) and going to the movies, theatre or a concert (49%).

3.7 TEACHERS OF CULTURAL ACTIVITIES(a), Aboriginal and Torres Strait Islander children aged 3–14 years



(a) Respondents could report more than one teacher.

(b) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.8 PARTICIPATION IN SPORTING, SOCIAL AND COMMUNITY ACTIVITIES(a) IN THE LAST 12 MONTHS, Aboriginal and Torres Strait Islander people—2008

	3–14 years %	15 years and over %	3 years and over %
Sporting activities			
Took part in sport or physical activities	59.6	30.1	39.6
Attended a sporting event as a spectator(b)	46.4	45.4	45.7
Coach, instructor or teacher	1.7	10.9	7.9
Referee, umpire or official	*1.1	6.3	4.6
Committee member or administrator	*0.5	8.5	5.9
Other sporting activity n.f.d.	19.1	13.9	15.5
<i>One or more sporting activities</i>	71.6	57.4	62.0
Social activities			
Went out to a cafe, bar or restaurant	48.4	58.9	55.6
Visited a park, botanic gardens, zoo or theme park	55.2	36.9	42.7
Visited a library, museum or art gallery	41.4	30.9	34.3
Attended movies, theatre or concert	49.0	38.2	41.6
Watched Indigenous TV	44.8	60.5	55.5
Listened to Indigenous radio	14.8	30.3	25.4
<i>One or more social activities(b)</i>	84.2	85.1	84.8
Community or interest groups			
Church or religious activities	23.2	18.6	20.1
Recreational or cultural group	14.5	18.9	17.5
Community or special interest group activities	8.9	17.4	14.7
Attended a native title meeting	1.1	7.5	5.4
Aboriginal and Torres Strait Islander festivals or ceremonies(c)	22.9	43.9	37.2
<i>One or more community or interest group activities</i>	45.0	57.1	53.2
Total who participated in one or more of these activities(b)	92.1	92.5	92.4
	no.	no.	no.
All persons	153 400	327 100	480 500

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Respondents could report more than one activity.

(b) Difference between 3–14 years and 15 years and over rate is not statistically significant.

(c) Includes funerals/sorry business.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Similarly, the majority (92%) of Aboriginal and Torres Strait Islander people aged 15 years and over had participated in at least one sporting, social or community activity in the 12 months before the survey. More than half had participated in one or more sporting or community/interest group activities (both 57%). Most Aboriginal and Torres Strait Islander people (85%) had participated in at least one social activity. Nationally, the most commonly reported activities were watching Indigenous TV (61%), going to a café, bar or restaurant (59%), attending a sporting event as a spectator (45%) and attending Aboriginal and Torres Strait Islander ceremonies or festivals (including funerals/sorry business) (44%). Participation rates for children aged 3–14 years and people aged 15 years and over were significantly different for most of the selected activities.

Family, kinship and community

Family and household composition

Aboriginal and Torres Strait Islander households tend to be larger, are more likely to be 'non-nuclear', and are more fluid in composition than most other Australian households.

In 2008, just over three-quarters (77%) of all Aboriginal and Torres Strait Islander households were single family households (table 3.9). A further 7% were multiple family households and 13% were lone person households. The average size of Aboriginal and Torres Strait Islander households was 3.4 people (3.3 people in non-remote areas and 4.1 people in remote areas).

The larger average size of Aboriginal and Torres Strait Islander households in remote areas reflects the higher prevalence of multiple family households in these areas compared with non-remote areas (16% compared with 5%). In remote areas, Aboriginal and Torres Strait Islander multiple family households had an average of 8.1 people per household, compared with an average 3.9 people in single family households.

Of the 149,100 Aboriginal and Torres Strait Islander single family households in 2008, more than half (59%) had one or more dependent children aged 0–14 years. More than one-quarter (29%) of single family households had two or three dependent children aged 0–14 years, and 7% had four or more.

Parenting responsibilities

Characteristics of parents

In 2008, an estimated 124,800 (or 38%) of Aboriginal and Torres Strait Islander people aged 15 years and over were parents or guardians of at least one Aboriginal or Torres Strait Islander child aged 0–14 years. Aboriginal and Torres Strait Islander females were much more likely than males to have parenting responsibilities for children aged 0–14 years (46% compared with 29%) and to be young parents. Just over one in five females with parenting responsibilities (21%) were aged 15–24 years, compared with 10% of males with parenting responsibilities (graph 3.10). The average age of Aboriginal and Torres Strait Islander females with parenting responsibilities was 33 years, compared with 37 years for males.

3.9 FAMILY COMPOSITION OF HOUSEHOLD, Aboriginal and Torres Strait Islander households—2008

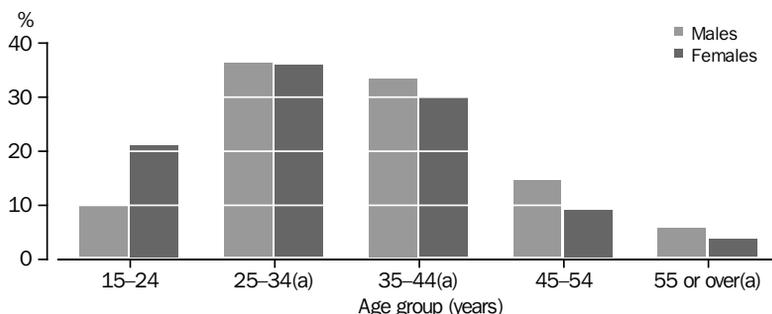
	Non-remote areas	Remote areas	Australia
	%	%	%
Single family households			
Couple family with dependent children(a)	30.9	27.3	30.3
One parent family with dependent children(a)	19.7	16.9	19.2
Couple only	15.3	11.1	14.6
Other one family households(a)	13.1	12.4	13.0
<i>Total single family households</i>	79.0	67.6	77.1
Multiple family households	4.7	16.5	6.7
Lone person(a)	13.2	14.9	13.5
Group households	3.0	*1.1	2.7
	no.	no.	no.
Total households	160 700	32 800	193 400

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.10 PARENTS OR GUARDIANS, By sex and age
Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Difference between male and female rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Removal from natural family

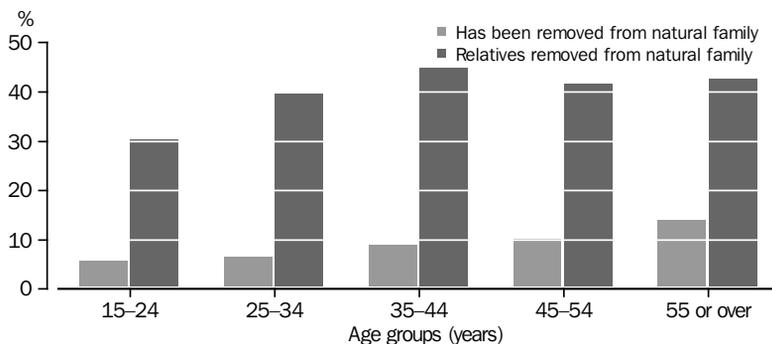
In 2008, an estimated 26,900 or 8% of Aboriginal and Torres Strait Islander people aged 15 years and over had been removed from their natural family at some stage in their life and for 125,700, or almost two in five (38%), one or more of their relatives had been removed from their natural family. Relatives most likely to have been removed were grandparents (15%), aunts or uncles (12%) and/or parents (11%).

The proportion of Aboriginal and Torres Strait Islander people who had been removed from their natural family was higher in older age groups (ranging from 6% of 15-24 year olds to 14% of those aged 55 years and over) (graph 3.11).

A higher proportion of Aboriginal and Torres Strait Islander people in non-remote areas than in remote areas had been removed from their natural family (9% compared with 6%). The proportion of people whose relative(s) had been removed from their natural family was also higher in non-remote areas (41%) than in remote areas (32%).

Around 22,300 (83%) of Aboriginal and Torres Strait Islander people who had been removed, had since made contact with their natural family and one in six of them (16%) had used services designed to help them contact relatives. Among the 4,200 Aboriginal and Torres Strait Islander people who had not been in contact with their natural family since removal, more than half (59%) were unaware of the services available to help them find and contact their relatives.

3.11 REMOVAL FROM NATURAL FAMILY, By age
Aboriginal and Torres Strait Islander people aged 15 years and over



Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Connections with family and friends

Staying in touch with family and friends

According to the 2008 NATSISS, most (97%) Aboriginal and Torres Strait Islander people aged 15 years and over had face-to-face contact with family or friends outside their household in the three months before the survey, 84% in the previous week, and 46% every day in the previous week. In addition, 90% of people had used some other form of contact to stay in touch with family or friends over the previous three months, most commonly mobile phone calls or SMS (74%), phone calls on a land line (56%) and/or Internet contact (27%).

Phone use

In 2008, the majority (97%) of Aboriginal and Torres Strait Islander people had used a telephone in the month before the survey (99% in non-remote areas and 92% in remote areas). Nationally, most people (87%) had used a mobile phone, around six in ten (62%) had used a land line connection and 15% had used a public or community phone. While most Aboriginal and Torres Strait Islander people had used a phone of some kind in the month before the survey, there were differences in the types of phones used, according to remoteness. Aboriginal and Torres Strait Islander people living in non-remote areas

were more likely than those in remote areas to have used a land line connection (70% compared with 35%) or a mobile phone (93% compared with 69%). Over the same period, Aboriginal and Torres Strait Islander people living in remote areas were three times as likely as those in non-remote areas to have used a public or community phone (30% compared with 10%).

Computer and Internet use

An estimated 263,100 Aboriginal and Torres Strait Islander people aged five years and over (58%) had a working computer in their home, and 44% were connected to the Internet in 2008.

In 2008, computer and Internet usage varied according to age, with higher rates reported for Aboriginal and Torres Strait Islander children aged 5–14 years than for people aged 15 years and over. The majority (90%) of Aboriginal and Torres Strait Islander children aged 5–14 years had used a computer at home or elsewhere in the previous year and 69% had accessed the Internet. Computers were most commonly used for School work (77%), Playing games (65%) and/or for Hobbies and other non-school activities (28%). Internet use followed a similar pattern, with more than half (54%) of Aboriginal and Torres Strait Islander children aged 5–14 years having used the Internet for Education or study, 41% for

3.12 MOST COMMON REASONS FOR COMPUTER AND INTERNET USE(a), Aboriginal and Torres Strait Islander people aged 15 years and over—2008

	Non-remote areas %	Remote areas %	Australia %
Computer use			
Personal or private reasons	65.8	31.1	57.2
Work or business	32.1	20.6	29.2
Education or study	25.8	15.0	23.1
Volunteering/community group activities	5.2	2.3	4.5
<i>Total used computer(b)</i>	74.5	43.1	66.6
Internet use			
Emails or online chatting	37.2	13.5	31.3
Entertainment or general browsing	36.8	14.0	31.1
Work or business	26.8	15.6	24.0
Personal or private reasons	26.9	12.2	23.2
Education or study	24.0	10.7	20.7
To pay bills	18.0	8.9	15.7
Buying goods	16.8	6.5	14.2
<i>Total used Internet(b)</i>	67.0	34.6	59.0
	no.	no.	no.
All persons aged 15 years and over	245 600	81 500	327 100

(a) Respondents could report more than one reason for computer or Internet use.

(b) Includes other reasons for use, and reasons not stated.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Entertainment or general browsing and 18% for Emails or online chatting. Rates of computer and Internet use among Aboriginal and Torres Strait Islander children aged 5–14 years were higher in non-remote areas than in remote areas (92% compared with 81% and 75% compared with 51%).

Just over two-thirds (67%) of Aboriginal and Torres Strait Islander people aged 15 years and over had used a computer and 59% had accessed the Internet in the 12 months before the 2008 NATSISS. In this age group, people most commonly used a computer for Personal or private reasons (57%), Work or business (29%) and/or Education or study (23%) (table 3.12). When asked about their Internet use, three in ten people reported Entertainment or general browsing and Emails or online chatting (31% each), Work or business (24%), Education or study (21%), To pay bills (16%) and/or Buying goods (14%). Rates of computer and Internet use among Aboriginal and Torres Strait Islander people aged 15 years and over were higher in non-remote areas than in remote areas (74% compared with 43% and 67% compared with 35%).

General support and support in times of crisis

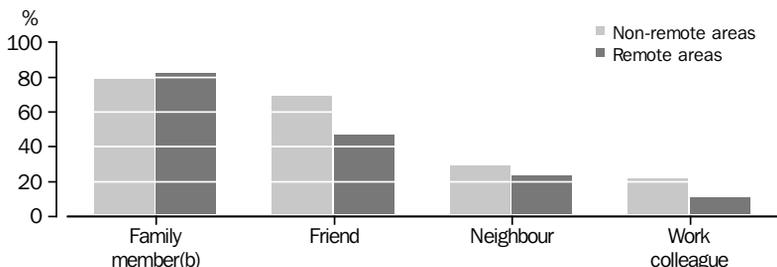
In 2008, an estimated (85%) of Aboriginal and Torres Strait Islander people aged 15 years and over were able to get general support and support in times of crisis from someone living outside their household. In addition, a small

proportion of people were able to get general support only (4%) or support in times of crisis only (4%), while 7% had access to neither general support nor support in times of crisis. Support may come from family members, friends, neighbours, work colleagues or various community, government or professional organisations. It may take the form of emotional, physical or financial help during a time of unexpected trouble (e.g. a sudden sickness, death of a partner/spouse, loss of job, fire or flood). For Aboriginal and Torres Strait Islander people in both non-remote and remote areas, family members and friends were the most common sources of support in times of crisis (graph 3.13).

Providing support to people outside the household

In 2008, an estimated 184,500 Aboriginal and Torres Strait Islander people aged 15 years and over (56%) had helped or provided support to someone outside their household in the month before the survey. Help was most commonly provided to relatives (73%) and friends (43%) and comprised providing Transport or running errands (52%), Emotional support (51%), Domestic work, home maintenance or gardening (43%), Unpaid child care (29%) and Teaching, coaching or practical advice (20%) (graph 3.14). A higher proportion of females than males had provided help or support to someone outside their household in the month before the survey (59% compared with 53%).

3.13 SOURCES OF SUPPORT(a) IN TIMES OF CRISIS, Aboriginal and Torres Strait Islander people aged 15 years and over

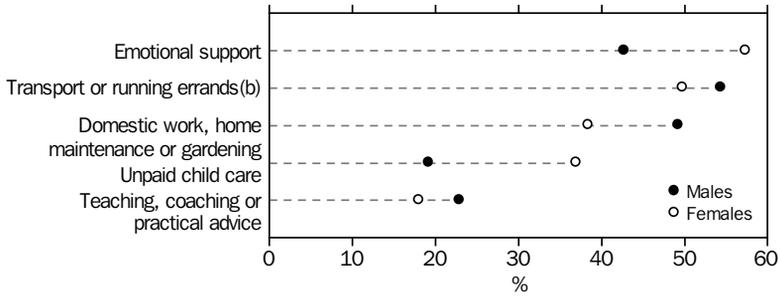


(a) The four most commonly reported sources of support are shown. Respondents could report more than one source of support.

(b) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

**3.14 SUPPORT PROVIDED TO SOMEONE OUTSIDE THE HOUSEHOLD(a), By sex
Aboriginal and Torres Strait Islander people aged 15 years and over**



(a) In the last four weeks. Respondents could report more than one type of support.

(b) Difference between male and female rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Access to transport

Access to reliable forms of transport can enable people to maintain contact with family members and friends living elsewhere. In 2008, two-thirds (66%) of Aboriginal and Torres Strait Islander people aged 15 years and over had access to a motor vehicle whenever needed, and a further 7%, only in emergencies. Nationally, just over one-quarter (26%) of Aboriginal and Torres Strait Islander people did not have access to a motor vehicle (24% in non-remote areas and 32% in remote areas).

An estimated 101,500 Aboriginal and Torres Strait Islander people aged 15 years and over (31%) had no public transport in their local area in 2008. People living in remote areas were four times as likely as those in non-remote areas to lack access to local public transport (71% compared with 18%). Nationally, 15% of Aboriginal and Torres Strait Islander people who had no public transport available in their local area, said that they were often or always unable to get to places as needed (10% in non-remote areas and 19% in remote areas).

Health

Children's health

Among the estimated 193,200 Aboriginal and Torres Strait Islander children aged 0–14 years in 2008, the majority (79%) were reported to be in excellent or very good health, 18% in good health, and 4% in fair or poor health. The proportions of Aboriginal and Torres Strait

Islander children with excellent or very good health did not vary significantly between non-remote and remote areas, nor between boys and girls.

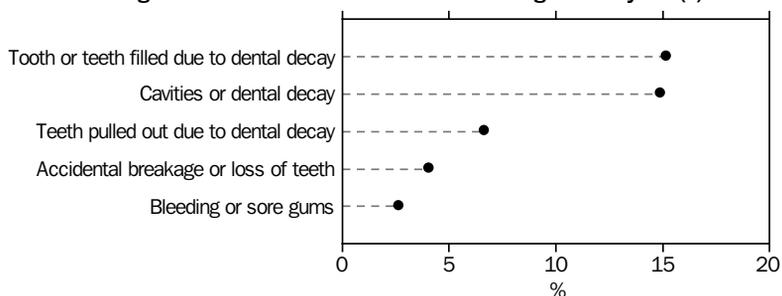
Oral health

In 2008, three in ten Aboriginal and Torres Strait Islander children with teeth were reported to have teeth or gum problems, most commonly fillings and/or cavities due to tooth decay (15% each) (graph 3.15). Just over two-thirds of Aboriginal and Torres Strait Islander children (67%) had visited a dentist at some stage in their life, with 47% having seen a dentist in the previous year. A further 14,800 Aboriginal and Torres Strait Islander children (8%) needed dental care in the previous year, but had not been to a dentist. The most commonly reported reason(s) for children not having seen a dentist were that the waiting time was too long or the service was not available at the time required (32%) and/or that cost was a barrier (21%). Three-quarters of Aboriginal and Torres Strait Islander children (75%) were reported to be brushing their teeth at least once a day, with higher rates of daily brushing in non-remote areas than in remote areas (80% compared with 60%).

Ear and hearing problems

Nationally, ear or hearing problems were experienced by 16,500 Aboriginal and Torres Strait Islander children (9%) in 2008, with similar rates reported in non-remote and remote areas. Among Aboriginal and Torres Strait Islander children with ear or hearing problems, just over one-third (35%) had runny ears or glue ear

**3.15 TEETH AND GUM PROBLEMS(a),
Aboriginal and Torres Strait Islander children aged 0–14 years(b)**



(a) More than one teeth or gum problem could be reported.

(b) Excludes children who did not have teeth yet.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

(caused by middle ear infections) and 28% had hearing loss or partial deafness. In non-remote areas, more than half (55%) of children had experienced ear or hearing problems for more than two years, compared with 40% of those who were living in remote areas.

Sight problems

In 2008, an estimated 13,800 Aboriginal and Torres Strait Islander children (7%) had eye or sight problems. Among children with eye or sight problems, 37% were long-sighted, 28% were short-sighted, and 61% wore glasses or contact lenses to correct their sight problems.

Nutrition

Among the estimated 53,900 Aboriginal and Torres Strait Islander children aged 0–3 years in 2008, one in five (20%) were currently being breast-fed and 55% had previously been breast-fed. Overall rates of breast-feeding (current and previous, combined) were higher in remote areas than in non-remote areas (85% compared with 73%). In remote areas, the proportion of Aboriginal and Torres Strait Islander infants aged less than six months who were currently being breast-fed was more than one-and-a-half times the corresponding rate in non-remote areas (77% compared with 45%).

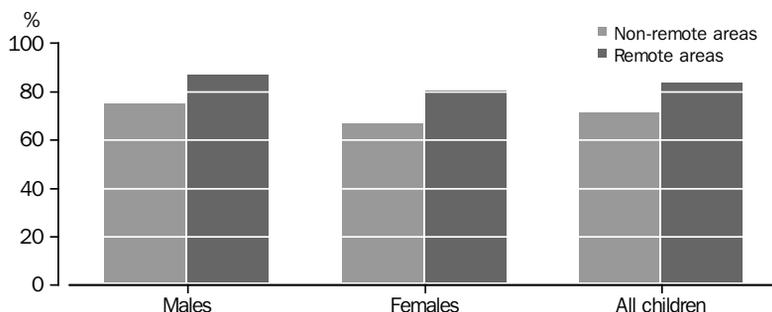
As well as having higher rates of breast-feeding, Aboriginal and Torres Strait Islander children in remote areas also tended to be breast-fed for longer than children in non-remote areas. Among

children who had previously been breast-fed, the median age at which breast-feeding stopped was 36 weeks (or 8–9 months) for those in remote areas, compared with 17 weeks (around 4 months) for children in non-remote areas. Similarly, children living in remote areas were almost twice as likely as those in non-remote areas to have been breast-fed for the first 1–2 years of life (24% compared with 13%).

The National Health and Medical Research Council (NHMRC) Dietary Guidelines recommend that people eat a wide variety of nutritious foods, including a high intake of plant food, such as fruit and vegetables. In 2008, more than half (59%) of the 179,300 Aboriginal and Torres Strait Islander children aged 1–14 years were reported to eat fruit every day, while 53% ate vegetables daily.

The number of serves of fruit and vegetables usually eaten was only collected for Aboriginal and Torres Strait Islander children in non-remote areas. Among the 106,000 children aged 4–14 years in non-remote areas, younger children were more likely than older children to meet the NHMRC guidelines for daily intake of fruit and vegetables. Around six in ten children aged 4–7 years (62%) exceeded the recommended daily single serve of fruit and 60% met or exceeded the recommended two serves of vegetables. In comparison, an estimated one in five Aboriginal and Torres Strait Islander children aged 12–14 years (21%) ate the recommended three serves of fruit and 19% ate the recommended four serves of vegetables.

**3.16 PHYSICALLY ACTIVE EVERY DAY FOR AT LEAST AN HOUR(a),
Aboriginal and Torres Strait Islander children aged 4–14 years**



(a) In the week before the survey.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Physical activity and inactivity

In 2008, almost three-quarters (74%) of the 139,400 Aboriginal and Torres Strait Islander children aged 4–14 years were physically active for at least an hour every day in the week before the survey (84% in remote areas compared with 71% in non-remote areas) (graph 3.16). In addition, a higher proportion of boys, than girls, were physically active (78% compared with 70%). Almost half (47%) of Aboriginal and Torres Strait Islander children had played organised sport in the previous year, with participation rates higher in non-remote areas than in remote areas (49% compared with 40%).

As well as collecting information about physical activity, the 2008 NATSISS also measured the amount of time that Aboriginal and Torres Strait Islander children aged 5–14 years spent engaged in screen-based activities, such as watching television, videos or DVDs (as a proxy for time spent being inactive). Among the estimated 127,200 Aboriginal and Torres Strait Islander children aged 5–14 years in 2008, two-thirds (66%) spent more than two hours each day watching television, videos or DVDs, with higher rates reported for older children, than for younger children (71% of 10–14 year olds compared with 62% of 5–9 year olds).

Sleep

To decrease the risk of sudden infant death syndrome (SIDS), it is recommended that infants sleep on their backs. In 2008, this was the usual sleeping position for 61% (or 8,500) infants

aged less than one year (66% in non-remote areas compared with 43% in remote areas). The proportion of children aged 1–3 years who usually slept on their back was considerably lower, at 40%.

According to the 2008 NATSISS, an estimated 43,800 Aboriginal and Torres Strait Islander children aged 0–14 years (23%) had experienced problems sleeping in the month before the survey (25% of those in non-remote areas compared with 13% in remote areas). Of these, 19% had difficulty sleeping due to over-excitement, 13% because of illness or pain, 12% due to nightmares and 12% due to fear of the dark.

Stressors and positive life events

In 2008, almost two-thirds (65%) of Aboriginal and Torres Strait Islander children aged 4–14 years had experienced at least one stressor in the previous year (66% in non-remote areas compared with 60% in remote areas). The stressors most commonly experienced by Aboriginal and Torres Strait Islander children were the death of a close family member/friend (22%), problems keeping up with school work (20%), being scared/upset by an argument or someone else's behaviour (19%), and having nothing fun to do (18%). Many Aboriginal and Torres Strait Islander children also experienced positive life events. More than half (62%) were reported to have been on a holiday or trip away in the previous year, and 58% had received an award, prize or some other form of positive recognition.

Passive smoking

Nationally in 2008, 63% of Aboriginal and Torres Strait Islander children aged 0–14 years were living in a household with one or more current daily smokers (72% in remote areas and 61% in non-remote areas). One in six (16%) Aboriginal and Torres Strait Islander infants and young children (aged 0–3 years) and 23% of children aged 4–14 years were exposed to cigarette smoking indoors. Reflecting higher rates of smoking among Aboriginal and Torres Strait Islander people than non-Indigenous people, Aboriginal and Torres Strait Islander children were exposed to passive smoking (indoors) at three times the rate of non-Indigenous children (21% compared with 7%).

Maternal health during pregnancy

In the 2008 NATSISS, information about the health of birth mothers was collected in relation to the estimated 53,900 Aboriginal and Torres Strait Islander children aged 0–3 years. For some topics, it was not possible to obtain information about all birth mothers. The proportions are therefore based on the fully responding population for each topic.

Health conditions

Two adverse conditions that can arise in pregnancy are gestational diabetes and high blood pressure. In 2008, a small proportion of birth mothers of Aboriginal and Torres Strait Islander children aged 0–3 years (8%), had diabetes or sugar problems, and 14% had high blood pressure during their pregnancy.

Risk factors

Insufficient folate intake during pregnancy can increase the risk of neural tube defects, such as spina bifida, in the unborn child. In 2008, around half (51%) of birth mothers of Aboriginal and Torres Strait Islander children aged 0–3 years took folate supplements before or during their pregnancy.

Tobacco, alcohol and illicit drug use during pregnancy pose significant risks to the health of the mother and unborn child. In 2008, one in five birth mothers of Aboriginal and Torres Strait Islander children aged 0–3 years (20%) were reported to have drunk alcohol during pregnancy and 42% had smoked or chewed tobacco (although more than half (57%) of these tobacco users reported using less tobacco while pregnant). A small proportion of Aboriginal and

Torres Strait Islander children aged 0–3 years (5%) had birth mothers who had used illicit drugs during their pregnancy.

Health care

In 2008, almost half (45%) of birth mothers had sought advice or information about aspects of pregnancy or childbirth before the birth of their child. Information has the potential to influence the behaviours of prospective mothers in a positive way. For example, birth mothers who had sought advice or information about aspects of pregnancy or childbirth were more likely to have taken folate than those who had not sought advice (63% compared with 45%), and were less likely to have smoked or chewed tobacco during pregnancy (36% compared with 47%). An expectant mother's health status and associated behaviours may also influence whether or not she seeks advice. Birth mothers with high blood pressure were more likely to have sought advice (57%) than those without high blood pressure (43%). Similarly, birth mothers who had used tobacco during pregnancy were less likely to have sought advice about aspects of pregnancy or childbirth (38%) than those who had not used tobacco during pregnancy (49%).

A majority (91%) of birth mothers of Aboriginal and Torres Strait Islander children aged 0–3 years in 2008 had regular checkups while pregnant with a doctor (63%), midwife or nurse (43%) and/or an Aboriginal or Torres Strait Islander health worker (8%). Reflecting differential access to various health professionals in non-remote and remote areas, regular pregnancy checkups with a doctor were more common in non-remote areas than in remote areas (68% compared with 46%), whereas checkups with an Aboriginal and Torres Strait Islander health worker were more common among birth mothers living in remote areas (16% compared with 6% in non-remote areas).

Most (98%) Aboriginal and Torres Strait Islander children aged 0–3 years in 2008, had been born in a hospital. For many birth mothers of Aboriginal and Torres Strait Islander children in remote areas, this meant travelling a considerable distance from home to give birth. While more than half (59%) of Aboriginal and Torres Strait Islander children in remote areas were born in a hospital at least 100 kilometres from their home, a similar proportion (52%) of children in non-remote areas were born less than 10 kilometres from their home.

Health of young people and adults

Among the estimated 327,100 Aboriginal and Torres Strait Islander people aged 15 years and over in 2008, 44% rated their health as excellent or very good; just over one-third (34%) rated their health as good; and almost one-quarter (22%) rated their health as fair or poor. The proportions of Aboriginal and Torres Strait Islander people with excellent or very good health did not vary significantly between non-remote and remote areas. Males were more likely than females to report excellent/very good health (46% compared with 41%) and rates of excellent/very good health decreased with age, from 58% of those aged 15–24 years to 22% of those aged 55 years and over.

The most recent information on self-assessed health for non-Indigenous people is from the 2007–08 National Health Survey. After adjusting for differences in the age structures of the two populations, Aboriginal and Torres Strait Islander people were twice as likely as non-Indigenous people to have reported fair/poor health.

Disability and long-term health conditions

Nationally, 50% of Aboriginal and Torres Strait Islander people aged 15 years and over had a disability or long-term health condition, including one in twelve (8%) with a profound or severe core activity limitation, meaning that they needed help with one or more activities of daily living some or all of the time. The proportions of Aboriginal and Torres Strait Islander people with a disability or long-term health condition were similar for males and females, and for those living in remote and non-remote areas. Rates of disability and profound/severe core activity limitation steadily increased with age (graph 3.17).

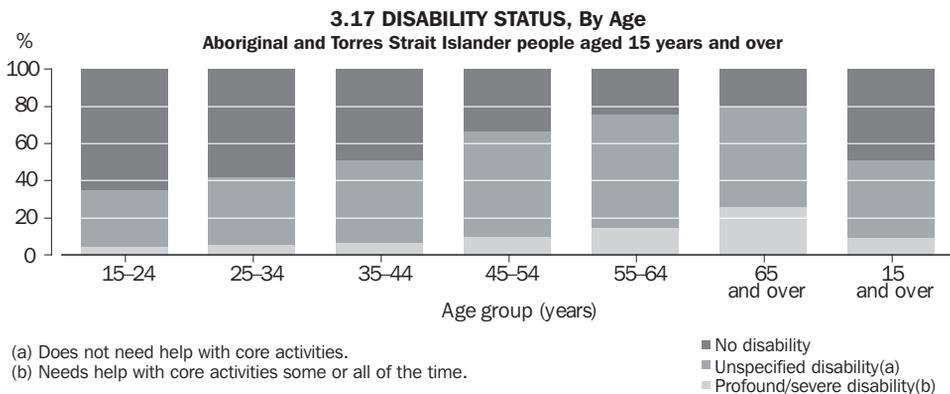
Psychological distress and stressors

Using a modified version of the Kessler Psychological Distress Scale (the K5+), the 2008 NATSISS collected information on the levels of psychological distress experienced by Aboriginal and Torres Strait Islander people aged 15 years and over in the four weeks before the survey. Results showed that almost one-third (31%) of Aboriginal and Torres Strait Islander people had experienced high/very high levels of psychological distress during this period, with the overall rate for females (34%) higher than the rate for males (27%).

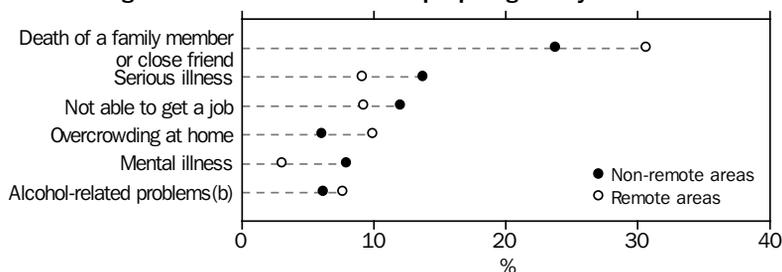
These data are consistent with the high proportion (58%) of Aboriginal and Torres Strait Islander people who reported having personally experienced one or more life stressors in the previous year. The most commonly reported stressors were Death of a family member or close friend (26%), Serious illness (13%), Inability to get a job (11%), Overcrowding at home (7%), Mental illness (7%) and Alcohol-related problems (7%). Apart from alcohol-related problems, the proportions of people reporting each of these stressors were significantly different in non-remote and remote areas (graph 3.18).

Risk factors

A person's health can be enhanced and improved by, for example, maintaining a healthy weight and participating in physical activity. Conversely, health may be adversely affected by behaviours such as risky levels of alcohol consumption, drug-taking and tobacco use. These can increase the likelihood of accidents and injuries occurring in the short term, and contribute to the development of chronic diseases over the life course.



**3.18 MOST COMMON STRESSORS(a),
Aboriginal and Torres Strait Islander people aged 15 years and over**



(a) Respondents could report more than one type of stressor personally experienced in the last 12 months.

(b) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Weight

According to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), more than half (57%) of Aboriginal and Torres Strait Islander people aged 15 years and over were either overweight or obese (58% of males and 55% of females). A further 38% of people were in the healthy weight range and 6% were underweight. While the proportion of Aboriginal and Torres Strait Islander males and females within the healthy weight range was the same (38%), females were more likely than males, to be underweight (7% compared with 4%) or obese (31% compared with 26%), while males were more likely than females to be overweight (32% compared with 23%).

Participation in sport or physical activity

The 2008 NATSISS collected information about participation in a range of sporting activities and social activities in the three months before the survey. One-quarter (25%) of Aboriginal and Torres Strait Islander people aged 15 years and over had taken part in sporting or physical activities, with participation rates higher for males than for females (32% compared with 19%).

Tobacco smoking

In 2008, just under half (45%) of Aboriginal and Torres Strait Islander people aged 15 years and over were current daily smokers, 20% were ex-smokers, and around one-third (33%) had never smoked. Smoking rates were similar for males and females in all age groups, apart from those aged 35–44 years, among whom the smoking

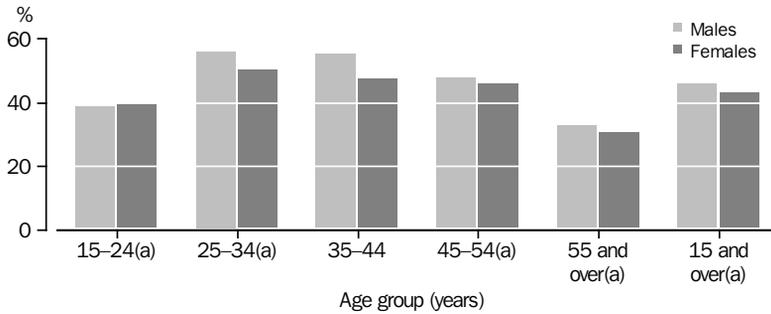
rates were significantly higher for males than for females (56% compared with 47%) (graph 3.19). Overall smoking rates were also higher in remote areas than in non-remote areas (49% compared with 43%).

The most recent information on smoking for non-Indigenous people is from the 2007–08 National Health Survey. For both males and females, smoking was more prevalent among Aboriginal and Torres Strait Islander people than non-Indigenous people in every age group. After adjusting for differences in the age structure of the two populations, Aboriginal and Torres Strait Islander people aged 15 years and over were twice as likely as non-Indigenous people to be current daily smokers.

Illicit substance use

Illicit substance use refers to the use of substances that are either illegal to possess (e.g. heroin) or legally available but used inappropriately (e.g. misuse of prescription medication). According to the 2008 NATSISS, one in five Aboriginal and Torres Strait Islander people aged 15 years and over (20%) reported having recently used an illicit substance (i.e. in the 12 months before the survey), most commonly marijuana (16%). Recent illicit substance use was reported by a higher proportion of males than females (25% compared with 16%) and by young people (25% of those aged 15–34 years compared with 15% of people aged 35 years and over). Overall rates of recent substance use were also higher among Aboriginal and Torres Strait Islander people living in non-remote areas than in remote areas (22% compared with 16%).

3.19 CURRENT DAILY SMOKERS, By sex and age
Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Difference between male and female rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Harmful drinking

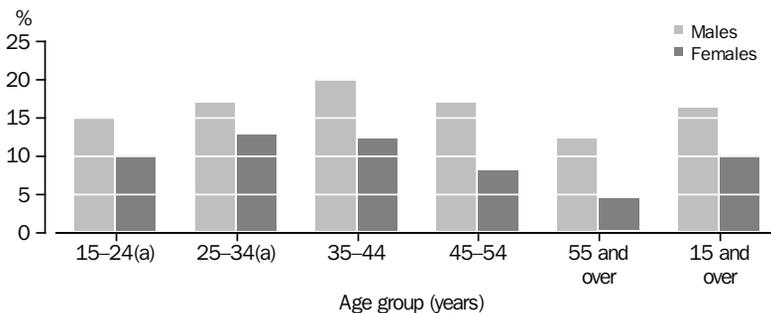
Based on the 2001 National Health and Medical Research Council Australian Drinking Guidelines (NHMRC, 2001), two measures of risky drinking of alcohol were collected in the 2008 NATSISS. The first measure was designed to identify long-term or chronic risk and the second measure was designed to identify acute risk (or binge) drinking.

In 2008, an estimated 13% of Aboriginal and Torres Strait Islander people aged 15 years and over reported drinking at chronic risky/high risk levels in the 12 months before the survey. A further 50% were low risk drinkers and just over one-third (35%) reported that they had not drunk alcohol in the last 12 months (or had never consumed alcohol). While rates of risky/

high risk drinking were similar for Aboriginal and Torres Strait Islander people in non-remote and remote areas, abstinence was more common in remote areas (46%) than in non-remote areas (31%). A higher proportion of males than females reported drinking at chronic risky/high risk levels (16% compared with 10%) and this difference was evident in every age group (graph 3.20).

Just over one-third (34%) of Aboriginal and Torres Strait Islander people aged 15 years and over reported drinking at acute risky/high risk levels (commonly referred to as binge drinking) in the two weeks before the survey. Overall, 41% of males drank at acute risky/high risk levels compared with 27% of females, and rates of binge drinking were higher in non-remote than in remote areas (35% compared with 30%).

3.20 CHRONIC RISKY/HIGH RISK DRINKING, BY SEX AND AGE,
Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Difference between male and female rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Use of health services

The 2008 NATSISS collected information about problems experienced in accessing health services such as those provided by Aboriginal and Torres Strait Islander health workers, dentists, doctors, other health workers, hospitals, mental health services and Medicare.

Nationally, an estimated 86,200 Aboriginal and Torres Strait Islander people aged 15 years and over (or 26%) reported problems accessing one or more health services. Problems most commonly experienced were in relation to accessing dentists (20%), doctors (10%) and hospitals (7%). People living in remote areas were more likely than those in non-remote areas to have encountered problems accessing one or more health services (36% compared with 23%). The types of problems experienced also varied by remoteness. Aboriginal and Torres Strait Islander people in non-remote areas were more likely than those in remote areas to have reported that waiting times were too long or that a service was not available when needed (55% compared with 33%) or that the cost of the service was a barrier (38% compared with 16%) (graph 3.21). In contrast, Aboriginal and Torres Strait Islander people in remote areas were more likely than those in non-remote areas to have reported no services in their area (51% compared with 27%), insufficient services in their area (47% compared with 34%) or transport/distance (46% compared with 25%) as barriers.

More information on the health of Aboriginal and Torres Strait Islander people can be found in chapter 11, *Health*.

Education, learning and skills

Early learning

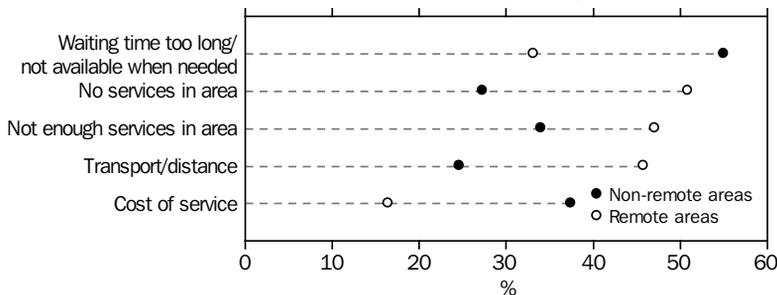
Early childhood learning can include participation in unstructured (informal) learning activities that occur outside an institutional setting, and formal learning activities provided through structured preschool programs. According to the 2008 NATSISS, almost all (97%) of the 24,700 Aboriginal and Torres Strait Islander children aged 4–5 years were reported to have participated in a range of informal learning activities with their main carer in the week before the survey. The majority (90%) of children had watched TV, videos or DVDs, 82% had participated in reading activities, 72% in musical activities, 69% in creative activities such as drawing and writing, and 66% in playing indoor or outdoor sports. Four in ten (41%) Aboriginal and Torres Strait Islander children aged 4–5 years, were reported to be usually attending preschool, with similar rates of attendance in non-remote and remote areas (table 3.22).

Staying in school

Between 2000 and 2010, the apparent retention rate for full-time Aboriginal and Torres Strait Islander students from Years 7/8 (the first year of secondary school) to Year 10 improved from 83% to 96%, while at the Year 12 level, the increase was from 36% to 47% over the same period (graph 3.23). For more information on apparent retention rates, see chapter 12, *Education*.

Reflecting increasing apparent school retention rates, the proportion of Aboriginal and Torres Strait Islander people aged 15 years and over who

**3.21 BARRIERS TO ACCESSING HEALTH SERVICES(a),
Aboriginal and Torres Strait Islander people aged 15 years and over**



(a) The five most commonly reported barriers are shown. Respondents could report more than one type of barrier.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

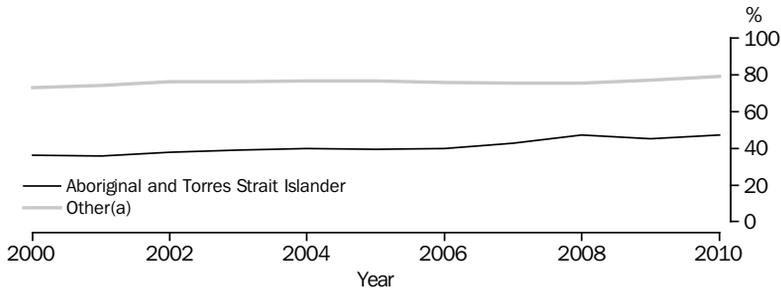
3.22 REPORTED PRESCHOOL ATTENDANCE, Aboriginal and Torres Strait Islander children aged 4–5 years—2008

	Non-remote areas	Remote areas	Australia
	%	%	%
Preschool attendance(a)	41.3	41.2	41.2
Preschool attendance	no.	no.	no.
Total children aged 4–5 years	18 000	6 700	24 700

(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

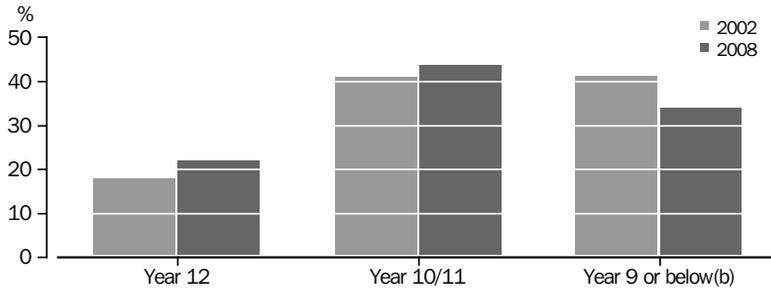
3.23 APPARENT RETENTION RATES, YEAR 7/8 TO YEAR 12, Full-time school students



(a) Other series includes non-Indigenous students and those whose Indigenous status was 'not stated'.

Source: Schools, Australia, 2010 (4221.0).

3.24 HIGHEST YEAR OF SCHOOL COMPLETED, Aboriginal and Torres Strait Islander people aged 15 years and over(a)—2002 and 2008

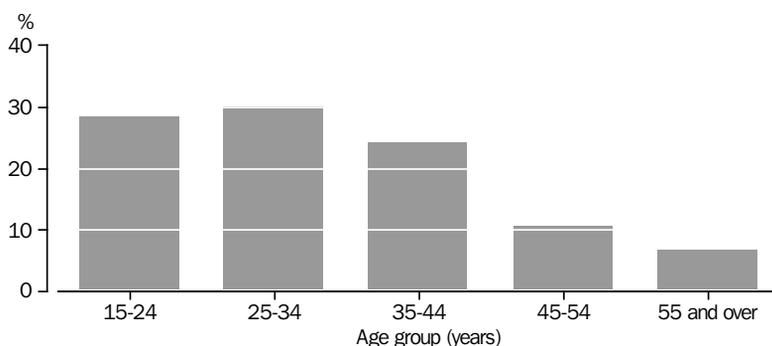


(a) Excludes persons still attending secondary school.

(b) Includes persons who never attended school.

Source: 2002 and 2008 National Aboriginal and Torres Strait Islander Social Surveys.

3.25 YEAR 12 COMPLETION, BY AGE, Aboriginal and Torres Strait Islander people aged 15 years and over



Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

had completed Year 12 increased from 18% in 2002 to 22% in 2008 (graph 3.24).

In 2008, Year 12 completion rates for Aboriginal and Torres Strait Islander people aged 15 years and over were higher in non-remote areas (24%) than in remote areas (16%). Year 12 completion rates were also higher among younger Aboriginal and Torres Strait Islander people, ranging from 30% of those aged 25–34 years to 7% of those aged 55 years and over (graph 3.25).

Continuing education

According to the 2008 NATSISS, almost all (98%) of the 127,200 Aboriginal and Torres Strait Islander children aged 5–14 years were reported to be usually attending school. Of the 59,300 youths aged 15–19 years, 60% were studying (46% in a secondary school and 14% at a tertiary institution such as a university, TAFE or business college). For Aboriginal and Torres Strait Islander secondary school students aged 15–19 years, support from family, friends and school (81%), career guidance (30%) and greater access to apprenticeships (23%) were the most commonly reported factors that would enable them to complete Year 12.

In 2008, an estimated 23,900 Aboriginal and Torres Strait Islander youth aged 15–19 years (40%) were not studying. One in ten (10%) had completed Year 12 or a higher qualification while the remaining 30% had not. Among those aged 15–19 years who were not studying in 2008, just over two-thirds (69%) said they intended to undertake some study in the future (76% in

non-remote areas compared with 45% in remote areas).

Around one in six (16%) of the 44,500 Aboriginal and Torres Strait Islander people aged 20–24 years were studying at a tertiary institution in 2008. A further 35% had completed Year 12 or a higher qualification, and 49% had not completed Year 12 (and were not studying).

Engaging in work and study

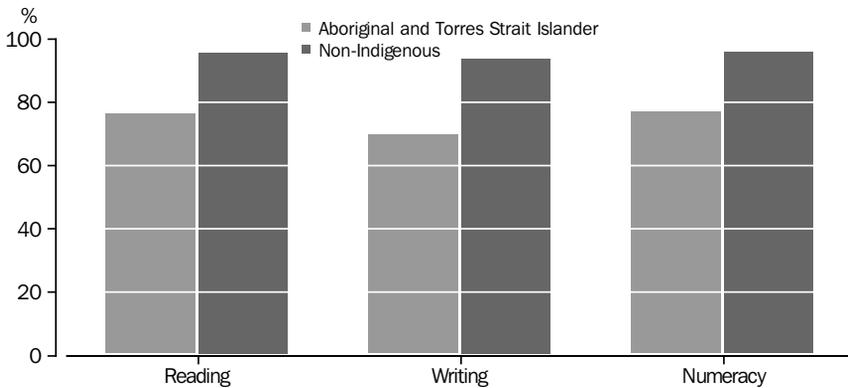
In 2008, just over half (54%) of the 103,800 Aboriginal and Torres Strait Islander young people aged 15–24 years were fully engaged in work and/or study (i.e. they were either in full-time work, full-time study, or a full-time equivalent combination of work and study). This was an increase from 47% in 2002. Young Aboriginal and Torres Strait Islander males were more likely than females to be fully engaged in work and/or study (60% compared with 48%). This pattern is similar to that in the non-Indigenous population (86% of males compared with 78% of females) (*National Health Survey, 2007–08*, 4364.0). Partly reflecting easier access to jobs and educational institutions, young Aboriginal and Torres Strait Islander people living in non-remote areas were more likely than those in remote areas to be fully engaged in work and/or study (58% compared with 41%).

Educational achievement

Literacy and numeracy skills

Data from the Australian Curriculum, Assessment and Reporting Authority (ACARA) show that in

**3.26 YEAR SEVEN STUDENT ACHIEVEMENT IN LITERACY AND NUMERACY(a),
By Indigenous status**



(a) Proportions of students attaining the minimum standard.

Source: 2010 National Assessment Program, Literacy and Numeracy, ACARA.

2010, just over three-quarters (77%) of Aboriginal and Torres Strait Islander Year 7 students met or exceeded the national minimum standards for reading, 70% for writing, and 77% for numeracy (graph 3.26). When compared with the results for non-Indigenous Year 7 students, these proportions were 19 percentage points lower for reading and numeracy, and 24 percentage points lower for writing.

Non-school qualifications

In 2008, 40% of the 207,300 Aboriginal and Torres Strait Islander people aged 25–64 years had attained a non-school qualification, an increase from 32% in 2002. This increase was mainly due to more women and men attaining Certificates III/IV – up by 7 and 3 percentage points respectively, when compared with 2002.

Among Aboriginal and Torres Strait Islander people aged 25–64 years, similar proportions of men and women had attained a non-school qualification (41% compared with 39%). However, partly reflecting the location of tertiary institutions and the availability of jobs that utilise tertiary qualifications, attainment rates varied by remoteness. The likelihood of having a non-school qualification was lower for Aboriginal and Torres Strait Islander people living in remote areas – 26% of Aboriginal and Torres Strait Islander people aged 25–64 years in remote areas had a non-school qualification, compared with 45% in non-remote areas.

Among the 83,300 Aboriginal and Torres Strait Islander people aged 25–64 years who had a non-school qualification in 2008, 16% had a Bachelor degree or higher qualification, 14% had attained an Advanced diploma/Diploma and 61% had completed a Certificate qualification (including 40% with a Certificate level III/IV). Women were more likely than men to have attained an Advanced diploma/Diploma (17% compared with 10%). However, men were more likely than women to have attained a Certificate III/IV qualification (46% compared with 36%) (graph 3.27).

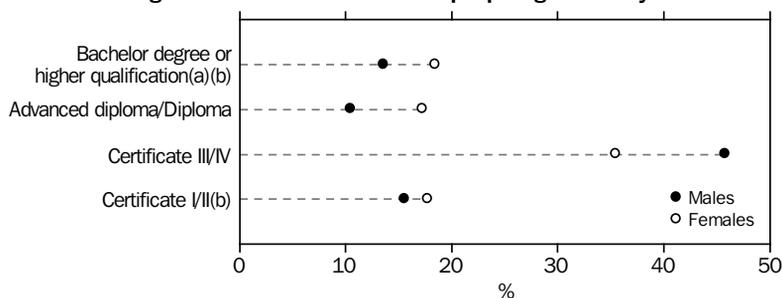
Customary and paid work

Customary work

Aboriginal and Torres Strait Islander people have traditionally engaged in a range of customary activities like hunting, fishing and gathering bush foods. These activities have both an economic and ritual importance.

In 2008, almost half (45%) of Aboriginal and Torres Strait Islander people aged three years and over had participated in fishing in the previous year, one in five (21%) had participated in hunting, and an estimated one in six (16%) had gathered wild plants/berries. Reflecting greater accessibility to land and natural resources, Aboriginal and Torres Strait Islander people living in remote areas were more likely than those in non-remote areas to have been fishing (58%

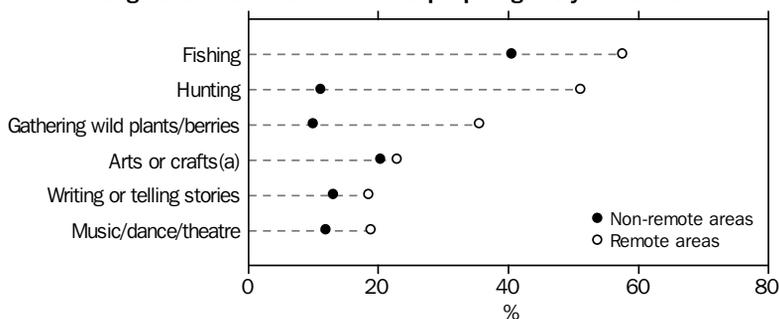
3.27 HIGHEST NON-SCHOOL QUALIFICATION, By sex
Aboriginal and Torres Strait Islander people aged 25–64 years



(a) Includes graduate diploma or certificate and postgraduate degree.
 (b) Difference between male and female rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.28 PARTICIPATION IN SELECTED CULTURAL ACTIVITIES,
Aboriginal and Torres Strait Islander people aged 3 years and over



(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.29 LABOUR FORCE STATUS, BY SEX AND REMOTENESS, Aboriginal and Torres Strait Islander people aged 15–64 years—2008

	Males	Females	Non-remote areas	Remote areas	Australia
	%	%	%	%	%
Employed					
Full-time	44.5	21.9	34.2	28.2	32.8
Part-time	18.2	23.7	20.0	24.2	21.1
Total employed(a)	62.7	45.6	54.3	52.4	53.8
Unemployed(a)(b)	12.2	9.4	11.2	9.2	10.7
Long-term unemployed(a)(c)	3.1	2.5	2.9	2.6	2.8
Total in the labour force(d)	74.9	55.0	65.5	61.5	64.5
Not in the labour force	25.1	45.0	34.5	38.5	35.5
	no.	no.	no.	no.	no.
Persons aged 15–64 years	149 200	161 900	234 500	76 600	311 100
Unemployment rate(a)(c)(e)	16.3	17.1	17.2	14.9	16.6

(a) Difference between non-remote and remote rate is not statistically significant.

(b) Includes the long-term unemployed (persons who were continuously unemployed for 52 weeks or more).

(c) Difference between male and female rate is not statistically significant.

(d) Persons who were either employed, or unemployed and looking for work.

(e) The proportion of the labour force that was unemployed.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

compared with 41%), hunting (51% compared with 11%), and gathering wild plants/berries (36% compared with 10%) (graph 3.28). Nationally, a higher proportion of males than females had been fishing (54% compared with 36%) and hunting (28% compared with 15%).

Aboriginal and Torres Strait Islander people also engaged in a range of other cultural activities which, in some cases, may have generated income. These included making Aboriginal and Torres Strait Islander arts and crafts (21%), writing and telling Aboriginal and Torres Strait Islander stories (15%) and participating in music, dance or theatre (14%). Females were more likely than males to have made Aboriginal and Torres Strait Islander arts or crafts (24% compared with 18%) and to have been involved in story-telling activities (16% compared with 13%).

Employment

Participation in the labour force is seen as being closely related to increased income levels, better health outcomes, improved educational attainment and enhanced self-esteem. According to the 2008 NATSISS, almost two-thirds (65%) of the 311,100 Aboriginal and Torres Strait Islander people aged 15–64 years were participating in the labour force, similar to the rate in 2002 (63%) (table 3.29). A higher proportion of males than females were participating in the labour force in 2008 (75% compared with 55%), and overall participation rates were higher in non-remote areas than in remote areas (66% compared with 62%).

The proportion of employed Aboriginal and Torres Strait Islander people increased significantly from 48% in 2002 to 54% in 2008, due to improved rates for both males (from 56% to 63%) and females (from 41% to 46%). Among Aboriginal and Torres Strait Islander people aged 15–64 years in 2008, males were twice as likely as females to be working full-time (45% compared with 22%).

The unemployment rate (unemployed people as a proportion of those participating in the labour force) decreased for Aboriginal and Torres Strait Islander people from 23% in 2002 to 17% in 2008. Just over one-quarter of unemployed Aboriginal and Torres Strait Islander people (26%) had experienced long-term unemployment (52 weeks or more) in 2008, with no significant variation in the rates for males and females, or between remote and non-remote areas.

Occupation

Almost one-quarter (24%) of employed Aboriginal and Torres Strait Islander people were classified (according to the Australian and New Zealand Standard Classification of Occupations, 2006) as Labourers in 2008 (table 3.30). A further one in six (17%) were classified as Community and personal service workers, 13% were Professionals, 13% were Technicians and trades workers, and 12% were Clerical and administrative workers. The proportions of people employed in various occupations differed according to remoteness and gender. A higher proportion of Aboriginal and Torres Strait Islander people were employed

3.30 OCCUPATION IN MAIN JOB(a) BY SEX, Employed Aboriginal and Torres Strait Islander people aged 15–64 years—2008

Occupation	Males	Females	Persons
	%	%	%
Managers(b)	5.0	4.9	5.0
Professionals	9.7	16.1	12.5
Technicians and trades workers	21.3	3.3	13.4
Community and personal service workers	10.1	25.2	16.8
Clerical and administrative workers	4.7	21.0	11.9
Sales workers	3.3	10.7	6.6
Machinery operators and drivers	15.9	1.9	9.7
Labourers	29.4	16.7	23.7
	no.	no.	no.
Employed persons aged 15–64 years(c)	93 500	73 900	167 400

(a) According to the Australian and New Zealand Standard Classification of Occupations (ANZSCO), First Edition, 2006.

(b) Difference between male and female rate is not statistically significant.

(c) Includes persons for whom occupation was inadequately described.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

as Labourers in remote areas (29%) than in non-remote areas (22%), while in non-remote areas, people were more commonly employed as Clerical and administrative workers and Sales workers than was the case in remote areas. Aboriginal and Torres Strait Islander males were more likely than females to be employed as Technicians and trades workers (21% compared with 3%), Machinery operators and drivers (16% compared with 2%) or Labourers (29% compared with 17%). In contrast, a higher proportion of Aboriginal and Torres Strait Islander females than males were Clerical and administrative workers (21% compared with 5%), Community and personal service workers (25% compared with 10%), Sales workers (11% compared with 3%) and Professionals (16% compared with 10%).

Paid work and cultural responsibilities

Being able to meet cultural responsibilities can help Aboriginal and Torres Strait Islander people to maintain a positive work/life balance and to stay connected to their extended families and communities. In 2008, a considerable proportion (44%) of employed Aboriginal and Torres Strait Islander people aged 15–64 years said that their work allowed them to meet all their cultural responsibilities, 23% reported that they were unable to meet all their cultural responsibilities, and 32% said they did not have cultural responsibilities. Of the 112,500 employed Aboriginal and Torres Strait Islander people who said they had cultural responsibilities, 66% said that their work allowed them to meet these responsibilities (60% in non-remote areas and 79% in remote areas).

Barriers to finding work

In 2008, most unemployed Aboriginal and Torres Strait Islander people (89%) had experienced difficulties while looking for work and 67% had made use of employment services. Nationally, just over one-third of unemployed people reported Lack of jobs (35%) or Insufficient education/training or skills (34%) as difficulties faced when looking for work. Other common difficulties faced by unemployed Aboriginal and Torres Strait Islander people were Transport problems/distance (31%) and No driver's licence (18%).

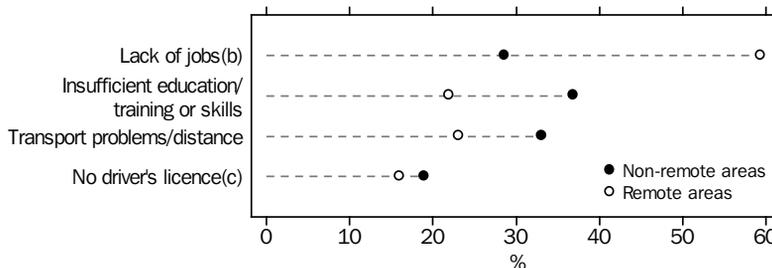
Difficulties experienced while looking for work differed for unemployed Aboriginal and Torres Strait Islander people living in remote and non-remote areas (graph 3.31). People in remote areas were more likely than those in non-remote areas to have reported Lack of jobs (59% compared with 29%), but were less likely than those in non-remote areas to have cited Insufficient education/training or skills (22% compared with 37%) or Transport problems/distance (23% compared with 33%) as difficulties experienced while looking for work.

Income and economic resources

Personal income

According to the 2008 NATSISS, over half (57%) of Aboriginal and Torres Strait Islander people aged 15 years and over had personal gross weekly income in the bottom 40% of all incomes for the Australian population. People living in remote

3.31 MOST COMMON DIFFICULTIES FINDING WORK(a), Unemployed Aboriginal and Torres Strait Islander people aged 15–64 years



(a) Respondents could report more than one type of difficulty.

(b) Comprises no jobs at all and no jobs in local area/line of work.

(c) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

areas were more likely than those in non-remote areas to have low personal weekly income (65% compared with 54%). In 2008, the median personal gross weekly income for Aboriginal and Torres Strait Islander people was \$350, higher in non-remote areas (\$380) than in remote areas (\$280).

Similar proportions of Aboriginal and Torres Strait Islander people reported wages and salary (40%) or government pensions and allowances (41%) as their main source of personal income. People living in non-remote areas more commonly reported a wage or salary as their main source of personal income than did people in remote areas (44% compared with 29%). One in six people in remote areas (16%) reported Community Development Employment Projects (CDEP) payments as their main source of income.

Financial stress and access to resources

Access to money

Almost all Aboriginal and Torres Strait Islander people aged 15 years and over (95%) had a bank account in 2008. Among those who had a bank account, the most common methods of accessing money were EFTPOS or ATM facilities (91%), over-the-counter at a bank or credit union (18%) and/or via the Internet (11%). People in non-remote areas were more likely than those in remote areas to have used EFTPOS or ATM facilities (93% compared with 87%) and Internet banking (13% compared with 5%).

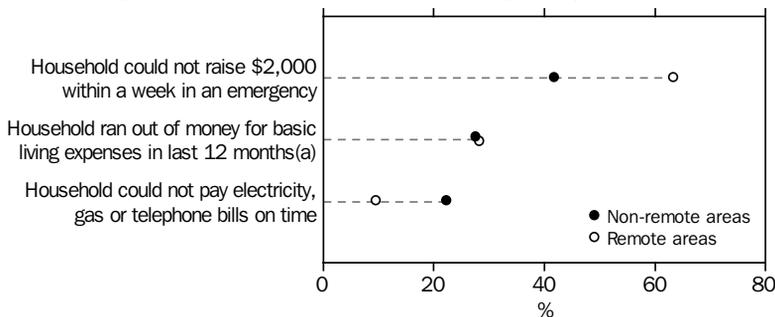
Household financial stress

In 2008, almost half (47%) of Aboriginal and Torres Strait Islander people aged 15 years and over were living in households that could not raise \$2,000 within a week in case of an emergency and 19% in households that had been unable to pay one or more of their utility bills (electricity, gas or telephone) on time in the 12 months before the survey. In addition, an estimated 91,500 Aboriginal and Torres Strait Islander people aged 15 years and over (or 28%) were living in households that had run out of money for basic living expenses in the previous 12 months; 60% of these people went without basic living items as a result. While a higher proportion of people in remote areas than in non-remote areas were living in households that could not raise \$2,000 within a week in case of an emergency (64% compared with 42%) (graph 3.32), people in non-remote areas were more likely than those in remote areas to have experienced difficulty paying one or more utility bills on time in the previous 12 months (22% compared with 10%).

Financial and other types of support provided to relatives

Families can provide a vital safety net for people experiencing financial stress and other difficulties. In 2008, around half (51%) of Aboriginal and Torres Strait Islander people aged 15 years and over had provided support to relatives living elsewhere in the month before the survey (60% in remote areas and 48% in non-remote areas). Nationally, support most commonly took the form of paying for or providing food (27%),

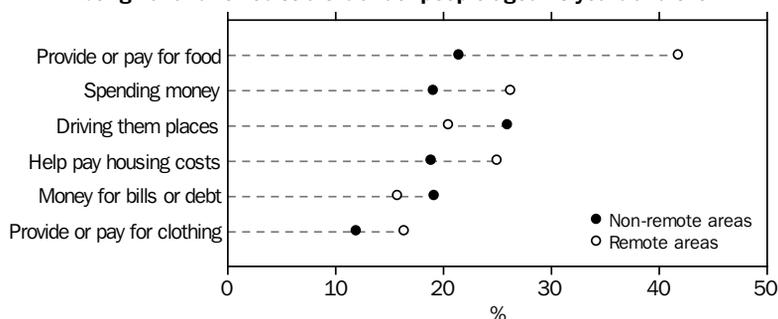
3.32 SELECTED HOUSEHOLD FINANCIAL STRESS INDICATORS, Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.33 SUPPORT PROVIDED TO RELATIVES LIVING ELSEWHERE(a), Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Respondents could report providing more than one type of support.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

driving relatives to places (25%), providing spending money (21%), providing money towards housing costs (20%) or giving relatives money for bills or debt repayments (18%). Aboriginal and Torres Strait Islander people in remote areas were more likely than those in non-remote areas to have provided or paid for food for their relatives (42% compared with 21%), to have assisted with housing costs (25% compared with 19%), to have provided spending money (26% compared with 19%) or to have provided or paid for clothing (16% compared with 12%) (graph 3.33). Conversely, Aboriginal and Torres Strait Islander people in non-remote areas were more likely than those in remote areas to have driven their relatives to places (26% compared with 19%) or to have helped with bills or debt repayments (19% compared with 16%).

Information on income and community support for Aboriginal and Torres Strait Islander people can be found in chapter 9, *Income and welfare*.

Housing infrastructure and services

Housing tenure

In 2008, more than two-thirds (70%) of Aboriginal and Torres Strait Islander people were living in a rented property and 28% were living in a home that was owned or being purchased by a household member (table 3.34). Home ownership rates were much higher in non-remote areas (34%) than in remote areas (10%). Aboriginal and Torres Strait Islander people living

in remote areas were much more likely than those in non-remote areas to be renting (86% compared with 65%).

Moving

In 2008, an estimated 303,600 Aboriginal and Torres Strait Islander people (58%) had moved within the last five years. Aboriginal and Torres Strait Islander people living in non-remote areas were more likely than those in remote areas to have moved (59% compared with 56%).

Nationally, almost half (48%) of all Aboriginal and Torres Strait Islander people had moved for housing reasons such as wanting a bigger or better home, having been asked to move by a landlord, or having been allocated housing in another area. A further three in ten Aboriginal and Torres Strait Islander people (30%) cited family reasons, for example, moving as part of a family move or moving to be closer to family or friends, while 7% had moved for employment reasons (including moving closer to work or to improve their employment prospects). Aboriginal and Torres Strait Islander people living in non-remote areas were more likely than those in remote areas to have moved for housing reasons (50% compared with 40%), but were less likely to have moved for family reasons (28% compared with 35%) or employment (6% compared with 9%) (graph 3.35).

Overcrowding

Overcrowding in housing has been calculated using the Canadian National Occupancy Standard

3.34 HOUSING TENURE, Aboriginal and Torres Strait Islander people—2008

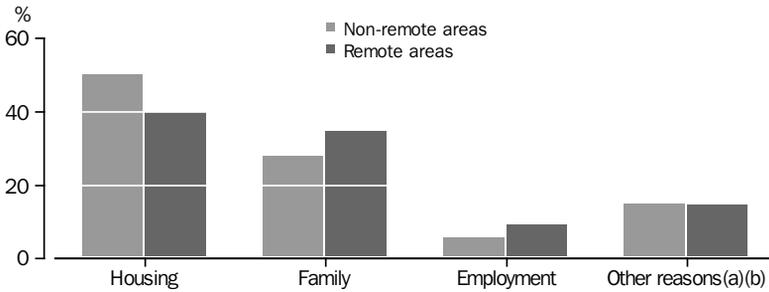
	Non-remote areas	Remote areas	Australia
	%	%	%
Owner without a mortgage	7.8	4.8	7.1
Owner with a mortgage	25.1	5.0	20.2
Participants in rent/buy schemes	*1.1	*0.5	*0.9
<i>Total home owners</i>	34.0	10.4	28.2
Renters	64.7	85.9	69.9
	no.	no.	no.
All persons(a)	393 500	126 800	520 300

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Includes persons in households of other tenure types.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.35 MAIN REASON FOR MOVING IN LAST FIVE YEARS, Aboriginal and Torres Strait Islander people

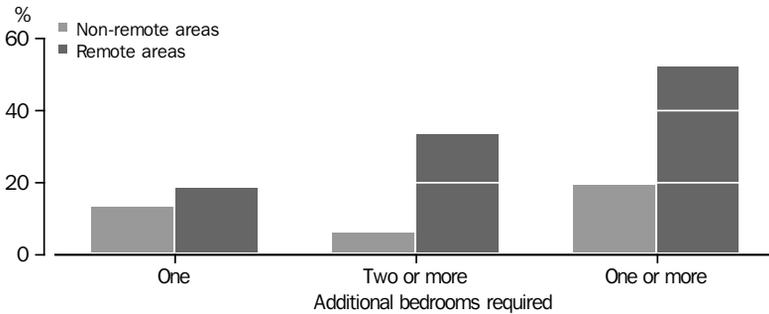


(a) Comprises health, education, lifestyle and other reasons not further described.

(b) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.36 EXTENT OF OVERCROWDING(a), Aboriginal and Torres Strait Islander people



(a) Based on the Canadian National Occupancy Standard for housing appropriateness.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

for housing appropriateness. This internationally accepted method determines the need for additional bedrooms in order to adequately house the occupants in a dwelling by comparing the number of bedrooms with the number, sex and age of people living in that dwelling. It does not measure the preferred living arrangements of households.

In 2008, just over one-quarter of Aboriginal and Torres Strait Islander people (27%) were living in homes requiring one or more additional bedrooms (20% in non-remote areas and 52% in remote areas) (graph 3.36). The extent to which dwellings were overcrowded also varied according to remoteness, with Aboriginal and Torres Strait Islander people in remote areas about five times as likely as those in non-remote areas to be living in a dwelling that required two or more additional bedrooms (33% compared with 6%).

Housing conditions

Factors that contribute to the appropriateness and functionality of housing include the availability of working facilities and the presence (or absence) of structural problems. In the 2008 NATSISS, household facilities included a stove or oven, fridge, toilet, bath or shower, washing machine, kitchen sink and laundry tub. One in eight Aboriginal and Torres Strait Islander people (13%) were living in a dwelling in which at least one of these facilities was unavailable or not working and 28% were living in a dwelling that had major structural problems (table 3.37). Just over one-third of Aboriginal and Torres Strait Islander people (35%) were living in a dwelling that had at least one of these deficits, and 7% in a dwelling that had both types of problems.

Aboriginal and Torres Strait Islander people living in remote areas were significantly more likely than those in non-remote areas to be living in a dwelling in which at least one facility was unavailable or not working (27% compared with 8%) or in a dwelling that had major structural problems (39% compared with 25%). They were also four times as likely to be living in a dwelling that had both of these types of problems (15% compared with 4%).

Access to community facilities

Community facilities play an important role in aspects of individual and collective wellbeing. Such facilities contribute to social cohesion; encourage participation in sport, recreational activity, and education; and support a healthy living environment. Nationally, nine out of ten Aboriginal and Torres Strait Islander people had access to outdoor playing fields and play areas, schools, supermarkets or shops with fresh food, and a petrol station (table 3.38). Similar proportions of Aboriginal and Torres Strait Islander people in non-remote areas and remote areas had access to Aboriginal health care services, schools, supermarkets/shops and emergency services (such as ambulance and flying doctor services). However, a higher proportion of Aboriginal and Torres Strait Islander people in non-remote areas than in remote areas had access to most other services and facilities, including a pharmacy (91% compared with 41%), taxi service (85% compared with 42%), school bus service (89% compared with 58%) and swimming pool (82% compared with 57%).

Information on housing assistance for Aboriginal and Torres Strait Islander people can be found in chapter 10, *Housing*.

3.37 HOUSING CONDITIONS, Aboriginal and Torres Strait Islander people—2008

	Non-remote areas %	Remote areas %	Australia %
Problems with housing			
At least one facility is unavailable or does not work	8.4	26.7	12.9
Dwelling has major structural problems	24.9	38.7	28.2
At least one facility is unavailable or does not work and dwelling has major structural problems	3.7	15.5	6.6
Either/both one facility is unavailable or does not work/dwelling has major structural problems	29.6	50.0	34.6
Living in a dwelling that has neither of these problems	70.4	50.0	65.4
	no.	no.	no.
All persons	393 500	126 800	520 300

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.38 COMMUNITY FACILITIES AVAILABLE LOCALLY WHEN NEEDED(a)(b), Aboriginal and Torres Strait Islander people—2008

	Non-remote areas %	Remote areas %	Australia %
Medical services			
Aboriginal health care service(c)	62.3	62.7	62.4
Hospital	76.3	55.1	71.1
Any other health or medical clinic	85.1	65.1	80.3
Pharmacy/chemist	90.9	41.1	78.8
Sporting and recreation facilities			
Outdoor playing fields and play areas	95.7	92.0	94.8
Swimming pool	82.1	57.2	76.0
Indoor sports centre for games	77.3	55.7	72.0
Other services and community facilities			
Community hall/centre	87.7	74.7	84.5
Schools(c)	94.8	93.1	94.4
Supermarket/shop with fresh food(c)	94.6	91.5	93.8
Petrol station	95.0	82.0	91.9
Police station	85.4	77.9	83.6
Emergency service(c)	79.6	77.0	79.0
School bus service	88.5	58.4	81.2
Taxi service	85.1	42.2	74.6
	no.	no.	no.
All persons	393 500	126 800	520 300

(a) Available at the suburb, town, or community level.

(b) Respondents could report more than one locally available community facility or service.

(c) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Law and justice

Personal safety

According to the 2008 NATSISS, the majority (94%) of Aboriginal and Torres Strait Islander people aged 15 years and over felt safe at home alone during the day, 80% felt safe at home alone after dark and 53% felt safe walking alone in their local area after dark. A higher proportion of males than females reported feeling safe in each of these situations (graph 3.39). In addition, females in remote areas were more likely than those in non-remote areas to report feeling safe at home at night (73% compared with 68%) and walking alone in their local area after dark (47% compared with 31%).

Neighbourhood/community problems

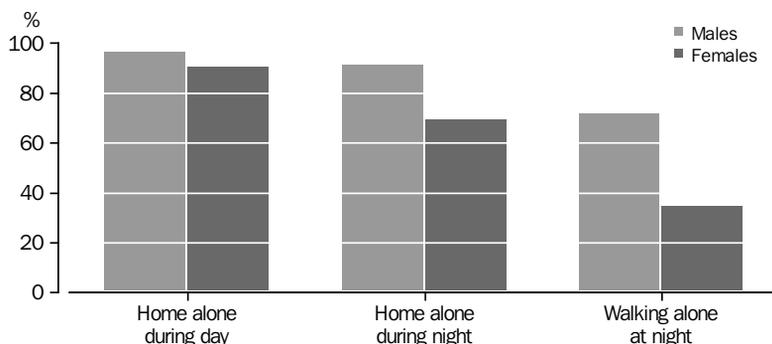
In 2008, over two-thirds (71%) of Aboriginal and Torres Strait Islander people aged 15 years and over were aware of at least one neighbourhood or community problem in their area (table 3.40). Nationally, the most commonly reported neighbourhood or community problems were Dangerous or noisy driving (46%), Alcohol (41%)

and Theft (41%). Alcohol, Illegal drugs, Problems involving youths, Assault and Family violence were reported at higher rates in remote areas than in non-remote areas.

Discrimination and other personal stressors

In 2008, an estimated 89,300 Aboriginal and Torres Strait Islander people aged 15 years and over (27%) felt that they had been discriminated against (for being Aboriginal and/or Torres Strait Islander) in the 12 months before the survey. Around one in nine people (11%) felt that they had been discriminated against by members of the public, 11% by the police, security, lawyers or a court and 8% when applying for work or at work. In addition, an estimated one in six Aboriginal and Torres Strait Islander people (18%) had experienced one or more personal stressors in the previous 12 months involving contact with the law, or which may have increased the likelihood of such contact. These personal stressors included alcohol-related problems (7%), trouble with the police (5%) witnessing violence (4%), and the individual (or a family member) having spent time in jail (4%).

**3.39 FEELINGS OF PERSONAL SAFETY, BY SEX,
Aboriginal and Torres Strait Islander people aged 15 years and over**



Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.40 NEIGHBOURHOOD OR COMMUNITY PROBLEMS, Aboriginal and Torres Strait Islander people aged 15 years and over—2008

Selected neighbourhood/community problems	Non-remote areas	Remote areas	Australia
	%	%	%
Dangerous or noisy driving(a)	47.0	43.2	46.1
Alcohol	37.1	53.9	41.3
Theft (including burglaries, theft from homes, motor vehicle theft)(a)	42.1	38.3	41.1
Illegal drugs	34.4	42.5	36.4
Vandalism/graffiti/damage to property(a)	35.2	35.7	35.3
Problems involving youths, such as youth gangs/lack of youth activity	32.8	39.1	34.4
Family violence	20.8	36.9	24.8
Assault (including sexual)	19.5	37.4	24.0
Prowlers/loiterers(a)	19.1	19.1	19.1
Total reporting one or more problems(a)(b)	70.1	74.1	71.1
	no.	no.	no.
Persons aged 15 years and over	245 600	81 500	327 100

(a) Difference between non-remote and remote rate is not statistically significant.

(b) Sum of components exceeds total as respondents could report more than one type of problem.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Victims of violence

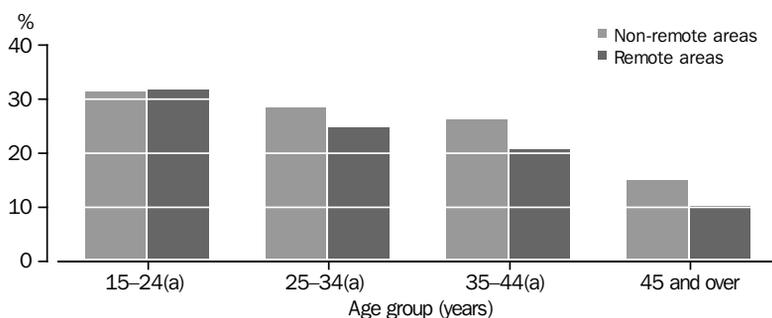
In 2008, one-quarter (25%) of Aboriginal and Torres Strait Islander people aged 15 years and over had been a victim of physical and/or threatened violence in the 12 months before the survey. Similar rates were reported for males and females and for people in non-remote and remote areas. However, among Aboriginal and Torres Strait Islander people aged 45 years and over, higher rates were reported in non-remote areas than in remote areas (15% compared with 10%) (graph 3.41).

Reporting violence

In 2008, an estimated 47,800 Aboriginal and Torres Strait Islander people aged 15 years

and over (15%) had been a victim of physical violence in the previous 12 months. In most cases, the perpetrator was known to the victim; however, the relationship between the victim and offender varied according to gender. Female victims of violence most commonly identified an ex-partner (including former boyfriend) (28%), a family member (27%), a current partner (15%) or a friend (10%) as the perpetrator, while male victims were most likely to have identified the perpetrator as someone known to them by sight only (20%), a family member (20%) a friend (15%) or someone else they knew (16%). Almost half of those who had been victims of physical violence in the last year (21,700 or 45%), had reported the most recent incident to the police. Females were twice as likely as males to have

3.41 VICTIMS OF PHYSICAL OR THREATENED VIOLENCE, BY AGE, Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

reported physical violence to the police (60% compared with 30%).

Arrests

In 2008, one in seven Aboriginal and Torres Strait Islander people aged 15 years and over (15%) had been arrested at least once in the previous five years (22% of males and 9% of females). Of the 49,100 people who had been arrested during this period, half (50%) had only been arrested once, 22% had been arrested twice and 26% had been arrested on three or more occasions. Aboriginal and Torres Strait Islander males were more likely than females to have been arrested on three or more occasions (29% compared with 20%). Similar arrest rates were reported for females in non-remote areas and remote areas. However, males in remote areas were more likely than those in non-remote areas to have been arrested in the previous five years (29% compared with 20%).

Use of legal services

In 2008, one in six Aboriginal and Torres Strait Islander people aged 15 years and over (17%) had used legal services in the 12 months before the survey. One in eight people (13%) had used Aboriginal Legal Services/Legal Aid and 5% had used private legal services or other services. People aged 15–24 years or 45 years and over were less likely to have used legal services in the last 12 months (14% of each age group), than those who were aged 25–34 or 35–44 years (22% of each age group).

Adult imprisonment

According to the ABS *Prisoners in Australia* publication, there were 7,584 Aboriginal and Torres Strait Islander prisoners in 2010, accounting for just over one-quarter (26%) of the total adult prisoner population. Acts intended to cause injury (33%) and unlawful entry with intent (15%) accounted for around half of the most serious offences/charges reported for Aboriginal and Torres Strait Islander prisoners.

The majority (91%) of Aboriginal and Torres Strait Islander prisoners were male. Although there were fewer female prisoners, Aboriginal and Torres Strait Islander women comprised 30% of the total female prisoner population, while Aboriginal and Torres Strait Islander men accounted for 25% of the total male prisoner population. Aboriginal and Torres Strait Islander prisoners tended to be younger than non-Indigenous prisoners. Just over three-quarters of Aboriginal and Torres Strait Islander prisoners (76%) were 20–39 years of age, compared with almost two-thirds (64%) of non-Indigenous prisoners.

For more information on adult Aboriginal and Torres Strait Islander prisoners, see chapter 13 *Crime and justice*. That chapter also provides information on Aboriginal and Torres Strait Islander deaths in custody (which comprised 15% of all deaths in custody in 2008).

Citizenship and governance

Ability to have a say on community issues

The ability to have a say in local issues is a key aspect of citizenship, and contributes to an individual's sense of identity, empowerment and community membership. In 2008, one-quarter (25%) of Aboriginal and Torres Strait Islander people aged 15 years and over said they felt able to have a say on community issues all or most of the time, and a further 23% some of the time. A smaller proportion of young people (aged 15–24 years) than people aged 25 years and over felt able to have a say all or most of the time (17% compared with 29%). Being able to have a say on community issues was more commonly reported by Aboriginal and Torres Strait Islander people in remote areas than in non-remote areas. Over half (55%) of people in remote areas felt that they could have a say some, all or most of the time, compared with 46% of those in non-remote areas (graph 3.42).

Connection to government and other organisations

Connection to government

In 2008, one in five Aboriginal and Torres Strait Islander people aged 15 years and over (20%) knew a member of state or federal parliament, or local government representative, and felt comfortable contacting them for information or advice. Similar proportions were reported in non-remote and remote areas, and by males and

females. Aboriginal and Torres Strait Islander people aged 25 years and over were more than three times as likely as those aged 15–24 years to have reported that they knew a member of state or federal parliament (26% compared with 8%).

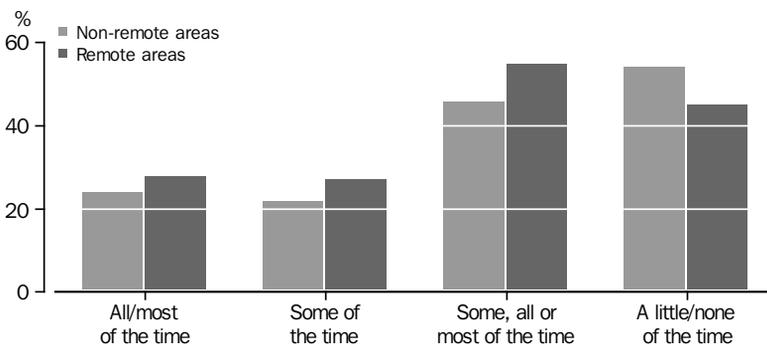
Connection to other organisations

Having a contact within an organisation may assist people with decision-making and contribute to the information available to communities. In 2008, Aboriginal and Torres Strait Islander people aged 15 years and over in non-remote areas were asked about their contact with a range of organisations including government departments, educational institutions, business organisations and community groups. Nationally, more than half (54%) said that they personally knew someone in at least one organisation, with similar rates reported for males and females (table 3.43). However, Aboriginal and Torres Strait Islander people aged 25 years and over were more likely than those aged 15–24 years, to have established one or more contacts within organisations (60% compared with 41%).

Trust in service providers

Trust and confidence in governments, service providers and people in general contributes to an individual's ability to engage on community issues and to be involved in decision-making. In 2008, most Aboriginal and Torres Strait Islander people aged 15 years and over (80%) trusted their own doctor, over two-thirds (69%) trusted the local school and more than half (62%) expressed trust in hospitals.

3.42 ABILITY TO HAVE A SAY ON COMMUNITY ISSUES, Aboriginal and Torres Strait Islander people aged 15 years and over



Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.43 HAS A PERSONAL CONTACT WITHIN ORGANISATION(S)(a), Aboriginal and Torres Strait Islander people in non-remote areas—2008

	15–24 years %	25 years and over %	15 years and over %
State or territory government department	4.9	17.4	13.3
Local council	6.2	20.4	15.7
Legal system	5.5	19.0	14.6
Health care	9.6	26.3	20.8
University/TAFE/Business college	11.3	15.6	14.2
School-related group(b)	12.6	14.3	13.7
Small business	8.4	14.9	12.8
All other organisations(c)	10.9	30.9	24.3
Has a personal contact within one or more organisations(d)	41.1	59.9	53.8
	no.	no.	no.
All persons	80 800	164 800	245 600

(a) Respondents could report personally knowing someone in more than one type of organisation.

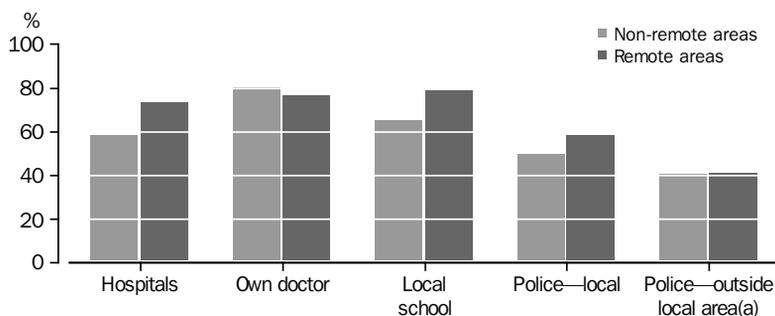
(b) Difference between 15–24 years and 25 years and over rate is not statistically significant.

(c) Comprises Federal Government, trade union, political party, media, religious/spiritual group and big business.

(d) Sum of components exceeds total as respondents could report more than one type of organisation.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

3.44 TRUSTS LOCAL SERVICE PROVIDERS, Aboriginal and Torres Strait Islander people aged 15 years and over



(a) Difference between non-remote and remote rate is not statistically significant.

Source: 2008 National Aboriginal and Torres Strait Islander Social Survey.

Aboriginal and Torres Strait Islander people in remote areas were more likely than those in non-remote areas to have reported trust in hospitals (74% compared with 59%), the local school (79% compared with 65%) and local police (58% compared with 50%) (graph 3.44). A higher proportion of people in non-remote areas

than in remote areas expressed trust in their own doctor (81% compared with 77%) and less than half (41%) of Aboriginal and Torres Strait Islander people in non-remote and remote areas expressed trust in police from outside their local area.

Cherbourg State School Language for Life project

In 2012, Australia celebrates the National Year of Reading. This article recognises the year by looking at the Cherbourg State School's Language for Life project. It was contributed by Peter Sansby, Principal, Cherbourg State School.

Cherbourg is a small town in south-eastern Queensland, located 170 kilometres to the north-west of Brisbane. Formerly known as Barambah, the town was established in 1904 as a settlement under the 1897 *Aborigines Protection and Restriction of the Sale of Opium Act*, relocating people from many different tribal groups in Queensland, each with their own language.

Cherbourg State School caters for children from preschool to Year 7. In 2010, about 180 children were enrolled at the school, all of whom were Aboriginal. The school has a focus on improving outcomes for literacy in the early years of schooling. This was enhanced in 2007 by a special class-based project to support the school's reading assistance program. With community support, the children designed

and produced a series of picture books, based on their own culture and experiences. These books are integral to engaging young readers in the context of their own culture and experiences.

From 2007, improved reading outcomes for early learners at Cherbourg State School are evident in the results of the National Assessment Program: Literacy and Numeracy (NAPLAN). Average scores in reading for Year 3 at Cherbourg State School were above those of statistically similar schools in 2007 and substantially above those of statistically similar schools in 2009 and 2010.¹ At time of writing, Cherbourg State School is continuing to engage school children in using local language in order to foster a love of reading and to preserve traditional language.



Image: Cherbourg State School classroom.



Image: Cherbourg picture books.

The Language for Life project

If the eyes are the window to a person's soul, then reading is the window to a world of imagination, adventure, future employment, pleasure and a great life. At Cherbourg State School, the challenge of teaching children to read is made all the more difficult due to a complex local language background. 'Cherbourg Home Language', 'Cherbourg Talk' and 'Mission Talk' are all names given to what linguists would refer to as a creole born from a communication necessity during the development of Barambah Settlement.

"Who dat ova der? Em pinkin dat orse!"

The sentences above are examples of the written version of the oral language spoken and understood by the children, parents and community members of Cherbourg. For those who do not have the necessary language code for the sentences, it is impossible to determine an accurate meaning. For those with the code, translated into Standard Australian English it reads:

"Who is that over there? They are throwing stones at that horse!"

The language evolved from a common 'pidgin language' resulting from the forcible relocation to Cherbourg in the early 1900s of over 50 tribes of Aboriginal peoples, who were forbidden from using their traditional languages. The dilemma for Cherbourg State School is how to acknowledge and

celebrate the reality of the Cherbourg Home Language, whilst promoting the need to develop Australian-English literacy skills as the language tool to navigate the education system.

The current Language for Life project is centred on a poster depicting Cherbourg Home Language, and was developed in partnership with the Cairns Indigenous School Support Unit. The project was undertaken by Dr Jennifer Munro, a specialist in Aboriginal and Torres Strait Islander languages. Dr Munro initiated the project by coming to the community and building necessary



Image: Cherbourg student reading.



Image: Cherbourg girl reading with elder.

relationships with elders, community members, parents, school staff and students. This was followed by numerous visits ensuring total community consultation and outlining in detail the project brief and the reasoning behind the project.

Thanks to the overwhelming generosity of the community people, and the dedication of Dr Munro, the 12-month project is in its final stages. Before the end of the year, completed versions of the poster will be distributed

throughout the community and used widely within the school as conversation starters around the importance and acknowledgement of language. Once again, the community will resonate to the sounds of traditional language being spoken by Strong and Smart² children from Cherbourg State School. However, this is not the end but merely the beginning. Future projects are already in the pipeline around traditional language reclamation. Perhaps in the future, the children of Cherbourg State School will have the opportunity to become trilingual.

Endnotes

1. My School web site, accessed 3 November 2011. Similar schools are schools serving students from statistically similar backgrounds.
2. The Strong and Smart Values Program aims to teach children a set of core values that promote peace, truth, love and non-violence in all interactions both within and out of the school.

Aboriginal and Torres Strait Islander community co-operatives and credit unions

In 2012, Australia celebrates the United Nations International Year of Co-operatives. This article is in two parts and recognises the year by looking at the role of co-operatives and credit unions in Aboriginal and Torres Strait Islander communities.

Co-operatives

Contributions are from Colin Clague of the Nungera Co-operative and Bronwyn Bancroft from the Boomalli Aboriginal Artists Co-operative.

Background

The acknowledged pioneer of co-operative social enterprise among Aboriginal and Torres Strait Islander communities is Tranby Aboriginal Co-operative College in Glebe NSW, founded in 1958.

Other early co-operatives that evolved out of training programs at Tranby were the Bunjum Rural Co-operative at Cabbage Tree Island near Ballina NSW and a group of trading co-operatives in North Queensland Aboriginal and Torres Strait Islander communities.

From the mid 1970s, a new wave of Aboriginal and Torres Strait Islander community co-operatives were formed to provide housing, health, employment and training services, principally in the eastern states. A number of artists co-operatives such as Boomalli, in Sydney, followed in the 1980s. Many of the regional Aboriginal medical services are co-operatives, while others, like Nungera at Maclean NSW, have focused on housing and employment programs.

The 1976 *Commonwealth Aboriginal Councils and Associations Act* (Cwlth) introduced an alternative, simplified form of incorporation for Aboriginal organisations, although many continue to favour the co-operative model and its underlying principles.

An example: Nungera Co-operative Society Ltd

The formation meeting for Nungera Co-operative was held in May 1975 under a large

gum tree on the roadside across from the eight houses of the Hillcrest Aboriginal Reserve at Maclean on the NSW north coast.

This is in the heartland of the Yaegl Nation, centred on the lower Clarence River. The name “Nungera” reflects both the environment of the co-operative and its ambitious objectives, meaning “... a small stream growing into a larger river – something small growing into something big”.

The assets of the community on that first day were the eight houses at Hillcrest administered by the NSW Aboriginal Lands Trust, and the unoccupied Ulgundahi Island Aboriginal Reserve where the families had spent their lives until it was closed in 1960.

A measure of the level of disadvantage of the community at the time is that the average occupancy of the eight 50 square metre cottages was 16 persons.

The first annual report of the Nungera Co-operative began with the remarks: “We are a Co-operative because we want to have an equal say, we want to share the responsibility and we want to work together to improve our living conditions and our life chances.”

There were two immediate objectives – attend to the dire housing needs of the community and address the chronic absence of employment opportunities. In the first year, five houses and the parcel of residential land opposite Hillcrest were purchased. In the years since, 11 houses have been built on this land, all with the involvement of community members in their construction. Together with houses purchased in the Maclean township, Nungera now administers a social housing program of 32 houses.



Image: TCU opening - One mob dancers. Photograph by Clive Hyde.

In the first year of the life of the co-operative, small crop farming commenced on Ulgundahi Island and over the years since, a number of enterprises have been pursued to offer training and employment opportunities to members. These include an art gallery, plant nursery, bait shop, fruit and vegetable shop, taxi service and a roadhouse.

An example: Boomalli Aboriginal Artists Co-operative

The Boomalli Aboriginal Artists Co-operative was established in Chippendale, Sydney in 1987 and is one of Australia's longest-running Aboriginal owned and operated art galleries. The word 'Boomalli' is derived from the language groups of the Kamilaroi, Wiradjuri and Bundjalung peoples of New South Wales and means "to strike; to make a mark".

Boomalli was born out of the difficulty experienced by urban Aboriginal and Torres Strait Islander artists in getting their work recognised and exhibited in commercial galleries. While the acrylic 'dot paintings' from Western Desert communities and the bark paintings of Arnhem Land were gaining acceptance in the art world in the 1980s, the work of urban Aboriginal and Torres Strait Islander artists was, at the time, viewed as less 'authentic'. To this day, the art of Boomalli members (which covers a variety of media including painting, sculpture, textiles,

photography, video and mixed media) challenges common misconceptions about urban-based Aboriginal and Torres Strait Islander art and culture and celebrates the diversity of their artistic expression in Australia.

The Co-operative aims to support Aboriginal and Torres Strait Islander artists so that they can exhibit, define and promote their art on their own terms. Boomalli also fosters artistic self-determination and business self-management on behalf of its artist members by enabling artists to take direct curatorial control of their individual exhibitions and to devise their own marketing and sales strategies.

Boomalli owns its building in Leichhardt, which is used for artist studio space; artistic, business and education workshops; forums and community meetings; board meetings; and as a community centre for Aboriginal people in Sydney. The Co-operative works closely with other cultural institutions, providing artworks for inclusion in exhibitions at other museums, galleries and public events. Recent innovations include a strategic plan to work with more cutting-edge, young artists and curators.

Traditional Credit Union

Contributed by Traditional Credit Union.

The idea of Traditional Credit Union (TCU) was originally developed by a group of

Aboriginal Elders, with the aim of providing financial services to Arnhemland communities disadvantaged by a lack of banking and other financial services.

TCU was incorporated as a credit union on 5 December 1994 using grant funding provided by the (then) Aboriginal and Torres Strait Islander Commission (ATSIC), Arnhemland Progress Association Inc and the Northern Territory Government. It has grown to eleven branches in remote Northern Territory communities, with a head office located in Darwin.

The Board of Directors includes leaders from Arnhemland communities and Balanda (non-

Indigenous) directors with skills in areas such as law and finance. TCU directors are voluntary positions.

By providing culturally appropriate, community-based banking, TCU helps Aboriginal and Torres Strait Islander people to fully participate in the economic development of their communities.

About 80% of TCU staff are Aboriginal and Torres Strait Islander people, including all staff in the remote branches. Additionally, recruitment practices are designed to ensure that Aboriginal and Torres Strait Islander applicants have the best chance of success – both in gaining employment and maintaining it.

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4

GOVERNMENT

This chapter was contributed by the Politics and Public Administration Section of the Library of the Commonwealth Parliament (March 2012).

Australia has a federal system of government within which there are four divisions: Commonwealth, state, territory and local. This chapter outlines the basic features of the Australian system of government.

The 42nd Commonwealth Parliament was prorogued on 19 July 2010 for a general election for all members of the House of Representatives, half of the 72 state senators and the four territory senators on 21 August 2010. Results of the 2010 and earlier elections can be found on the website of the Australian Electoral Commission <<http://www.aec.gov.au>>.

Information on government finance can be found in chapter 28 *Government finance*, while information on the Australian Government's international engagement is in chapter 5 *International relations*.

Constitutional basis of government

Australia is a constitutional democracy based on a federal division of powers between Commonwealth, state, territory and local levels of government. The constitutional basis of government consists of:

- the Commonwealth Constitution, including amendments
- state and territory constitutions, including amendments
- legislation passed by the Commonwealth Parliament and the state and territory parliaments
- judgments by the High Court of Australia and
- significant conventions of responsible government adopted from the British system of government that are in use at the Commonwealth, state and territory levels of government.

Commonwealth Constitution

The national Constitution is found in the *Commonwealth of Australia Constitution Act 1900* (Cwlth), a British Act that became law in July 1900 and came into force on 1 January 1901.

Any proposed law for the alteration of the Commonwealth Constitution must be passed by an absolute majority of each house of the Commonwealth Parliament (except in circumstances specified in section 128 of the Constitution, which permits a referendum to proceed if passed by only one chamber). An amendment proposal must also be submitted to a referendum of the electors in each state and territory, where it must be approved by a majority of the voters in a majority of the states, as well as a majority of all voters.

Since 1901, 44 proposed amendments have been submitted to referenda. The consent of the electors has been given in regard to only eight matters:

- 1906 – election of senators
- 1910 – state debts
- 1928 – state debts
- 1946 – social services
- 1967 – Aboriginal people

- 1977 – Senate casual vacancies
- 1977 – retirement age for federal judges and
- 1977 – the right of territory electors to vote in constitutional referenda.

Each state and territory has its own constitution found in legislation. Where a law of a state is inconsistent with a law of the Commonwealth, the latter law prevails and the former law is, to the extent of the inconsistency, invalid.

The Sovereign

Since 7 February 1952, the Australian Sovereign has been Her Majesty Queen Elizabeth II.

On 6 November 1999, a vote to establish Australia as a republic was put to a national referendum. The proposal was defeated, with 54.9% of electors voting against it.

The Governor-General

The Governor-General is the representative of the Sovereign, appointed by the Sovereign on the advice of the Australian Prime Minister.

Her Excellency, Ms Quentin Bryce AC, has been Governor-General since 5 September 2008.

Power and functions

The Governor-General exercises the executive power of the Commonwealth of Australia on the advice of the Prime Minister. Certain other powers and functions conferred by the Constitution include the powers to:

- appoint times for holding the sessions of the Parliament
- prorogue Parliament
- dissolve the House of Representatives
- dissolve the House of Representatives and the Senate in the event of a double dissolution
- cause writs to be issued for general elections of members of the House of Representatives
- assent in the Queen's name to a proposed law passed by both Houses of the Parliament and
- appoint ministers of state for the Commonwealth of Australia.

The Governor-General, as the Queen's representative, is Commander-in-Chief of the Australian Defence Force.

Many Acts of the Commonwealth Parliament provide that the Governor-General may make Regulations to give effect to such Acts. The Governor-General may also be authorised by statute to issue proclamations, for example, to declare an Act in force. The Governor-General has been given power by statute to legislate for certain Australian territories.

The Governor-General also possesses what are referred to as 'reserve powers'. These may be used without the advice of the Prime Minister, but are used only in times of political uncertainty.

The Queen may appoint an Administrator of the Commonwealth when the Governor-General is out of the country, ill, or when the position of Governor-General is vacant. By convention, the longest-serving state governor is appointed as Administrator.

Commonwealth Parliament

Commonwealth legislative power is vested in the Commonwealth Parliament, comprising the House of Representatives and the Senate. There are currently 226 members of the Parliament (MPs) – 150 members of the House of Representatives and 76 Senators.

Powers of Parliament

Apart from the constitutional requirement that all financial legislation must originate in the House of Representatives and that the Senate cannot amend such legislation, the two houses have similar powers. The fact that the Senate can reject financial legislation makes it potentially one of the most powerful upper houses in the world.

As Australia has a federal system of government, the formal powers of the Commonwealth Parliament are constitutionally limited to areas of national importance such as trade and commerce, taxation, postal services, foreign relations, defence, immigration, naturalisation, quarantine, currency and coinage, weights and measures, copyright, patents and trademarks. However, High Court decisions, Commonwealth-state agreements and use by the Commonwealth of the constitutional power to make grants to the states

and territories, have seen the Commonwealth gain influence in regard to various other matters including industrial relations, financial regulation, companies and securities, health and welfare, and education.

Functions of Parliament

Parliament has five primary functions:

- to provide for the formation of a government
- to make the law
- to provide a forum for popular representation
- to scrutinise the actions of government and
- to provide a forum for criticism of the government.

The formation of a government is the most important outcome of a general election. Either the government is returned by virtue of retaining a majority of seats in the House of Representatives, or the opposition party or a coalition of parties wins a majority of seats, resulting in the formation of a new government. A new government could also be formed on any occasion between elections if the majority party changes its leader, or loses its majority (e.g. as a result of a by-election) or is defeated in an important vote in the House of Representatives. The last occurrence of government changing hands between elections occurred in October 1941.

More than half of Parliament's time is taken up with the consideration of proposed legislation. Between 150 and 250 Bills are passed each year and most are not contentious, either being 'machinery' legislation necessary for the orderly processes of government, or Bills that propose alterations to existing legislation. Most of the Bills are government Bills; legislation sponsored by private members is rare.

The representation of the people is an important role of members of the House of Representatives and Senators. Working for their constituents occupies a great deal of their time. The relative importance of this role may be judged by the high proportion of time spent by MPs in their electorates and away from Parliament. Since the beginning of 2000, Parliament has averaged 65 sitting days per year.

The scrutiny function is seen most obviously in the formal periods of Question Time, held in both houses as part of each day's sitting.

Question Time is perhaps the best-known aspect of parliamentary proceedings and is attended by many of the visiting public. Less well-known are the activities of parliamentary committees that are established so that Parliament's legislative, representation and scrutiny functions can be carried out thoroughly and with the benefit of expert advice. These committees undertake the scrutiny of government operations as well as frequent inquiries into a range of current issues.

Parliament also acts as a forum where peoples' concerns can be aired prominently. This can be in Question Time, in debates on major issues, in grievance debates, in adjournment debates and at various stages of the legislative process.

Australian Government

Prime Minister

The office of Prime Minister is not recognised by the Constitution, being a conventional part of the governmental arrangements. It is also a matter of convention that the Prime Minister is always a member of the House of Representatives.

After an election, the Governor-General sends for the leader of the party, or coalition, that has secured a majority in the House of Representatives, and commissions that person to assume the office of Prime Minister and to form a government.

The Prime Minister has the following powers:

- advising the Sovereign on the appointment of the Governor-General
- acting as the sole source of formal advice for the Governor-General
- advising the Governor-General as to when Parliament should be dissolved
- setting the date for House of Representatives elections

- allocating positions in the Cabinet and
- chairing Cabinet meetings.

The Hon Julia Gillard MP (Australian Labor Party) has been Prime Minister since 24 June 2010.

Ministers

The Prime Minister nominates members of his or her parliamentary party or coalition to serve as ministers, responsible for administering government departments such as the Treasury, the Department of Foreign Affairs and Trade and the Department of Defence. The Constitution requires that all ministers be either a member of the House of Representatives or a Senator. If a new minister is not an MP, it is obligatory for that minister to become an MP within three months of his/her appointment. Ministers may be appointed or replaced at any time between elections.

From time to time, certain members of the Commonwealth Parliament have been appointed by governments to assist ministers in their work. Such persons have been known by a variety of designations, including parliamentary under-secretary and assistant minister. The current term is parliamentary secretary.

The ministries since Federation are listed in table 4.1.

Cabinet

Senior ministers are members of the Cabinet, meetings of which are chaired by the Prime Minister. Cabinet is not a body that is recognised by the Constitution, being a conventional part of governmental arrangements. Despite this, Cabinet effectively controls not only a government's legislative program, but also government departments of state. In effect, therefore, Cabinet is the dominant political and administrative element in Australia's national government.

Particulars of the second Gillard Ministry, comprising Cabinet ministers and the outer ministry, are shown in table 4.2.

4.1 MINISTRIES SINCE 1901—March 2012

<i>Number</i>	<i>Ministry</i>	<i>Period of office</i>	<i>Party</i>
1	Barton	1 January 1901 to 24 September 1903	Protectionist
2	Deakin	24 September 1903 to 27 April 1904	Protectionist
3	Watson	27 April 1904 to 17 August 1904	Australian Labor Party
4	Reid-McLean	18 August 1904 to 5 July 1905	Free Trade-Protectionist
5	Deakin	5 July 1905 to 13 November 1908	Protectionist
6	Fisher	13 November 1908 to 2 June 1909	Australian Labor Party
7	Deakin	2 June 1909 to 29 April 1910	Protectionist-Free Trade-Tariff Reform
8	Fisher	29 April 1910 to 24 June 1913	Australian Labor Party
9	Cook	24 June 1913 to 17 September 1914	Liberal
10	Fisher	17 September 1914 to 27 October 1915	Australian Labor Party
11	Hughes	27 October 1915 to 14 November 1916	Australian Labor Party
12	Hughes	14 November 1916 to 17 February 1917	Nationalist Labour
13–14	Hughes	17 February 1917 to 9 February 1923	Nationalist
15	Bruce-Page	9 February 1923 to 22 October 1929	Nationalist-Country Party
16	Scullin	22 October 1929 to 6 January 1932	Australian Labor Party
17–18	Lyons	6 January 1932 to 7 April 1939	United Australia Party
19	Page	7 April 1939 to 26 April 1939	Country Party-United Australia Party
20	Menzies	26 April 1939 to 14 March 1940	United Australia Party
21–22	Menzies	14 March 1940 to 29 August 1941	United Australia Party-Country Party
23	Fadden	29 August 1941 to 7 October 1941	Country Party-United Australia Party
24–25	Curtin	7 October 1941 to 6 July 1945	Australian Labor Party
26	Forde	6 July 1945 to 13 July 1945	Australian Labor Party
27–28	Chifley	13 July 1945 to 19 December 1949	Australian Labor Party
29–33	Menzies	19 December 1949 to 26 January 1966	Liberal-Country Party
34–35	Holt	26 January 1966 to 19 December 1967	Liberal-Country Party
36	McEwen	19 December 1967 to 10 January 1968	Liberal-Country Party
37–39	Gorton	10 January 1968 to 10 March 1971	Liberal-Country Party
40	McMahon	10 March 1971 to 5 December 1972	Liberal-Country Party
41–43	Whitlam	5 December 1972 to 11 November 1975	Australian Labor Party
44–48	Fraser	11 November 1975 to 11 March 1983	Liberal-National Country Party
49–52	Hawke	11 March 1983 to 20 December 1991	Australian Labor Party
53–55	Keating	20 December 1991 to 11 March 1996	Australian Labor Party
56–59	Howard	11 March 1996 to 3 December 2007	Liberal-Nationals
60	Rudd	3 December 2007 to 24 June 2010	Australian Labor Party
61–	Gillard	24 June 2010 to	Australian Labor Party

Source: *Library of the Commonwealth Parliament.*

4.2 GILLARD MINISTRY—March 2012

CABINET MINISTERS

Prime Minister	The Hon. Julia Gillard MP
Treasurer and Deputy Prime Minister	The Hon. Wayne Swan MP
Minister for Tertiary Education, Skills, Science and Research	Senator the Hon. Chris Evans
Minister for School Education, Early Childhood and Youth	The Hon. Peter Garrett MP
Minister for Foreign Affairs	Senator the Hon. Robert Carr
Minister for Trade and Competitiveness	The Hon. Dr Craig Emerson MP
Minister for Finance and Deregulation	Senator the Hon. Penny Wong
Minister for Health	The Hon. Tanya Pliibersek MP
Attorney-General and Minister for Emergency Management	The Hon. Nicola Roxon MP
Minister for Broadband, Communications and the Digital Economy and Minister Assisting the Prime Minister on Digital Productivity	Senator the Hon. Stephen Conroy
Minister for Defence	The Hon. Stephen Smith MP
Minister for Immigration and Citizenship	The Hon. Chris Bowen MP
Minister for Agriculture, Fisheries and Forestry and Minister Assisting on Queensland Floods Recovery	Senator the Hon. Joe Ludwig
Minister for Families, Community Services and Indigenous Affairs and Minister for Disability Reform	The Hon. Jenny Macklin MP
Minister for Housing, Minister for Homelessness and Minister for Small Business	The Hon. Brendan O'Connor MP
Minister for Sustainability, Environment, Water, Population and Communities	The Hon. Tony Burke MP
Minister for Infrastructure and Transport	The Hon. Anthony Albanese MP
Minister for Climate Change and Energy Efficiency and Minister for Industry and Innovation	The Hon. Greg Combet MP
Minister for Resources and Energy and Minister for Tourism	The Hon. Martin Ferguson MP
Minister for Mental Health and Ageing, Minister for Social Inclusion and Minister Assisting the Prime Minister on Mental Health Reform	The Hon. Mark Butler MP
Minister for Employment and Workplace Relations and Minister for Financial Services and Superannuation	The Hon. Bill Shorten MP
Minister for Regional Australia, Regional Development and Local Government and Minister for the Arts	The Hon. Simon Crean MP

OUTER MINISTRY

Minister for Human Services	Senator The Hon. Kim Carr
Minister for Home Affairs, Minister for Justice and Minister for Defence Materiel	The Hon. Jason Clare MP
Assistant Treasurer and Minister Assisting for Deregulation	The Hon. David Bradbury MP
Minister for Veterans' Affairs, Minister for Defence Science and Personnel, Minister for Indigenous Health and Minister Assisting the Prime Minister on the Centenary of ANZAC	The Hon. Warren Snowden MP
Minister for Community Services, Minister for Indigenous Employment and Economic Development and Minister for the Status of Women	The Hon. Julie Collins MP
Minister for Sport, Minister for Multicultural Affairs and Minister Assisting for Industry and Innovation	Senator the Hon. Kate Lundy
Minister for Employment Participation and Minister for Early Childhood and Childcare	The Hon. Kate Ellis MP
Special Minister of State and Minister for the Public Service and Integrity	The Hon. Gary Gray MP

Source: *Library of the Commonwealth Parliament.*

The Opposition

In Westminster-derived governments, such as Australia's, the Opposition has a recognised and formal status, being recognised in the Standing Orders of the Parliament and in legislation. The Opposition is seen as the alternative government and typically forms a 'shadow Cabinet' of MPs who prepare themselves to take on the reins of government. The Opposition also has the role of acting as the main critic of the government and of offering to the community an alternative set of policies.

Mr Tony Abbott MP (Liberal Party of Australia) has been Leader of the Opposition since 1 December 2009.

Commonwealth elections

Generally, the 150 members of the House of Representatives, half of the 72 state senators and the four territory senators are elected approximately every three years.

Voting methods

Members of the House of Representatives are elected by voters using the alternative vote electoral system (known in Australia as 'preferential voting'). Senators are elected by voters using the voting method known as proportional representation (single transferable vote variant).

Franchise

Any Australian citizen aged 18 years and over, or British subject who was on the Commonwealth Roll as at 25 January 1984, is qualified to enrol and vote at Commonwealth elections. Residence in a particular electorate for at least a period of one month is also a requirement. Enrolment and attendance at a polling place on polling day (except under certain lawful exceptions) are compulsory for all eligible persons.

Parliamentary terms

Members of the House of Representatives are elected for a maximum term of three years, although elections may be called earlier. Senators have fixed terms of six years. Normally half the Senate retires every three years, and half-Senate elections are usually held at

the same time as elections for the House of Representatives, though they need not be. The most recent separate elections for each house occurred in 1970 (Senate) and 1972 (House of Representatives).

At times of disagreement between the House of Representatives and the Senate, the two houses may be dissolved and an election called for both. Of the 47 Commonwealth elections, six have been 'double dissolution' elections, the most recent of which occurred in 1987.

There have been 43 parliaments since Federation. The longest parliament was the third, which ran from 20 February 1907 to 19 February 1910, and the shortest was the eleventh, which ran from 6 February to 16 September 1929.

The 43rd Parliament was required to meet within 30 days of the day appointed for the return of the electoral writs in the 21 August 2010 election. Parliament commenced on 28 September 2010. For details of the 2010 election, see <<http://www.aec.gov.au>>.

Electorates

For the purpose of House of Representatives elections, each state or territory is divided into single-member electorates according to the number of members of the House of Representatives to which the state or territory is entitled (table 4.3). The article *Drawing House of Representatives electorate boundaries*, which discusses electoral redistributions in detail, can be found in *Year Book Australia 2005*. In Senate elections, the whole state or territory constitutes a single electorate.

4.3 ENROLMENT AND ELECTORATES —August 2010

	<i>Electors enrolled</i>	<i>Electorates</i>
New South Wales	4 610 795	48
Victoria	3 561 873	37
Queensland	2 719 360	30
Western Australia	1 362 534	15
South Australia	1 104 698	11
Tasmania	358 609	5
Australian Capital Territory	247 941	2
Northern Territory	121 059	2
Total	14 086 869	150

Source: Australian Electoral Commission.

2010 election

The House of Representatives was dissolved on 19 July 2010. Elections for the House of Representatives and half of the Senate were held on 21 August 2010.

The 2010 federal election resulted in a hung parliament, with both the Australian Labor Party and the Liberal/National Coalition gaining 72 seats. The Australian Labor Party was able to form government with the support of three independents and the Australian Greens member. The Labor Party formed Australia's 61st Commonwealth Government.

The Australian Labor Party did not gain control of the Senate. The Australian Greens, Family First and independents held the balance of power until 30 June 2011. From 1 July 2011, the Australian Greens held the balance of power in the Senate.

State government

The Australian nation was created by the federation of the six British self-governing colonies of New South Wales, Tasmania, Queensland, Western Australia, Victoria and South Australia, which became the 'Original States' in the Commonwealth of Australia. Under the constitutional arrangements that came into existence in 1901, significant powers were retained by these states. State administrative responsibilities include education, police, public health, public transport, agriculture, roads, community services, corrective services, mineral resources, emergency services, ports and the oversight of local government.

Governors

A state governor is the representative of the Sovereign, appointed by the Sovereign on the advice of the state's premier. The governor exercises the executive power of his or her state on the advice of the premier. Other powers and functions are similar to the powers exercised at the Commonwealth level by the Governor-General.

In addition, governors have been invested with various statutory functions by state constitutions and the *Australia Act 1986* (Cwlth), as well as under the Acts of the parliaments of the states. For example, governors may administer the

prerogative of mercy by the reprieve or pardon of criminal offenders, and may remit fines and penalties.

The governors also possess what are referred to as 'reserve powers'. These may be used without the advice of the premier, but are used only in times of political uncertainty.

The governors of the states at March 2012 are shown in table 4.4.

Governments

Each state is governed by a ministry headed by a premier. The state cabinet, chaired by the premier, is the centre of political and administrative power in each state.

Each state has a formal opposition, with the same role as at the Commonwealth level.

Table 4.5 lists the premiers at March 2012.

Parliaments

Five of the six Australian states have a bicameral parliament. In Queensland, there is a single house. The lower houses in New South Wales, Victoria, Queensland and Western Australia are entitled Legislative Assembly; in South Australia and Tasmania the term is House of Assembly. The title of the five upper houses is Legislative Council.

4.4 GOVERNORS—March 2012

New South Wales	Her Excellency Professor Marie Bashir AC
Victoria	His Excellency Alex Chernov AO QC
Queensland	Her Excellency Ms Penelope Wensley AC
Western Australia	His Excellency Malcolm McCusker AO QC
South Australia	His Excellency Rear Admiral Kevin Scarce AO CSC
Tasmania	His Excellency the Hon. Peter Underwood AC

Source: *Library of the Commonwealth Parliament.*

4.5 PREMIERS—March 2012

New South Wales	The Hon. Barry O'Farrell MP (LP)
Victoria	The Hon. Ted Baillieu MLA (LP)
Queensland	The Hon. Campbell Newman MLA (LNP)
Western Australia	The Hon. Colin Barnett MLA (LP)
South Australia	The Hon. Jay Weatherill MLA (ALP)
Tasmania	The Hon. Lara Giddings MHA (ALP)

Source: *Library of the Commonwealth Parliament.*

Elections

The members of the parliaments of each state are elected by the residents of that state using either the alternative vote ('preferential voting') or proportional representation (single transferable vote variant). Preferential voting is used to elect members to the Legislative Assemblies in New South Wales, Victoria, Queensland, Western Australia and South Australia. Proportional Representation (PR) is used for elections for their respective Legislative Councils. In Tasmania, the reverse occurs, with PR used for elections for the Legislative Assembly and preferential voting used for the Legislative Council.

Territory government

The Commonwealth Government assumed control of both the Northern Territory and the Australian Capital Territory in 1911. The Northern Territory (since 1978) and the Australian Capital Territory (since 1989) are self-governing territories with powers almost matching those of the states.

The Northern Territory has been working towards full statehood, though a referendum on the question was rejected by Northern Territory voters in 1998. Norfolk Island was accepted into the Commonwealth as an Australian territory in 1914. The *Norfolk Island Act 1979* (Cwlth) grants a considerable degree of self-government to that territory. The Northern Territory and Norfolk Island both have an administrator of the territory, appointed by the Governor-General (table 4.6). The Administrator acts as a representative both of the Crown and of the Australian Government, as well as carrying out other duties according to the *Northern Territory (Self-Government) Act 1987* (Cwlth) and the *Norfolk Island Act 1979* (Cwlth) respectively.

4.6 ADMINISTRATORS—March 2012

Northern Territory	The Hon. Sally Thomas
Norfolk Island	The Hon. Owen Walsh

Source: *Library of the Commonwealth Parliament.*

4.7 CHIEF MINISTERS—March 2012

Northern Territory	The Hon. Paul Henderson MLA (ALP)
Australian Capital Territory	The Hon. Katy Gallagher MLA (ALP)
Norfolk Island	The Hon. David E. Buffett MLA

Source: *Library of the Commonwealth Parliament.*

The Australian Capital Territory has neither administrator nor governor.

Each territory has an elected Legislative Assembly, with a wide range of powers, with a government headed by a chief minister (table 4.7). The Northern Territory and the Australian Capital Territory have a formally recognised opposition. Norfolk Island's Legislative Assembly does not possess a formal opposition.

Jervis Bay Territory, and the external territories of the Cocos (Keeling) Islands, Christmas Island, Coral Sea Islands, and Ashmore and Cartier Islands, make up the non-self governing territories of Australia.

The resident communities of Jervis Bay Territory, the Cocos (Keeling) Islands and Christmas Island are provided with an extensive range of government services. The Cocos (Keeling) Islands and Christmas Island both have an elected local government, and residents may vote in Commonwealth parliamentary elections in the electorate of Lingiari (Northern Territory). Residents of Jervis Bay Territory are enrolled in the Commonwealth electorate of Fraser (Australian Capital Territory).

Australia's activities in its Antarctic Territory are governed by the *Antarctic Treaty* (1959) (see the article *Australia and Antarctica*, in *Year Book Australia 2007*). Under this agreement, the nations active in Antarctica consult on the uses of the continent, with a commitment that it should not become 'the scene or object of international discord'.

Local government

Local government has a limited constitutional position in Australia, being organised under state or territory legislation upon broadly similar lines across Australia. There are no local councils in the Australian Capital Territory, where the Territory government has direct responsibility for local services. Local government in Australia provides a relatively narrow range of services compared with many other nations.

Each state and the Northern Territory has a number of local government areas, known variously as cities, towns, municipalities, boroughs, shires or districts. The main variation is the existence of various councils in the Northern

Territory that are based on rural Aboriginal and Torres Strait Islander communities. The generic local body is the council and in December 2011, there were 565 local councils in Australia. Councillors and aldermen are elected by local residents, though councils may be dismissed by state governments – and occasionally are.

Within each local government area, various services are provided, though there are many variations between states as well as between urban and rural councils. The Brisbane City Council is responsible for the provision of a wide range of services across most of Brisbane; by contrast, many small rural councils provide a relatively small number of services. Local government responsibilities may include sanitary and garbage services; road, street and bridge construction; water supply and sewerage; local libraries and museums; fire brigades; harbour services; town planning, and some local health and welfare services.

The scope of local government duties differs a great deal around the nation. In all states, many of the responsibilities of a local nature are performed either directly by the state government or through semi-government authorities, known as statutory authorities. The provision of household water, for instance, is often undertaken by a statutory authority operating under state legislation.

Public service

Numbers

An essential part of government in Australia is the public service that exists at each level. The total number of public sector employees at June 2010 was 1,843,500 persons, or approximately 16% of the entire Australian workforce.

Agencies

Public servants are employed by:

- Commonwealth departments of state, such as the Department of Defence
- state departments, such as education departments
- territory departments, such as the Australian Capital Territory and Northern Territory Departments of the Chief Minister

- parliamentary departments – Commonwealth, state and territory
- the staff of members of parliament
- government-owned companies
- statutory authorities, such as the various state electricity authorities, and
- local government.

Functions

There are three main functions performed by the public service agencies:

- policy advice
- the oversight of policy implementation and
- the provision of the administrative machinery required to deliver the policies of the relevant government or agency.

Political parties

The party system

An Australian party system had begun to develop during the last years of the colonial period in the 1890s, to the extent that most seats in the first Commonwealth Parliament were won by candidates from just three major groups, one of which was the Australian Labor Party. The outline of the modern system could be seen by 1910, following the fusion of two non-Labor parties in opposition to Labor. In 1919, the Country Party won a significant number of seats, and by 1923 it had joined the major non-Labor party in the first of many conservative coalition governments. Today, the party battle at the Commonwealth level and in New South Wales, Queensland, Victoria and Western Australia is dominated by the contest between Labor and the Liberal and National (formerly Country) parties. In South Australia, Tasmania and the Australian Capital Territory the major contest is between the Liberal and Labor parties, while in the Northern Territory the Country Liberal Party opposes the Labor Party.

Many minor parties have contested House of Representatives and Assembly elections, but only in the Tasmanian House of Assembly and Australian Capital Territory Legislative Assembly elections has the dominance of the major parties ever been challenged by

minor parties or independents. The use of proportional representation for most of the upper house elections has given minor parties and independents a realistic chance of winning Senate and Legislative Council seats. Since 1980, the major parties have controlled the Senate and Legislative Councils only intermittently.

Parties and Parliament

Australian parliaments have been dominated by the tightly controlled parties since the early 20th century. Strong party discipline and party unity has made political attitudes more predictable and tended to narrow the parliamentary debate. This has been the key factor in a decline in the significance of parliament relative to that of the executive.

The impact of parties can especially be seen in the operations of each parliamentary house, particularly in the legislative process. Opposition parties spend much time criticising governments and legislative amendments are often moved. However, because governments usually enjoy a majority in these lower houses, questions may be avoided, amendments cannot be forced, and whether or not opposition views are accepted depends on the wishes of the government of the day.

It has been a different story whenever the Senate and the Legislative Councils have not been controlled by government, for the upper

houses are powerful and all can alter or reject government legislation. However, when a government controls an upper house, that body's influence upon legislation tends to decline. For example, when the coalition Commonwealth Government controlled both national houses from July 2005 to July 2008, the Senate's impact on legislation was lessened significantly.

Reference notes

The Commonwealth Constitution is reproduced in *Year Book Australia* from time to time, the latest being the 1998 edition. Details of constitutional referenda are found in *Year Book Australia 1974*, *Year Book Australia 1977–78* and *Year Book Australia 1986*.

In *Year Book Australia 1924*, the names are given of each ministry from Federation until February 1923. *Year Book Australia 1953* contains a list of ministries, which covers the period between February 1923 and July 1951. The names of members of subsequent ministries are listed in issues of *Year Book Australia 1953* to 1975–76 inclusive, and in successive issues from 1980.

Full details of Commonwealth elections are issued by the Australian Electoral Commission following each election. State and territory election details are issued by the relevant electoral offices or commissions.

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5

INTERNATIONAL RELATIONS

This chapter was contributed by the Australian Government Department of Foreign Affairs and Trade and the Australian Agency for International Development (AusAID). A special article was provided by the Australian Bureau of Statistics. (March 2012)

Australia's foreign and trade policies are designed to advance the security and prosperity of Australia and Australians in an increasingly complex and challenging international environment.

This chapter examines a number of aspects of Australia's international engagement, including bilateral and multilateral relationships; human rights policy; and interests in the areas of security, economy and the environment. It includes an overview of the role of the Department of Foreign Affairs and Trade in international relations and detailed information on Australia's overseas aid program.

This edition of *Year Book Australia* includes a special article on the role of the Australian Bureau of Statistics in international relations.

Related information can be found in chapters 6 *Defence*, 28 *Government finance* and 31 *International accounts and trade*. A number of chapters also include an International comparisons section showing data comparing Australia with other countries.

Australia in an international context

Australia's foreign and trade policies are key tools for promoting the security and prosperity of Australians. The international environment, with its changing economic and strategic situations, presents both opportunities and challenges in advancing Australia's national interests.

Opportunities include expanded trade access, new forms of security co-operation and broader bilateral and multilateral engagement to advance shared goals. Terrorism and nuclear proliferation, as well as rising trade protectionism and climate change, are among the key challenges the nation must address to protect the security and economic prosperity of Australians at home and abroad.

Strong engagement with countries in Asia and the Pacific region as well as Australia's key strategic ally, the United States of America, is central to the government's international efforts to ensure Australia's security. Australia has worked with key partners to strengthen the East Asia Summit (EAS), the ASEAN Regional Forum (ARF) and Pacific Islands Forum (PIF) in order to build co-operation to address regional political, security and economic challenges; develop a sense of community; and promote peaceful, rules-based norms. The government also engages with the international community through multilateral partners, including the United Nations, to combat transnational security challenges and enhance good governance, human rights and sustainable development.

Australia's prosperity is in part dependent on international trade and investment. Promoting trade liberalisation is an important part of the government's overall strategy for enhancing the nation's economic wellbeing. This is done both multilaterally, through the World Trade Organization (WTO), and by securing high quality Free Trade Agreements (FTAs) with key bilateral and regional partners. Against the backdrop of fragility in the global economy and the need for a co-ordinated international response, the government also works closely with key global and regional partners in the G20 and Asia-Pacific Economic Cooperation (APEC) forum.

Australia's bilateral relationships

Australia pursues bilateral relationships with a range of countries in order to promote shared interests and deal with shared challenges. Australia's international engagement focuses on those countries with the greatest bearing on its strategic and economic outlook.

United States

Australia's relationship with the United States is fundamental to Australia's broader international security and economic interests. At the heart of security relations between Australia and the United States is the ANZUS Treaty, signed in 1951, which binds the two countries to co-operate on military and security issues. The ANZUS alliance continues to underpin a dynamic and broad-ranging security relationship that involves sharing technology, training and intelligence, and co-operating extensively on issues such as counter-terrorism, non-proliferation and humanitarian activities. By providing one of the anchors for US engagement in the region, the ANZUS alliance makes an important contribution to the stability and prosperity of the Asia Pacific.

The United States remains Australia's largest two-way investment partner. In 2010–11, the United States was also Australia's largest services trading partner and third largest merchandise trading partner. In 2010–11, Australia exported goods and services to the United States worth \$14.2 billion and imported goods and services from the United States worth \$36.3 billion. Major Australian exports to the United States include professional services, beef and alcoholic beverages. The Australia-US Free Trade Agreement (AUSFTA) continues to provide new opportunities for Australian exporters and investors since entering into force on 1 January 2005. The governments of Australia and the United States regularly discuss bilateral, regional and global trade and economic issues that affect the wealth and prosperity of the two countries. In 2011, Australia worked closely with the United States during its year as host of the APEC forum to improve regional economic integration. Both countries continue to advocate trade liberalisation through the Trans-Pacific Partnership (TPP).

Australia maintains its strong alliance with the United States through regular high-level talks. AUSMIN, which is held annually, brings together the Australian Ministers for Foreign Affairs and for Defence with the US Secretaries of State and Defense. The AUSMIN meeting in September 2011 underlined the contemporary relevance of the ANZUS treaty in dealing with new and emerging security issues, including in the cyber realm.

President Obama's November 2011 visit to Australia included an historic address to the Australian Parliament, which highlighted the enduring close friendship between the two countries and commemorated 60 years since the signing of the ANZUS treaty. During the visit, Prime Minister Gillard and President Obama announced two new initiatives that will significantly enhance defence co-operation between Australia and the United States. Starting in 2012, Australia will welcome initial deployments of 250 US Marines to Darwin and northern Australia where they will conduct exercises and training on a rotational basis with the Australian Defence Force. Closer co-operation between the Royal Australian Air Force and the US Air Force will also result in increased rotations of US aircraft through northern Australia.

Non-government links between Australia and the United States are extensive. Australian business, education and culture were promoted in the United States by 40 'G'Day USA 2011' events on issues such as clean energy and sustainable cities. In 2010, there were 472,200 visitor arrivals from the United States – Australia's third largest inbound market for visitor arrivals.

North Asia

North Asia is of key strategic and economic significance to Australia. Its markets account for over half of Australia's merchandise exports. The stability and economic development of the region, and its relationship with the United States, bear directly on Australia's security and prosperity.

Japan

The Australia-Japan relationship is among Australia's closest and most important. It is underpinned by shared values, intersecting interests and common approaches to international security challenges. Both countries are industrialised democracies committed

to prosperity and stability in the Asia-Pacific region. Australia and Japan are working together to identify new areas to broaden the existing partnership on security matters, including counter-terrorism and counter-proliferation. The 2007 Joint Declaration on Security Co-operation was a milestone in the bilateral relationship. The two countries are implementing the ambitious security arrangements envisaged in the declaration, including through regular foreign and defence ministers' talks, joint exercises and training. Helping Japan respond to the devastating earthquake and tsunami in March 2011 became a major focus of Australia's bilateral co-operation in 2011 and contributed to deeper and more enduring community contacts and understanding between the two countries.

Japan remained Australia's second largest trading partner and export market in 2010–11 and third largest source of foreign direct investment. Australia's merchandise exports to Japan totalled \$47 billion in 2010–11 and Japan was Australia's top export market for coal, beef, aluminium, liquefied natural gas (LNG), dairy products and woodchips. Australia and Japan regularly discuss trade and economic issues, including at the Trade and Economic Ministers Dialogue, most recently held in Sydney in February 2011. Australia welcomes the Japanese government's renewed commitment to economic reform, and will continue to work with Japan to progress negotiations for a bilateral free trade agreement that will deliver economic benefits to both countries.

Reflecting a shared approach to multilateralism, Australia works closely with Japan through a range of multilateral institutions. Australia and Japan also have a record of co-operation in areas such as humanitarian relief, peacekeeping, responding to the global financial crisis, and addressing climate change. Differences on whaling have not disrupted the broader relationship and the two governments have agreed that this should remain the case.

The cultural relationship between the two nations continues to grow. As at 2011, there are 16 Australia-Japan and Japan-Australia societies providing grass-roots community support to the relationship, as well as 99 sister city alliances. The Australian and Japanese governments support grassroots efforts to increase Japanese-language learning in Australia and related exchanges, including through the Australia-Japan Foundation.

China

Australia's relationship with China is based on mutual respect and a recognition of shared interests and differences. The relationship has continued to grow and mature as Australia engages with China on various issues of mutual interest, including climate change, nuclear non-proliferation and development assistance in the South Pacific. Australia and China have regular bilateral dialogues on climate change, consular issues, human rights and regional security, and co-operate through a range of multilateral institutions.

China's importance to Australia has grown with China's increasing economic, political and strategic influence in the Asia-Pacific region and in the global economy. In 2010–11, China was Australia's largest two-way trading partner for goods and services. The value of trade with China topped \$100 billion for the first time in 2010. Two-way goods and services trade was \$113.3 billion in 2010–11, an increase of 26% compared to the previous year. Australia is working to diversify its trading relationship with China and exploit new opportunities presented by China's continued high growth, including in South West China. Both governments are continuing negotiations for a bilateral free trade agreement.

Frequent high-level visits between Australia and China continue to strengthen the relationship. Prime Minister Gillard's visit to China and Politburo Standing Committee Member Jia Qinglin's visit to Australia in April 2011 highlighted the growing trade and economic relationship and the commitment on both sides to strengthen bilateral relations.

Non-government links play a vital role in the Australia-China relationship. Australia's participation in the Shanghai World Expo in 2010 projected an informed contemporary image of Australia and strengthened Chinese perceptions of Australia as innovative, creative and dynamic. The Australia-China Council also plays a significant role in building understanding of contemporary Australia's scientific, technological and educational outlook. High growth in tourism and education has bolstered non-government links between the two countries. Chinese visitor arrivals reached 454,000 in 2010 and with more than 126,000 Chinese students studying in Australia, Chinese students made up more than

a quarter of Australia's overseas students in 2010. Australia and China have more than 75 sister city/sister state relationships.

Taiwan

Within the framework of its one-China policy, Australia promotes important economic, trade, cultural and non-government links with Taiwan. Australia's merchandise exports to Taiwan were valued at \$9.1 billion in 2010–11, Australia's fifth largest merchandise export market. Recent developments in the bilateral relationship include bilateral economic consultations in May 2011, the negotiation of an Investment Promotion Accord and a streamlined Electronic Travel Authority facility for Taiwan passport-holders.

Republic of Korea

Australia's political and economic relationship with the Republic of Korea (ROK) continues to grow, building upon shared democratic values, common strategic interests and substantial and complementary economic ties. The ROK was Australia's third largest goods and services export market in 2010–11, with exports increasing by 32% from the previous year to \$24.3 billion. Key Australian exports to the ROK include iron ore, coal and crude petroleum. Key imports from the ROK include passenger motor vehicles and refined petroleum. Negotiations are almost complete for an Australia-ROK Free Trade Agreement, which will further strengthen economic and trade links between the two countries.

A number of significant events in 2010–11 reinforced the close co-operative relationship between Australia and the ROK. Prime Minister Gillard visited the ROK in April 2011 to mark the 50th anniversary of the establishment of diplomatic relations, and to attend the G20 Summit in Seoul in November 2010. To celebrate the 2011 Australia-Korea Year of Friendship, Australia and the ROK held year-long cultural programs in the ROK and Australia. Australia's participation in the Expo to be held in Yeosu, from May to August 2012, will further strengthen business and other non-government links, building on existing work to deepen exchanges between the two countries. In 2010, the ROK was Australia's eighth largest source of visitor arrivals and third largest source of overseas student enrolments.

Australia and the ROK work together to promote regional and global security and in April 2011 leaders welcomed both countries' strengthened engagement pursuant to the March 2009 Joint Statement on Enhanced Global and Security Cooperation. This initiative has seen increasing security links through joint exercises on the Korean Peninsula and improved co-operation in the fields of law enforcement, border security, counter-terrorism, disarmament and non-proliferation and disaster response.

Democratic People's Republic of Korea

Australia continued to seek support at regional meetings such as the EAS and ARF to urge the Democratic People's Republic of Korea (DPRK) to end its nuclear weapons program and comply fully with the Nuclear Non-Proliferation Treaty. Australia continues to implement autonomous sanctions against the DPRK, in addition to the sanctions mandated by UN Security Council Resolutions 1718 and 1874.

Australia urged a strong response from the international community to the DPRK's shelling of Yeonpyeong Island in November 2010, which killed and injured armed forces personnel and civilians. The incident followed the DPRK's sinking of a ROK naval vessel earlier in 2010, with the loss of 46 lives. In 2011, Australia urged calm and restraint by all parties following the death of Kim Jong-il and worked with regional partners including the United States, Japan and the ROK to urge the new DPRK leadership, under Kim Jong-il's third son, Kim Jong-un, to take this opportunity to act in the interests of its own people, engage constructively with the international community, and comply fully with its obligations and commitments to denuclearise.

South East Asia

South East Asia is a region which is critical to Australia's continued security and prosperity. Australia's relations with the countries of South East Asia continue to strengthen with increased trade and two-way visits, demonstrating the value of increased co-operation with partners in the region.

Indonesia

Australia and Indonesia are close neighbours and enjoy a wide-ranging relationship encompassing political, security, commercial and cultural links. Australia and Indonesia co-operate closely on

regional and global challenges including counter-terrorism, people smuggling, transnational crime, illegal fishing and climate change.

The relationship is underpinned by frequent two-way high-level exchanges, including more than 90 ministerial visits between Australia and Indonesia since November 2007. During President Yudhoyono's state visit to Australia in March 2010, leaders agreed to upgrade the Australia-Indonesia relationship to a 'comprehensive strategic partnership', in which leaders agreed to meet annually and foreign and defence ministers would meet in a '2+2' format each year. To strengthen education, culture, media, business and sports links, leaders decided to establish the Australia-Indonesia Dialogue, which first met in Jakarta in October 2011.

During Prime Minister Gillard's November 2011 visit to Indonesia, leaders agreed to begin formal negotiations on the Australia-Indonesia Comprehensive Economic Partnership Agreement (CEPA). The CEPA will deepen and broaden the economic relationship between the two countries, building on the ASEAN-Australia-New Zealand Free Trade Agreement. Indonesia is Australia's 12th largest trading partner, with two-way goods and services trade totalling \$13.8 billion in 2010–11. Australia's goods and services exports to Indonesia were valued at \$6 billion in 2010–11. Australia's major exports to Indonesia include wheat, education-related travel, crude petroleum, live animals and aluminium.

Non-government links are an important part of Australia-Indonesia relations. Over the past two years, the Australia-Indonesia Institute has provided 81 grants in fields such as the arts, education, faith, media, science and technology, and youth.

Malaysia

During reciprocal Prime Ministerial visits between Australia and Malaysia in 2010 and 2011, the diverse nature of the relationship was demonstrated by agreed measures to strengthen regional security, trade and public sector reform. In March 2011, Australia and Malaysia signed memoranda of understanding on co-operation in education and sport. Also, in March 2011, prime ministers called for conclusion of Free Trade Agreement negotiations within twelve months. Australia's high level of engagement with Malaysia on security issues was strengthened

in July 2011 by the signing of a Memorandum of Understanding on co-operation on maritime law enforcement and by Malaysia's co-operation on combating people-smuggling. Australia and Malaysia also participate in joint defence exercises, including for the 40th anniversary of the Five Power Defence Arrangements in 2011.

Australia and Malaysia continue to enjoy strong trade and other non-government links. In 2010–11, Australia exported goods and services to Malaysia valued at \$5.7 billion, and imported goods and services valued at \$10.1 billion. Investment relations remain deep, with Malaysian direct investment in Australia valued at around \$8.2 billion and Australian direct investment in Malaysia valued at around \$4.4 billion. Australia is the top education destination for Malaysians and around 21,000 Malaysian students were enrolled to study in Australia in 2010. The Australia-Malaysia Institute, established in 2005 to strengthen further institutional links, supported a broad range of projects and activities, including a sister schools program, and a young leaders program in May 2011 that brought together 21 emerging leaders from Malaysia and Australia.

Singapore

Australia and Singapore share a close relationship built on strong defence and trade ties, as well as likeminded views on a range of regional and issues. Singapore is Australia's largest trade and investment partner in ASEAN. Australia's goods and services exports to Singapore in 2010–11 were valued at \$8.3 billion, while goods and services imports from Singapore were valued at \$15.1 billion. Singapore is a significant source of foreign investment into Australia, with total Singaporean investment stock valued at \$43.8 billion in 2010. The Singapore-Australia Free Trade Agreement (SAFTA) is Australia's second-oldest FTA, and continues to create opportunities for businesses to trade and invest between the two countries. The outcomes of the second review of SAFTA came into effect in 2011, creating greater certainty for business by ensuring that investors from each country are accorded fair and equitable treatment when investing in the other country.

Non-government links between Australia and Singapore continue to develop, building on strong education and tourism sectors. Australia continued to host a number of Singapore Armed Forces military units in Australia and undertakes

regular joint defence exercises, including through the 40th anniversary of the Five Power Defence Arrangements in 2011. Australia and Singapore also participate in multilateral and regional security operations, including in Afghanistan and the Gulf of Aden.

Thailand

Australia and Thailand will celebrate the 60th anniversary of diplomatic relations in 2012. This will provide opportunities to continue regular high-level engagement, building on visits to Thailand by the Governor-General in April 2011 and the Minister for Foreign Affairs in May 2011. The strong and broad-based relationship continues to be enhanced by non-government links through the work of the Australia-Thailand Institute (ATI), which supports high-level visits and youth exchanges. The ATI also provides funding to projects improving links in fields such as trade, democratic governance, public administration, arts, culture, education, science, technology and innovation. Approximately 16,500 Thais are studying in Australia, and over 700,000 Australians visit Thailand every year. Australia's trade and commercial relations with Thailand are robust, with total two-way goods and services trade in 2010–11 reaching \$19.1 billion, making Thailand Australia's second largest trading partner in South East Asia.

Philippines

Australia's significant relationship with the Philippines continues to strengthen across a range of areas including counter-terrorism, defence and maritime security, trade and investment, development, and regional and multilateral engagement. Regular high-level engagement has provided opportunities for Australia to support the Aquino Administration's progressive reform agenda. Australia hosted the third Philippines-Australia Ministerial Meeting (PAMM) in Canberra on 16 June 2011 involving ministers responsible for foreign affairs and trade from both countries. Ministers discussed counter-terrorism, defence and security, the peace process in the southern Philippines, development assistance, trade and investment, and regional and multilateral engagement.

Economic co-operation has focused on enhancing opportunities for Australian businesses in the Philippines mining sector. Non-government and immigration links also continue to develop,

and the Filipino community is one of the fastest growing in Australia.

Vietnam

Australia's increasingly important relationship with Vietnam is reflected in the Australia Vietnam Comprehensive Partnership, signed in 2009, and the associated Plan of Action, signed in October 2010. Australia and Vietnam co-operate in a range of fields including political and public policy exchanges, trade and investment, development assistance, defence and security, and non-government links. High-level political contact is strong, with a number of visits over the past two years, including by the Governor-General, Prime Minister and Foreign Minister. Trade has grown at an average of around 10% over the past decade, and stands at \$6.1 billion. In December 2011, Vietnam hosted the 10th Joint Trade and Economic Cooperation meeting in Hanoi. Co-chaired by the Australian Minister for Trade and the Vietnamese Minister for Planning and Investment, the meeting agreed on a number of areas of further economic co-operation, including resources and energy.

Education links continue to be a particularly important part of the relationship. There were over 25,000 Vietnamese enrolments in Australian institutions in 2010, and a further 15,000 Vietnamese studying in Australian institutions based in Vietnam. Australia continues to engage productively with Vietnam on human rights issues, including through the annual Human Rights Dialogue. The last Dialogue was held in Canberra in February 2011. Australia also works with Vietnam to advance the global and regional agenda, including through the EAS, APEC and the Trans-Pacific Partnership negotiations.

Cambodia

Australian engagement with Cambodia is increasing, underpinned by historical ties stemming from Australia's leading role in the Cambodian peace process. Cambodia will chair ASEAN and the EAS in 2012, providing further opportunities for high-level co-operation. Australia is the second largest donor to the Extraordinary Chambers in the Courts of Cambodia, where surviving leaders of the former Khmer Rouge regime are being tried. Australian investor interest in Cambodia continues to grow, including in the banking, infrastructure, mining and agribusiness sectors.

Brunei Darussalam

Australia and Brunei Darussalam enjoy a constructive relationship with growing links in the fields of security, education and trade. Bilateral defence and security co-operation is enhanced by memoranda of understanding on co-operation in terrorism and transnational crime. Trade and investment remain an important focus of Australia's bilateral relationship with Brunei, with total two-way trade in goods and services amounting to \$1.3 billion in 2010–11.

Laos

Australia and Laos will celebrate the 60th anniversary of diplomatic relations in 2012. The diverse relationship between the two countries is complemented by regular high-level official visits and growing non-government links. Economic ties are characterised by significant Australian investment in the Lao mining sector, and will further deepen as the Lao economy continues to grow strongly.

Burma

Australia engages actively with the international community on policy approaches to Burma, including voicing concerns on human rights and democratic reform. The government responded to the inauguration of Burma's first nominally-civilian government in 50 years and the opening of new national and regional parliaments and assemblies; the renewed dialogue between Burma's government and Aung San Suu Kyi; and revisions to legislation in a range of areas. The government identified a range of strategies to help support the reform process in Burma. The then Minister for Foreign Affairs, Mr Rudd, visited Burma in June–July 2011, the first such visit since 2002. Australia is Burma's second largest development assistance provider, with a focus on education and health.

East Timor

Australia is at the forefront of international efforts to help East Timor (Timor-Leste) maintain its stability and become a more prosperous nation, including by providing a budgeted \$124 million in 2011–12 through the development assistance program, and shared management of petroleum resources in the Joint Petroleum Development Area. Australia continued to advocate ongoing international engagement, including the renewal in February 2011 of the mandate for the UN

Integrated Mission in Timor-Leste (UNMIT). Australia continues to lead the International Stabilisation Force (ISF) which helped restore stability after unrest in mid 2006. The ISF remains in East Timor in support of UNMIT. The then Minister for Foreign Affairs, Mr Rudd, reinforced Australia's friendship with East Timor during his visit as Foreign Minister in July 2011, as well as Australia's long-term commitment to East Timor's development when he signed a Partnership for Development with East Timor in December 2011.

New Zealand and the Pacific

Stability, security and prosperity in the Pacific are important to Australia's national interest. One-quarter of Australia's aid program is dedicated to the region. Australia engages actively in bilateral and regional initiatives throughout the region and continues to enhance its long-standing partnership with New Zealand.

New Zealand

Australia and New Zealand share a close and diverse relationship, underpinned by extensive and high-level government-to-government interaction and strong business and other non-government links. This was evident through Australia's contribution to the response to the 22 February 2011 earthquake in Christchurch, with over 750 Australian personnel involved in rescue and relief efforts.

The trade and investment relationship is underpinned by the 1983 Australia New Zealand Closer Economic Relations Trade Agreement (ANZCERTA), which created a free trade area between the two countries. Trans-Tasman economic integration was further strengthened in 2011 through signing of an Investment Protocol to ANZCERTA. Economic integration was discussed at the Australia New Zealand Leadership Forum in Auckland in April 2011.

New Zealand is Australia's seventh largest goods and services trading partner and third largest investment market. Exports of Australian goods and services to New Zealand were valued at \$11.1 billion in 2010–11. Australia imported goods and services from New Zealand valued at \$10.1 billion over the same period.

Non-government contact between the two countries is extensive. Over 400,000 New Zealanders live in Australia, while around 65,000

Australians live in New Zealand. The Trans-Tasman Travel Arrangement allows Australians and New Zealanders to visit, live and work in each other's country without restriction.

Papua New Guinea

The close relations between Australia and Papua New Guinea (PNG) are based on geographic proximity and historical links. Australia has a strong interest in Papua New Guinea's sustainable development and stability. The presence of approximately 10,000 Australians in Papua New Guinea is also of significant interest to the government. Australia is PNG's largest source of imports and number one export market, and in 2010–11, total two-way trade in goods and services amounted to almost \$7 billion. A key focus of Australian investment in PNG is the resources sector, particularly gold, oil and gas.

Australia maintains strong relations with PNG through regular high-level talks and visits. The Australia-PNG Ministerial Forum, held in Canberra in October 2011, underlined the increasing importance of economic co-operation in the evolving bilateral relationship. At the forum, Australia and PNG agreed to begin negotiations on an economic co-operation treaty to replace the existing development co-operation treaty.

Pacific islands

Australia values its close historical, political, economic and community links with countries and territories in the Pacific. Australia is playing an active role in the region in support of economic growth, sustainable development, good governance and stability.

Australia is a founding member and major donor to a number of key regional organisations in the Pacific. The Pacific Islands Forum (PIF) is the region's principal political institution, bringing together the independent and self-governing states of the Pacific in an annual leaders' meeting. The 42nd Forum meeting, marking the 40th anniversary of the founding of the Forum, was held in Auckland in September 2011. Prime Minister Gillard announced major new funding for the Australian Pacific Technical College and the expansion of the Pacific Seasonal Worker Pilot Scheme (PSWPS) to an additional four countries.

Australia continues to lead the Regional Assistance Mission to Solomon Islands (RAMSI),

which since 2003 has been working to achieve a more stable and prosperous future for Solomon Islanders. In recognition of the strong progress made by RAMSI in partnership with the Solomon Islands Government, the mission's activities are gradually drawing down.

Australia continued to work with the international community to encourage Fiji's return to democracy. However, the Fiji regime failed to take any credible steps towards holding elections. While the Public Emergency Regulations implemented in April 2009 were lifted on 7 January 2012, Fiji continued to be ruled by decree. The decline of the Fiji economy and the upsurge in human rights abuses perpetrated by the regime – particularly targeting churches, trade unions and opposition groups – highlight the importance of Fiji returning to democracy and the rule of law.

With the signature in August 2010 of Partnerships for Development with the Federated States of Micronesia, Republic of the Marshall Islands and the Republic of Palau, Australia has partnerships with eleven Pacific Island countries. These Partnerships provide a framework for achieving progress towards the Millennium Development Goals. Australia also signed Partnerships for Security with Samoa and Kiribati. Australia supported democratic reforms in Tonga that led to the election of a new, more democratic, Parliament.

South and West Asia, Middle East and Africa

Australia continues to make significant contributions to peace and security in South and West Asia and the Middle East, including by participating in international efforts to stabilise Afghanistan and supporting Tunisia and Egypt during periods of rapid political change. The bilateral relationship with India is a priority for Australia. Australia's increased engagement with Africa reflects its growing economic interests in the continent and recognition of the role Africa plays in an increasingly interdependent world.

India

Australia has placed India in the front rank of its international partnerships and is engaging with India on a long-term, strategic basis. The bilateral relationship has been strengthened through the Australia-India Strategic Partnership, agreed by

prime ministers in November 2009. Annual high-level exchanges take place between Australian and Indian foreign and trade ministers. To further support the growing bilateral relationship, the number of Australian staff posted to India has risen by 85% since 2008, including new positions in Australia's Consulates-General in Mumbai and Chennai. Between January 2008 and December 2011, there were 24 ministerial-level visits from India to Australia and 30 ministerial-level visits from Australia to India.

The economic relationship has grown steadily in recent years and has the potential to increase considerably as India's economic expansion continues. India is Australia's eighth largest trading partner with two-way trade reaching \$21 billion in 2010–11. In May 2011, the Trade Minister, Dr Emerson, and the Indian Commerce and Industry Minister, Mr Anand Sharma, launched negotiations for an Australia-India Comprehensive Economic Cooperation Agreement.

In November 2011, Australia and India expanded co-operation on Indian Ocean regional affairs, when Australia became Vice-Chair, and India Chair, of the Indian Ocean Rim Association for Regional Cooperation.

The Australia-India Council, established to broaden and deepen bilateral contacts and understanding, will celebrate its 20th anniversary in 2012. Its work in 2010–11 focused on education, science, technology, environment, social initiatives, public policy and the arts.

Afghanistan

The Australian Government is committed to international efforts to stabilise Afghanistan and to seeking to ensure that international terrorist groups are denied safe haven there. In 2010 and 2011, Australia expanded its diplomatic presence in Afghanistan both in Kabul and southern Afghanistan. Since August 2010, Australia has led the Provincial Reconstruction Team in Uruzgan, which works with local governments to support reconstruction and development and to prepare Afghan authorities to assume these roles by the end of 2014. Australia is among the top ten bilateral development assistance partners for Afghanistan, and has committed more than \$700 million in development assistance for humanitarian and reconstruction efforts since 2001.

In 2010, Australia was the largest non-NATO contributor to the International Security Assistance Force (ISAF) in Afghanistan and the 10th largest overall. In 2010, there were approximately 1,550 Australian Defence Force members engaged in security and stabilisation efforts in Afghanistan (including training and mentoring), with over two-thirds of these in Uruzgan Province.

South Asia

Australia is a long-standing friend of South Asia and delivered a significant humanitarian response to the 2010 and 2011 floods in Pakistan. Australia is committed to supporting Pakistan's efforts to address its security, economic and development challenges through a range of initiatives including defence training, strategic dialogue and capacity building in law enforcement and counter-terrorism.

In 2011, Australia supported Bangladesh's efforts to address poverty and respond to the challenges of climate change. Bangladesh is also an important economic, counter-terrorism and security partner for Australia. Australia provided support for post-conflict stabilisation in Sri Lanka and continues to support human rights and political reconciliation. Australia supported efforts in Nepal to urge political parties to keep the peace process on track and address human rights concerns. Australia's commitment to democracy in South Asia was demonstrated by organising visits to Australia by election officials from Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka.

Middle East and North Africa

Australia strengthened and diversified its already strong relations with the Middle East and North Africa in 2011. In response to the political upheaval across the region, Australia actively called for leaders to avoid violence and respect human rights and the right to protest. Australia was active in international efforts to resolve the conflict in Libya. Australia also provided early, targeted and practical support for the democratic and economic transition processes underway in Egypt, Tunisia and Libya through technical support and assistance packages, which focused on electoral reform and enhancing agricultural productivity and food security.

At a regional level, Australia concluded an Australia-Arab Dialogue Memorandum of

Understanding with the Arab League in September 2011. This Memorandum provides a framework for Australia to enhance its engagement with the League and its member states in a range of areas, including trade, political and cultural spheres. Australia also concluded a framework of co-operation with the Organisation of Islamic Cooperation (OIC) in June 2011 and appointed the first ever Australian Envoy to the OIC, Ahmed Fahour. In the Gulf region, Australia sought to strengthen political and economic ties with the Gulf Cooperation Council (GCC) through the inaugural GCC-Australia Foreign Ministers' dialogue in 2011. Australia also supported national reconciliation and political dialogue in Bahrain and Yemen.

Australia continued to work with the international community to place pressure on Iran in response to Iran's continuing non-compliance with United Nations Security Council (UNSC) resolutions on its nuclear program. Australia maintained its commitment to a negotiated solution of the Iran nuclear issue. In response to the worsening violence in Syria, Australia also worked with the international community to urge Syria's regime to end the violence and implement political change.

Australia continued to advocate the resumption of negotiations between Israel and the Palestinians for a two-state solution in which a secure Israel can live side by side with a secure and independent Palestinian state.

The Middle East and North Africa region continued to be an important region for Australian trade and investment. Two-way merchandise trade with Arab League countries totalled \$12.1 billion in 2010–11. Cultural, educational, media, sporting and scientific exchanges between Australia and the Arab world are promoted by the Council for Australian-Arab Relations (CAAR). CAAR projects enhance mutual understanding and stronger non-government links.

Sub-Saharan Africa

Australia is strengthening engagement with all African countries and with the African Union, the principal body for co-ordination and integration in the continent. Australia has diplomatic relations with all 54 countries following establishment of diplomatic relations with South Sudan in September 2011.

Australia re-established its Embassy in Addis Ababa, Ethiopia, the seat of the African Union, in January 2011. In September 2010, Australia signed a Memorandum of Understanding with the African Union which has strengthened security and development co-operation. Australia played a constructive role in the lead-up to South Sudan's independence, facilitating support for 9,200 people from South Sudan in Australia to vote in the referendum and providing personnel to the United Nations Mission in South Sudan.

Australia has a significant presence in the resources sector in Africa, with Australian companies active in 43 African countries and territories. Australian industry participated in two major mining conferences, Mining Indaba in South Africa in February 2011 and Africa Down Under in Perth in August 2011.

Australia continued to advocate for full implementation of the Global Political Agreement, while supporting economic recovery and encouraging respect for human rights and the rule of law in Zimbabwe.

Europe

Australia enjoys close relations with the European Union (EU) and individual European countries. As a bloc, the EU is one of Australia's largest trading partners and sources of foreign direct investment. Total two-way goods and services trade in 2010–11 was worth \$77.7 billion.

Australia and the EU began negotiations on a treaty-level Framework Agreement to provide for joint action in areas such as foreign and security policy, development co-operation, trade and investment, climate change, science, innovation and education. The start of negotiations on 31 October 2011 was a significant milestone in the Australia-EU relationship. Australia and the EU strengthened border security by signing a Passenger Name Record Agreement in September 2011 and have agreed to negotiate a Crisis Management Agreement to facilitate co-operation in response to international crises.

Australia and the United Kingdom share a particularly close and vibrant relationship based on strong historical and non-government links, aligned strategic interests and strong bilateral trade and investment. In 2012, the AUKMIN Foreign and Defence Ministers' consultations

provided an opportunity to strengthen co-operation on foreign and security policy.

Australia maintains strong relationships with other European countries, including through high-level visits by the Governor-General, Prime Minister and other Australian ministers. Australia engages with Germany, Europe's strongest economy, on a wide range of issues, including resources and energy, development co-operation, nuclear non-proliferation and the environment. The year 2012 marks the 60th anniversary of the establishment of diplomatic relations between the two countries.

Building on the Australia-Turkey Joint Action Plan, Australia's co-operation with Turkey is increasing on political, consular and humanitarian issues, notably in the co-ordinated delivery of relief aid to countries in the Middle East.

Relations with Spain continue to grow, underpinned by strong commercial defence ties and expanding Spanish investment in Australia, particularly in the water and renewable energy sectors.

Australia worked closely with France as 2011 Chair of the G20 on global economic issues, and on developments in North Africa, the Middle East and the Pacific. Russia attended its first EAS in November 2011, is hosting APEC in 2012 and will host the G20 in 2013, providing extensive opportunities to broaden and deepen this important bilateral relationship.

Americas

Australia is expanding its relationship with Canada on global and regional developments and intensifying co-operation in multilateral forums such as the G20, UN and Commonwealth. Recognising the growing significance of Latin America and the Caribbean, Australia is also strengthening its engagement with the region by developing links with regional organisations and intensifying bilateral contacts. Australia's relationship with the United States is described earlier in the chapter.

Canada

The Australia-Canada relationship is mature, highly productive and broadly-based, and has its foundations in historical and cultural links. In November 2010, Australia hosted the inaugural Australia-Canada Economic Leadership Forum which brought together senior business

figures, academics and journalists to explore new opportunities for co-operation. Contact between parliaments, government officials, private sectors and academia is wide-ranging. A comprehensive range of bilateral agreements cover trade, social security, air services, consular services abroad, mutual assistance in criminal matters and avoidance of double taxation. Canada is Australia's 21st largest merchandise trading partner, with two-way merchandise trade amounting to \$4.7 billion in 2010–11.

Australia and Canada co-operate closely in key international forums such as the G20, UN and Commonwealth including on international economic and trade issues, security, counter-terrorism, human rights and environmental issues. As agricultural exporting countries, Australia and Canada co-operate in the WTO and as members of the Cairns Group working towards freer trade in agricultural products.

Latin America

In recognition of the growing significance of Latin America to Australia's interests, Australia has strengthened bilateral engagement and further developed links with regional organisations. Australia re-opened its Embassy in Peru in September 2010 and concluded an MOU for the Establishment of an Enhanced Partnership with Brazil in September 2010. The then Minister for Foreign Affairs, Mr Rudd, issued a Joint Declaration on further co-operation between Australia, New Zealand and Mercosur (a customs union comprising Argentina, Brazil, Paraguay and Uruguay). Australia worked with Mexico in the lead-up to Mexico's chairing of the G20 and through joint engagement in the Green Climate Fund Transitional Committee.

Latin America is an important destination for Australian investment, primarily in the mining and mining services sectors. Total two-way merchandise trade was valued at \$7.4 billion in 2010–11, an increase of 16% from the previous year. Latin America is one of the fastest-growing sources of foreign students in Australia, with over 33,000 enrolments in 2010.

The Council on Australia Latin America Relations, founded in 2001, contributes to Australia's economic, political and cultural relations with Latin America. The Council facilitates high-level visits and youth exchanges and funds projects in fields such as trade, education, film and sports.

Caribbean

Australia's friendly relations with countries in the Caribbean are based on shared sporting, social and political ties and membership of the Commonwealth. Australia co-operates with many Caribbean countries in international organisations such as the United Nations. Australia formally established relations with the Caribbean Community (CARICOM) in November 2009 and reaffirmed the growing partnership at the CARICOM Foreign Ministers meeting in Perth in November 2011. Australia and Belize are home to two of the largest coral reefs in the world; from 2012 Australia will co-host the International Coral Reef Initiative with Belize, working collaboratively to preserve threatened habitats.

Australia's multilateral engagement

Association of South-East Asian Nations

Australia attaches high priority to its longstanding relationship with the Association of South-East Asian Nations (ASEAN). ASEAN is a key regional institution comprising Brunei Darussalam, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam. Australia was the first country to become an ASEAN dialogue partner, in 1974. Since then, ASEAN-Australia co-operation has grown to cover a wide range of areas including security, culture, trade, education and development. This co-operation is underpinned by agreements such as the ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA) and the Joint Declaration on an ASEAN-Australia Comprehensive Partnership.

Australian and ASEAN ministers and officials meet regularly through the ASEAN-Australia Post-Ministerial Conference and other ASEAN-related gatherings. The 2010 ASEAN-Australia Summit in Vietnam provided a further opportunity to deepen the relationship and to enhance co-operation in areas such as regional infrastructure development and migrant worker protection.

East Asia Summit

Australia's close and long-standing engagement in East Asia was bolstered further when Australia became a founding member of the East Asia

Summit (EAS). Australia attended the inaugural Leaders' meeting in Kuala Lumpur on 14 December 2005. The EAS has a broad mandate to address the region's political, economic and security challenges. The EAS took an important step forward as the region's pre-eminent forum to address political, economic and security challenges with the 2011 decision by leaders to expand the EAS to include the United States and Russia for the first time – a development strongly advocated by Australia.

The 18 EAS countries collectively represent 55% of the world's population and accounted for 53% of global GDP in 2010. With the 17 other EAS member countries accounting for 74% of Australia's goods and services exports, the grouping is of key economic and strategic importance.

United Nations

Commitment to the United Nations is one of three pillars of Australia's foreign policy. Australia has a strong record at the United Nations (UN). As one of the UN's founding members, Australia has been an active participant in its institutions and is the 12th largest contributor to the UN regular and peacekeeping budgets. Australia has provided over 65,000 personnel to more than 50 UN and other multilateral peace and security operations since 1947. Australia's interests in the UN's agenda are wide-ranging and include international security, the environment, human rights and the Millennium Development Goals. Australia is also represented on the governing councils of a number of UN bodies, programs and specialised agencies. As a candidate for the UN Security Council 2013–2014 term, Australia is seeking to make a strong and positive contribution to the Security Council's vital work.

The Commonwealth

Australia is an active member of the Commonwealth, an association of 54 independent countries. Australia supports the strengthening of the Commonwealth's focus on its core values of democracy, human rights, the rule of law and good governance, as well as targeted Commonwealth efforts to promote sustainable development and poverty alleviation. Australia hosted the Commonwealth Heads of

Government Meeting (CHOGM) in October 2011, at which Commonwealth leaders agreed on significant steps to reform and revitalise the Commonwealth. Leaders agreed to conclude a Charter of Commonwealth Values in 2012 and to strengthen the Commonwealth Ministerial Action Group to include a more proactive role in support of democracy. Leaders also agreed to actions to ensure the Commonwealth's effectiveness in supporting global responses to contemporary challenges, such as climate change, global economic recovery and food security.

Australia's human rights policy

Australia takes an active and constructive approach to improving human rights standards and systems internationally, which includes engagement at the bilateral, regional and multilateral levels. Australia has a long tradition of supporting human rights globally.

Australia holds regular bilateral human rights dialogues with China, Vietnam and Laos. These provide the opportunity for representations on both individual cases and systemic human rights issues. The 13th Australia-China Human Rights Dialogue was held in Beijing in December 2010, and the eighth Australia-Vietnam Human Rights Dialogue took place in Canberra in February 2011. Australia supports the further strengthening of human rights in the region, including through support for the Asia Pacific Forum on National Human Rights Institutions and the ASEAN Inter-Governmental Human Rights Commission.

Active participation in multilateral human rights forums is central to Australia's human rights advocacy, especially in the UN General Assembly Third Committee and the UN Human Rights Council (HRC). Australia also participates in the Universal Periodic Reviews (UPR) of human rights situations in individual UN member states, and engaged closely on the review of all 47 countries considered in 2011.

Australia has responded positively and constructively to international recommendations on its own human rights situation. Following the UPR of Australia on 27 January 2011, Australia accepted wholly or in part 137 of a total of 145 recommendations.

Australia's security interests

Australia's alliance with the United States is indispensable to Australia's strategic, defence and security interests. Australia co-operates with the United States, United Kingdom and a wide range of other regional and international partners, bilaterally and in regional and international forums, to combat international challenges such as non-proliferation, counter-terrorism and transnational crime. Regionally, Australia co-chairs with Indonesia the Bali process on people-smuggling, trafficking in persons and related transnational crime.

Non-proliferation

Australia attaches high priority to countering the proliferation of Weapons of Mass Destruction (WMD) and achieving the goal of disarmament, as well as addressing non-traditional security issues such as terrorism and emerging issues such as cyber and space. Australia holds bilateral security dialogues with the United States, Japan, United Kingdom, France, the North Atlantic Treaty Organization (NATO) and the EU.

Australia participates actively in the major WMD export control regimes. Australia chairs the Australia Group, which sets export controls on chemical weapons precursors, biological agents, and related technology and equipment. Australia is a member of the Nuclear Suppliers Group, which aims to prevent civilian nuclear trade from contributing to nuclear weapons programs, and of the Missile Technology Control Regime (MTCR), which seeks to prevent the proliferation of unmanned systems capable of delivering WMD. Australia provides practical technical assistance to regional countries to help them improve export control measures so they meet relevant international obligations and strengthen national structures. To enhance counter-proliferation capabilities, Australia worked bilaterally with regional partners and through the Proliferation Security Initiative, which was established to develop practical measures to disrupt illicit trade in WMD.

With Japan, Australia established the Non-Proliferation and Disarmament Initiative (NPDI) – a cross-regional ministerial level group to promote and support implementation of the outcomes of the May 2010 Nuclear Non-Proliferation Treaty (NPT) Review Conference.

Australia works to strengthen adherence to, and compliance with, the major weapons treaties – the NPT, the Chemical Weapons Convention, the Biological and Toxin Weapons Convention and the Comprehensive Nuclear-Test-Ban Treaty. Countering the proliferation of certain types of conventional weapons is also a priority, and Australia works to promote the effective implementation of the Mine Ban Convention.

Australia supports strengthening of the safeguards, safety and security programs of the International Atomic Energy Agency (IAEA). Australia's position on the IAEA Board of Governors helps us to strengthen the global non-proliferation regime. Through active participation in the IAEA and other forums, Australia contributes to international efforts to resolve concerns over the nuclear activities of Iran, the DPRK and Syria.

Australia works to counter access to, and the effects of, illicit small arms and light weapons, particularly in the Asia Pacific region. At the 2012 UN Negotiating Conference on an Arms Trade Treaty, Australia will advocate for the establishment of international criteria and standards for the global trade in a range of conventional arms.

Counter-terrorism

Terrorism in the region and globally threatens the security and safety of Australia and Australians. Australia has concluded 17 bilateral counter-terrorism memoranda of understanding or documents of intent (with Turkey, Malaysia, Thailand, the Philippines, Fiji, Cambodia, PNG, Indonesia, India, East Timor, Brunei, Pakistan, Bangladesh, Afghanistan, the UAE, Saudi Arabia and France) to facilitate co-operation in this area.

Australia's counter-terrorism co-operation, as highlighted in the February 2010 Counter-Terrorism White Paper, is broad ranging and increasingly complex. Australia continues to support regional partners in strengthening their counter-terrorism capabilities in key areas such as law enforcement, legal frameworks, intelligence, border control and transport security, defence engagement, terrorist financing and money laundering, and countering violent extremism.

Australia also works to build political support and technical capability for more effective counter-terrorism efforts in regional and

multilateral forums. Australia's Ambassador for Counter-Terrorism hosted the sixth Trilateral (Australia, US, Japan) Strategic Dialogue Counter-Terrorism Consultations in December 2010. Australia has deepened its engagement on counter-terrorism efforts with the UN and contributes to capacity-building activities in South East Asia, South Asia, East Africa, the Middle East and the Pacific.

Reducing the threat of chemical, biological, radiological and nuclear (CBRN) terrorism is also an important objective. Australia is an active member of the Global Initiative to Combat Nuclear Terrorism. Australia's practical capacity-building work in the region promotes awareness of, and strengthens the security measures around, CBRN sources to deter potential access by terrorists.

Australia's economic interests

Australia continues to pursue an ambitious trade policy agenda, which combines multilateral, regional and bilateral strategies to open new markets, reduce barriers to trade and promote Australian goods and services. With these objectives in mind, the government's April 2011 trade policy statement set out five guiding principles for Australia's trade policy. These are: a commitment to unilateral liberalisation, non-discrimination in trade, separation of foreign and trade policy considerations, transparency in negotiations and decision-making, and the indivisibility of trade policy and wider economic reform. The statement provides a framework for fulfilling the government's commitment to free trade as a pathway to more and better jobs and greater prosperity.

The Australian Year of the Farmer – 2012

In 2012, Australia celebrates the Australian Year of the Farmer. The Year recognises the importance of agriculture to Australia's economy and the hard work of farmers involved in producing, processing, handling and selling products from 134,000 agricultural businesses across the country. Australia is known for its diverse range of premium quality agricultural products and Australian farmers are among the world's most efficient, providing competitive agricultural produce to world markets.

Around 60% of farm production is exported and, in 2010, agricultural products accounted for 11% of Australia's total exports. Key export destinations for Australian agricultural products are China, Japan, Indonesia, the United States and the Republic of Korea.

Globally, agricultural trade is a distorted and highly protected sector, characterised by very high tariffs and high levels of government support to primary producers. Average tariffs for agricultural goods are more than three times higher than for non-agricultural goods – some agricultural tariffs are as high as 800%. Millions of farmers around the world, including in developing countries, are unfairly disadvantaged in selling their produce to the world market.

The Australian Government continues to work hard to remove impediments to global trade and help make global agricultural trade fairer. This directly benefits Australian farmers by expanding access to international markets. Since the early 1970s, Australia has reduced its own tariff levels on agricultural and food products through a series of across-the-board measures. General tariffs have been phased down to 5% and assistance to industries competing with imports has been substantially reduced.

Australia plays an active role in the World Trade Organization, including in seeking a successful conclusion to the Doha Round of negotiations. As Chair of the Cairns Group, a coalition of 19 agricultural exporting countries, Australia has pushed for fundamental agricultural trade reform, namely significant reductions in agricultural tariffs and trade-distorting subsidies, and elimination of export subsidies. This effort is reinforced by Australia's active free trade agreement agenda, which seeks new market opportunities for Australian exports, including agricultural products, and seeks to expand trade in existing markets.

Australia faces a highly challenging international trading environment. Despite overall growth in exports, particularly for raw materials, exporters in some sectors face continuing challenges caused by the high value of the Australian dollar and uncertainty over the debt crisis in Europe. In this environment, Australia remained active in multilateral economic institutions, including the G20, World Trade Organization (WTO), Asia-Pacific Economic Cooperation (APEC) and Organisation for Economic Co-operation and Development (OECD).

World Trade Organization

Australia has a major stake in maintaining a healthy, rules-based multilateral trading system. Australia is a strong supporter of the WTO, the international institution responsible for overseeing the international trade rules and the premier forum for negotiating multilateral trade liberalisation. The government's April 2011 trade policy statement reinforced Australia's commitment to multilateral trade reform and liberalisation. Australia has been at the centre of efforts to strengthen international support for trade liberalisation and combat protectionism, including proposing a new pathway to complete the stalled Doha Round negotiations. This proposal won broad support at G20 and APEC forums in November 2011 and at the 8th WTO Ministerial Conference (MC8) in December 2011. Australia's plan includes breaking the Round into more manageable parts, and looking to take the negotiations forward in a way that helps the world's least developed countries. The G20 and APEC Leaders' meetings in November 2011 reaffirmed, and extended, earlier anti-protectionism pledges. At MC8, more than 50 countries, representing 70% of world GDP, joined an Australian initiative in pledging to fight all forms of protectionism in the strongest terms.

Australia continues to play a leading role in efforts to promote global trade reform at the WTO. Australia advocates fundamental agricultural trade policy reform through the reductions of tariffs and subsidies, including as Chair of the Cairns Group. On non-agricultural market access, Australia is working with the United States, European Union and Japan to progress initiatives such as sectoral tariff elimination. In services, which comprise the largest sector of the Australian economy, Australia gives priority to reducing foreign equity caps on investment, greater regulatory transparency and

improved business mobility. Given its strong research tradition and the need to access new technologies, Australia works to protect its intellectual property interests pursuant to the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights. The plurilateral Anti-Counterfeiting Trade Agreement, signed on 1 October 2011, builds on WTO standards in this area.

Australia continues to strongly support the world's poorest countries playing an active role in, and benefitting from, the global trading system. Australia pledged at MC8 to continue to provide least developed countries with duty-free and quota-free market access for all products into Australian markets and announced a commitment of \$16 million, over the period 2012 to 2015, in trade-related capacity-building assistance for developing and least developed countries.

Australia engages in all aspects of the WTO and has continued its participation in the WTO dispute settlement system, including defending Australia's position in the dispute against Australia's quarantine conditions affecting New Zealand apples, and participating as a third party in disputes that affect Australian interests. Engaging in negotiations with countries seeking to join the WTO is important to ensure that those countries make appropriate commitments to liberalise their markets. At MC8, Australia welcomed the accession to the WTO of four new countries – Russia, Samoa, Vanuatu and Montenegro. Australia also participates in the WTO's extensive committee system and regular reviews of WTO members' trade policies.

G20

Australia is committed to active participation and policy leadership within the G20, the pre-eminent forum for global economic co-operation. Membership of the G20 gives Australia the capacity to influence key policies relating to the global economy. For example, Australia has advocated and won support for an ongoing G20 commitment to fight trade protectionism.

Australia is represented at the G20 Leaders' Summits by the Prime Minister, while the Treasurer and the Reserve Bank Governor participate in G20 Finance Ministers and Central Bank Governors Meetings. The Prime Minister and the Treasurer are supported in their engagement with the G20 by the Australian

G20 ‘Sherpa’ (the Prime Minister’s special representative for the G20) and the Finance Deputy.

Australia is committed to consulting non-G20 members so that their views are considered by the G20. Australian officials conduct active outreach with regional neighbours to ensure that the decisions of the G20 reflect the needs of the region. As part of the outcomes at the Commonwealth Heads of Government Meeting (CHOGM) in Perth (October 2011), Australia promoted the establishment of an official-level Commonwealth meeting on the G20 development agenda to enhance Commonwealth countries’ voices on G20 issues. Australia encourages other G20 members to undertake outreach in their own regions, so that G20 decisions benefit all economies.

The Cannes Summit in November 2011 was dominated by discussion of the global economy, particularly the Eurozone sovereign debt crisis. Other issues discussed included financial regulation, trade, jobs, food security, agricultural productivity and development. At the conclusion of the summit, leaders released the Cannes Action Plan for Growth and Jobs to address short-term vulnerabilities and strengthen medium-term foundations for growth, including plans for a G20 taskforce on youth employment. Australia will host the G20 in 2014.

Asia-Pacific Economic Cooperation

The Asia-Pacific Economic Cooperation (APEC) is the leading economic forum for Australia’s engagement with the Asia-Pacific, the world’s fastest growing and most dynamic region. APEC has 21 member economies, including Canada, China, the United States and New Zealand. Two-way trade between Australia and APEC economies has risen from \$82 billion, when APEC was formed in 1989, to \$391 billion in 2010. Investment flows into Australia by APEC economies reached \$859 billion in 2010 and outward Australian investment into the APEC region totalled \$662 billion.

Australia plays a leading role in APEC, driving an ambitious agenda to provide support and momentum to the multilateral trading system, accelerating regional economic integration through trade, facilitating trade and investment liberalisation, intensifying structural economic reform, and promoting human security and

institutional reform. In 2011, APEC economies agreed to resist protectionism and extend APEC’s standstill commitment to the end of 2015, reduce tariffs on environmental goods to 5% by the end of 2015, reduce region-wide energy intensity by 45% by 2035, implement policies to support market-driven innovation, address the top barriers to trade facing small and medium enterprises, implement good regulatory practices and structural reform priorities, and expedite business travel.

Australia has continued to promote in APEC the importance of structural economic reform as a way to boost growth and productivity. Structural reform has become a central pillar of APEC’s work, which Australia supports through its \$3 million APEC Structural Reform Initiative. Australia has also welcomed the commitment to enhance the quality and efficiency of regulations in APEC economies, with a view to reducing the regulatory burdens on business. Australia supports APEC’s human security agenda to build resilience to disruptions to regional prosperity and stability, including from terrorism, disasters and disease.

To strengthen APEC’s links with business, Australia provides financial support to Australia’s APEC Business Advisory Council members – three top Australian business leaders appointed by the Prime Minister to ensure that APEC’s work aligns with business priorities and generates economic benefits.

Organisation for Economic Co-operation and Development

Australia has been an active member of the OECD since 1971 and values the OECD’s evidence-based economic and social policy analysis and advice. The OECD is an important source of detailed analysis on a wide range of issues of interest to Australia, including productivity, trade, agriculture, the environment and climate change, and global food security. Australia is involved actively in the OECD’s extensive work programs on core economic policy issues, statistics, labour market issues, digital economy and cyberspace, governance, education, health, migration and energy.

Australia regularly participates in high-level OECD ministerial meetings and working-level projects. These have pursued, among other aims, structural reform to support long-term growth

and wealth creation; a greater role for science, innovation and technology in economic growth; the development of productive and competitive, low carbon economies; and identifying market mechanisms to achieve least-cost transition. Australia supports the OECD's increasing engagement with emerging and developing countries under its enhanced engagement program.

Free Trade Agreements

Consistent with the Government's April 2011 trade policy statement, in negotiations with other countries Australia advocates comprehensive, high quality, truly liberalising bilateral and regional Free Trade Agreements (FTAs) that do not detract from, but support, the multilateral trading system. Australia's FTAs promote stronger trade and commercial ties between participating countries, and create opportunities for Australian exporters and investors to expand their business into key markets.

As at 2011, Australia is negotiating bilateral FTAs with six trading partners – China, Japan, Korea, Malaysia, India and Indonesia. Australia is also negotiating a FTA with the Gulf Cooperation Council, a Pacific trade and economic agreement (PACER Plus) and the Trans-Pacific Partnership (TPP). Present TPP negotiating partners are Australia, Brunei, Chile, Malaysia, New Zealand, Peru, Singapore, the United States and Vietnam. Those countries have agreed to pursue an agreement that is comprehensive and ambitious in all areas, eliminating tariffs and other barriers to trade and investment.

Outcomes from these FTA negotiations will build on Australia's existing agreements, which include a regional FTA with ASEAN and New Zealand, and bilateral FTAs with New Zealand, the United States, Singapore, Thailand and Chile.

The ASEAN-Australia-New Zealand FTA (AANZFTA) was signed in February 2009. It will be in force for all 12 countries following its entry into force for Indonesia on 10 January 2012. Australia's largest FTA, the AANZFTA is designed to increase trade flows and broader economic integration through the use of regional supply chains. The AANZFTA has commercially meaningful benefits to Australian business and strengthens Australia's

commercial ties with ASEAN. It contains substantial tariff reduction and elimination commitments, WTO-plus commitments in other areas such as services, and an economic co-operation work program to support its implementation, business utilisation and regional economic integration.

The Australia New Zealand Closer Economic Relations Trade Agreement (ANZCERTA), Australia's longest-standing FTA, entered into force in 1983. It has underpinned strong growth in trade between the two countries, with average annual increases in two-way goods trade of 8% during the life of the agreement. ANZCERTA is notable for its comprehensiveness, providing for free trade on all goods and almost all services. In February 2011, Australia and New Zealand signed an investment protocol that will liberalise trans-Tasman investments and enhance investor certainty.

The Australia-United States FTA (AUSFTA), which entered into force on 1 January 2005, is a landmark agreement with the world's largest economy. It has led to significantly improved access for Australian industrial and agricultural goods in the US and has further harmonised the substantial services and investment relationship.

The Singapore-Australia FTA (SAFTA), which entered into force on 28 July 2003, has eliminated and bound all tariffs at zero. Australia's principal market access gains from SAFTA are through liberalisation of the services sector. The Thailand-Australia FTA (TAFTA) has underpinned the growth in Australia's trade with Thailand. TAFTA has eliminated approximately 94% of Thailand's tariffs on Australian exports, and the rest will be gradually phased out over coming years. Bilateral trade has more than doubled since the agreement entered into force on 1 January 2005.

The Australia-Chile Free Trade Agreement, which entered into force on 6 March 2009, is considered to be a model agreement. It is Australia's only FTA with a Latin American country and is an important milestone in Australia's enhanced engagement with that region. The agreement provided for immediate reduction of tariffs on 97% of goods traded on entry. Tariffs on all existing merchandise trade between Australia and Chile will be eliminated by 2015.

Australia's environmental interests

Australia attaches high priority to the protection, conservation and ecologically sustainable use of the environment. In international environment negotiations, Australia pursues outcomes that advance its environmental and trade interests in a mutually reinforcing way.

Climate change

Australia plays a leading role in promoting global action to address the adverse effects of climate change. In 2011–12, Australia advocated action on climate change in a range of international and regional forums, including the UN, G20 and the Commonwealth Heads of Government Meeting (CHOGM) in Perth.

Australia actively participates in negotiations under the UN Framework Convention on Climate Change (UNFCCC). At the Durban Climate Change Conference in 2011, Australia worked hard to achieve a mandate to negotiate a new international climate change agreement that will cover all major emitters. Parties agreed to complete negotiations by 2015, with the new agreement to take effect from 2020. Agreement was also reached to finalise institutional arrangements for delivering long-term finance to countries to assist them in reducing emissions and adapting to the effects of climate change.

Through the International Climate Change Adaptation Initiative, Australia's fast-start climate change funding contributes to adaptation projects in the Asia-Pacific, Africa and the Caribbean. Australia's International Forest Carbon Initiative provides assistance to reduce emissions from deforestation and forest degradation in Indonesia and Papua New Guinea, and in other developing countries through multilateral initiatives.

Sustainable development

Australia is working towards ambitious but practical outcomes at the UN Conference on Sustainable Development (Rio+20) that will address the sustainable development agenda for the next twenty years. Australia's priorities for the conference, to be held from 20 to 22 June 2012, include: better management of marine resources, enhancing food security, conserving biodiversity,

establishing sustainable development goals and measuring progress towards sustainability. The former Minister for Foreign Affairs, is a member of the UN Secretary-General's High-Level Panel on Global Sustainability, which is formulating a new vision for sustainable growth and prosperity and identifying mechanisms to achieve it. The Panel released its report in January 2012; it provides an input for outcomes at Rio+20.

Oceans and marine conservation issues

Australia is a global leader in whale conservation and is an active member of the International Whaling Commission (IWC). Australia advocates reforming the IWC into a modern, conservation-focused organisation and ending all forms of commercial whaling. These efforts have led to increased international support for Australia's conservation initiatives, including the Southern Ocean Research Partnership which has thirteen member countries. Work to promote sustainable whale-watching industries, led by Australia, Argentina, Brazil, Mexico, South Africa, the United Kingdom and the United States, has also been entrenched as part of the IWC work program.

The government is resolutely opposed to all forms of commercial whaling, including Japan's so-called 'scientific whaling', and strongly supports the global moratorium on commercial whaling. The government commenced action in the International Court of Justice against Japanese whaling in May 2010. Japan lodged its written submission in March 2012. Australia also joined with nine other countries in a US-led joint demarche to protest against Iceland's commercial whaling in March 2011.

Australia is committed to mobilising international efforts to improve the management of marine resources, including strengthening regional integrated oceans management and eliminating marine capture fisheries subsidies that contribute to overfishing and over-capacity. Australia is promoting regional marine conservation through the Coral Triangle Initiative, a six-country Asia-Pacific conservation partnership for food security and economic development. Australia played a key role in supporting a resolution in the United Nations General Assembly on the Protection of Coral Reefs for Sustainable Livelihoods and Development.

Role of the Department of Foreign Affairs and Trade in Australia's international relations

The Department of Foreign Affairs and Trade (DFAT) provides foreign and trade policy advice to the government. It works with other government agencies to ensure that Australia's pursuit of its global, regional and bilateral interests is co-ordinated effectively. DFAT is the lead agency managing Australia's international presence. It oversees a network spanning five continents, with 93 diplomatic and consular missions, one representative office and 46 consulates headed by honorary consuls, and the Australian Commerce and Industry Office in Taipei. The Australian Trade Commission (Austrade) manages 13 consular posts and three consulates headed by honorary consuls. DFAT's central office is in Canberra and it maintains state and passport offices in all other state and territory capitals, as well as a passport office in Newcastle and a liaison office on Thursday Island.

Through this network, DFAT works to achieve three primary outcomes to advance the interests of Australia and Australians internationally:

- advancing Australia's international strategic, security and economic interests including through bilateral, regional and multilateral engagement on Australian Government foreign and trade policy priorities
- protecting the welfare of Australians abroad and access to secure international travel documentation through timely and responsive travel advice and consular and passport services in Australia and overseas, and
- fostering public understanding of Australia's foreign and trade policy as well as projecting a positive image of Australia internationally.

As at 30 June 2011, DFAT employed 2,480 Australia-based staff, of whom around 24% were posted overseas; an additional 1,644 locally-engaged staff (LES) were employed by the Department's overseas missions. Information on the location of overseas embassies, high commissions, consulates and multilateral missions managed by DFAT, and on the location of DFAT staff overseas, can be found in the online version of the Department's annual report.

Services to the Australian community

Consular services

DFAT provides a wide range of consular services to the increasing number of Australians travelling overseas and finding themselves in need. Consular services provided by DFAT include assisting Australians who are hospitalised, imprisoned, or require welfare assistance overseas; helping family members when Australian travellers go missing or die overseas; and co-ordinating responses to overseas emergencies affecting Australian nationals. Of the 7,609,300 Australians who travelled overseas in 2010–11, consular assistance was provided to 24,186 people, including in several major international crises through the first part of 2011, in Egypt, Christchurch, Libya and Japan.

DFAT provides consular services through its network of overseas missions and honorary consulates (consisting of 170 points of consular service world-wide), the 24-hour Consular Emergency Centre in Canberra and consular co-operation arrangements with other countries. DFAT's Smartraveller campaign promotes safe overseas travel by Australians and its newest phase, launched in November 2011, uses social media platforms and web apps to provide easy access to DFAT's travel advice. The Smartraveller website received 30.1 million page views in 2010–11.

Passport services

An increasing number of Australian citizens travelling overseas rely on the government to provide secure travel documents. The government, through DFAT, issued a record 1,803,549 passports in 2010–11, up from 1,774,224 in 2009–10 and with an average turnaround time of 3.7 days. The new generation of ePassport – the N series – is Australia's most secure and visually sophisticated travel document to date. As at mid 2011, more than 10.9 million valid Australian passports were in circulation, of which more than 8.1 million were ePassports. The government delivers passport services through its network of passport offices in nine cities around Australia, diplomatic and consular missions overseas, a call centre (the Australian Passport Information Service) and around 1,700 Australia Post outlets.

Protecting the security of identity, travel documents and borders is an essential part of providing a reliable passport service. Australia contributes to the development of technical standards for travel documents as a member of the International Civil Aviation Organization, and of biometrics standards as a member of the International Organization for Standardization. The government co-operates with Canada, New Zealand, the United Kingdom and the United States, through the Five Nations Passport Conference, to refine passport operations and policy and international programs on passport fraud and biometrics.

Public information services

Public diplomacy is vital to the successful promotion and protection of Australia's national interests. Building a stronger understanding of Australia at home and abroad is essential to realising Australia's place in the world. DFAT uses diverse public diplomacy tools, such as social media, conferences, speeches and participation in international expos, to reach target audiences. These initiatives promote an accurate and contemporary image of Australia internationally and foster a clearer understanding of Australia's foreign and trade policies and priorities.

The government, through DFAT, also funds the Australia Network international television service. The Australia Network facilitates cross-cultural communication, encourages awareness of Australia and builds regional partnerships across more than 44 countries throughout the Asia-Pacific region.

Australia's overseas aid program

Across the world, 1.4 billion people live in extreme poverty, existing on less than US\$1.25 a day. Of these:

- 915 million poor people have unclean water, and 2.6 billion have inadequate sanitation
- 67 million children do not receive basic primary-level education and
- 640,000 women and children are the victims of human trafficking every year.

Every day:

- 22,000 children die, the majority from preventable causes

- More than 1,100 people die from malnutrition or starvation
- almost 1,000 mothers die as a result of pregnancy or childbirth and
- 925 million people go hungry.

Australia's overseas aid program improves the lives of people living in poverty, particularly the two-thirds of the world's poor who live in Australia's region. For instance:

- In 2010–11, Australia supported the administration of 463,000 measles vaccinations and 480,000 oral polio vaccinations to children under five in PNG.
- In East Timor, Australia has helped to improve primary education enrolment rates from 64% in 2005 to 86% in 2010.
- In 2011, Australia supported NGOs and clearance organisations in Laos to release more than 1,000 hectares of agricultural and community land from contamination with unexploded ordnance, benefitting more than 65,000 people.
- Between July 2011 and February 2012, AusAID provided life-saving assistance to an estimated 18 million crisis-affected persons, responding to 24 humanitarian emergencies.
- Working with other donors in Burma, Australia has distributed educational materials to 2,440 schools, helping over 918,000 children go to school.

What our aid program looks like

The Australian Government is committed to the implementation of the Millennium Development Goals (MDGs), which set out a series of targets, such as halving the proportion of people who suffer from hunger, and reducing the number of children under the age of five who die. The targets were agreed by the international community, as a way to reduce global poverty by 2015. In 2011, the international community was on track to achieve some of these goals, but not all. More information on the MDGs can be found at <http://www.aid.gov.au/keyaid/mdg.cfm>.

Recognising that we needed to increase our efforts, both of Australia's major political parties have agreed to a target of allocating 0.5% of Australia's gross national income (GNI) to official development assistance (ODA) by 2015.

The Independent Review of Aid Effectiveness

In November 2010, the Government commissioned the *Independent Review of Aid Effectiveness* – the first independent review of the aid program in 15 years. The review panel was broadly asked to examine the efficiency and effectiveness of the aid program, and to make recommendations to improve its structure and delivery. The panel consulted extensively, both domestically and internationally, with governments and non-government organisations, with think-tanks, other donors, with Australian business, and a range of government departments. The review found that Australia has a good aid program, which performs effectively by global donor standards. It made 39 recommendations to improve the program, covering:

- the overall purpose of Australia's aid program
- the geographic and sectoral focus of Australian aid
- the importance of partnerships in delivering Australian aid
- ways to make Australia's aid program more transparent, more accountable, and more focused on results and value for money, and
- ways to give Australia's aid program greater strategic direction, including through reformed planning and budget measures.

The Government welcomed the findings of the review, and in response to it released *An Effective Aid Program for Australia: Making a Real Difference – Delivering Real Results*. This publication sets out the government's overall aid strategy through to 2015–16.

In 2011–12, Australia is progressing towards reaching this target, with an ODA budget of \$4,836 million, representing approximately 0.35% of GNI (graph 5.1). If we increase the ODA budget as projected to 0.5% of GNI, by 2015–16 Australia should rank around the international average in terms of how much aid we provide as a proportion of GNI. In dollar terms, Australia was the 11th largest donor in 2010, and by 2015–16, we expect to be ranked between the 6th and 8th largest.

As stated in the Government's overseas aid policy statement *An Effective Aid Program for Australia*, the fundamental purpose of Australian aid is to help people overcome poverty. This also serves Australia's national interests by promoting stability and prosperity both in our region and beyond. We focus our effort in areas where Australia can make a difference and where our resources can most effectively and efficiently be deployed.

Guided by our support for the MDGs, Australia's development assistance program has five overarching goals (figure 5.2). These are:

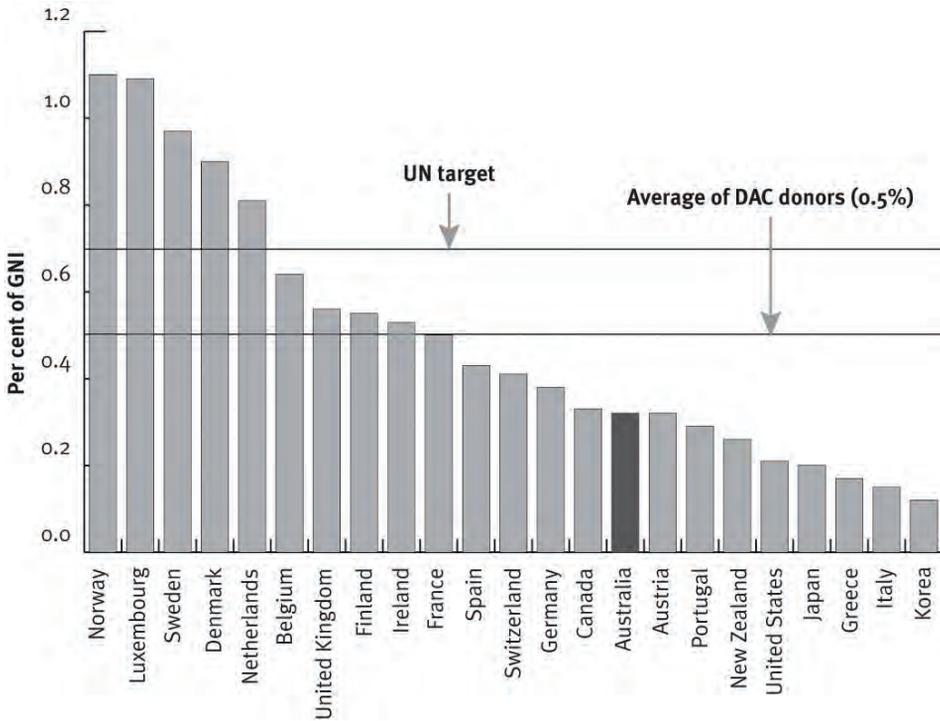
1. save lives
2. promote opportunities for all
3. support sustainable economic development
4. promote effective governance and
5. provide humanitarian and disaster responses.

How we provide aid

The main vehicle for delivering Australian aid is through country and regional programs. Australia's aid program is underpinned by strong partnerships with the governments of the countries we are helping. These are genuine partnerships with development challenges and responses discussed and agreed to by the countries. The main considerations for determining how we will help are:

- *Poverty and need* – Does the country or region really need help, and in what particular areas? What is its progress against the MDGs?
- *Effectiveness and capacity for Australian aid to make a real difference* – Is Australian aid likely to be effective? In what areas? Do we have the experience and expertise to make a difference? Do we have a relationship with the partner government that will enable us to operate effectively?

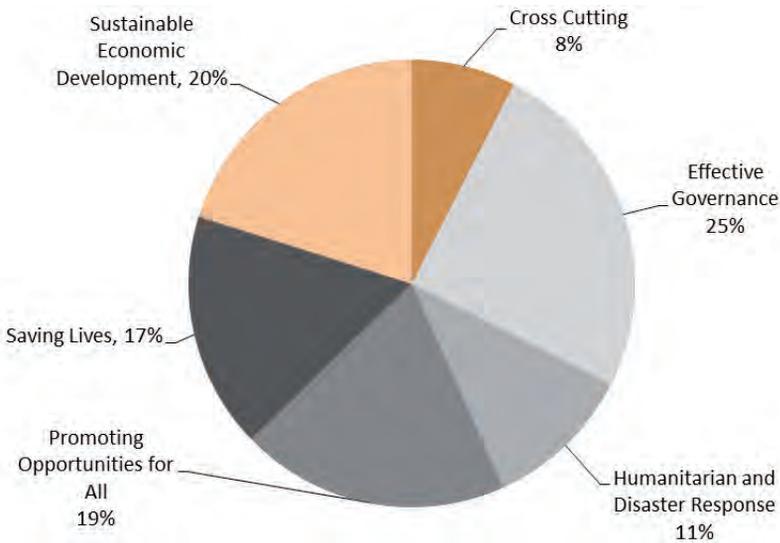
5.1 ODA/GNI FOR ALL DAC COUNTRIES(a)—2010



(a) DAC is the Development Assistance Committee – a body subsidiary to the Organisation for Economic Co-operation and Development that provides international oversight of aid, development and poverty reduction in developing countries.

Source: AusAID.

5.2 BREAKDOWN OF AUSTRALIA'S AID BY STRATEGIC GOAL—2011–12



Source: AusAID.

Australian NGOs and the aid program

Australian non-government organisations (NGOs) are important partners in delivering Australian development assistance to poor and vulnerable people around the world. NGOs extend the reach of Australia's aid program by helping out where there may be no other Australian aid presence. They can therefore directly reach the poorest and most vulnerable people, helping and empowering them, particularly in emergency situations where quick and flexible responses are needed.

In 2010–11, Australian NGOs received approximately 7% of official development assistance, or approximately \$289 million. In addition to this government funding, they also raised over \$1 billion in funding from the Australian public to support their own international community development and volunteer programs in more than 100 countries. Whether government or privately-funded, NGOs implement a broad range of activities to assist developing countries, such as improving maternal and child health, water supply, sanitation, hygiene, education, livelihoods and microfinance. With AusAID funding, it is estimated that each year Australian NGOs facilitate improved access to basic services and training for over 1 million people.

An example of the co-operation that can exist between Australian government and non-government organisations in delivering development assistance is the 2011 Australian response to the Horn of Africa crisis, where more than 13 million people required urgent humanitarian aid. The Australian Government initially provided \$6.2 million to Australian NGO partners to support humanitarian activities in the Horn of Africa, and subsequently matched an additional \$13.5 million of public donations that were raised through the Dollar-for-Dollar campaign.

- *Our national interest* – what does Australia gain from providing the assistance? How are our interests linked?

Because the circumstances of each country or region are unique, Australia's aid program looks different in each country.

As well as agreeing to what we will do, our partnership strategies also set out how we will deliver the planned program, focusing on the best way to achieve real and sustainable results. We use a mixture of:

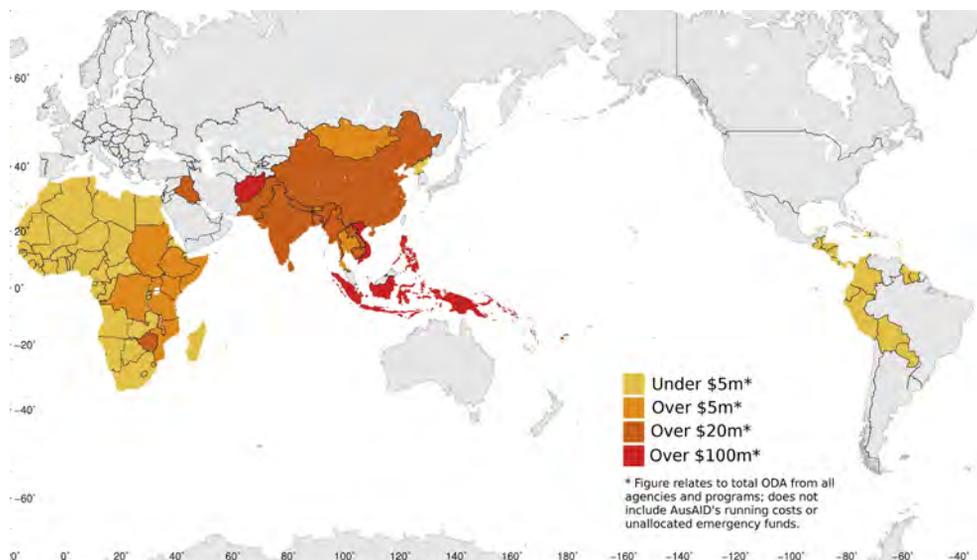
- private contractors
- multilateral organisations (such as UNICEF and the World Bank)
- international and Australian NGOs (such as World Vision and the Australian Red Cross)
- a range of Australian Government departments and agencies
- established systems within the developing country government and
- universities and research institutions.

Previously, the majority of the aid program was delivered on AusAID's behalf by commercial contractors, but this is changing as evidence increasingly suggests that other mechanisms, such as using partner government systems or civil society organisations, may be more effective. For example, the proportion of our program being delivered by international and Australian NGOs has increased from around 7.5% to 13% since 2005–06.

Where we give aid

In 2011–12, Australian aid reached a total of 113 countries. As map 5.3 shows, our near neighbours in the Pacific and East Asia receive the highest levels of Australian assistance. Our region has high numbers of poor people and is where Australia can make the most difference. Australia is the largest bilateral donor to the Pacific, and a major donor in East Asia. Australia also contributes to efforts in South and West Asia, Africa, the Middle East, Latin America and the Caribbean.

5.3 GEOGRAPHICAL ALLOCATION OF AUSTRALIA'S AID—2011–12



Source: AusAID.

Information on our biggest and most important programs is presented below, with some summary information provided on all our programs. Key statistics are presented for most countries and are described in terms of the official development assistance (ODA) budget, population and 2011 Human Development Index (HDI) ranking (tables 5.4 to 5.8).

The HDI is a comparative measure of life expectancy, literacy, education, and standard of living for 187 countries worldwide. A high HDI ranking for a country indicates that human development in that country is poor.

Further information is available at <http://www.usaid.gov.au/country/default.cfm>.

The Pacific

The Pacific region, including Papua New Guinea (PNG), is vast, with great diversity amongst its countries, but with many common challenges such as geographic isolation, small populations and markets that limit economies of scale. The region is also vulnerable to climate change and natural disasters. The economic and social performance of the region has been mixed.

There have been some successes, but many nations struggle to deliver essential services to their populations, and the region remains home to five of the world's least developed countries. Australia's aid programs with Papua New Guinea and the Solomon Islands are our second and third largest respectively. Australia is the leading donor to the region as a whole.

Papua New Guinea

PNG faces serious challenges in delivering services to its fast-growing population, and is unlikely to meet any of the MDGs by 2015. It has some of the worst health and education outcomes in the region, driven by high levels of poverty and a largely rural and often remote population. In 2011, Australia repositioned the program in PNG to focus more strongly on education (including higher education), health (including HIV/AIDS), law and justice and transport infrastructure.

Key statistics

- 2011–12 ODA Budget: \$482.3m
- Population: 6.9 million
- HDI rank: 153 of 187.

5.4 AUSTRALIA'S ASSISTANCE TO THE PACIFIC—2011–12

Country	2011–12			Priority areas
	ODA budget (\$m)	Population (no.)	HDI rank	
Papua New Guinea	482.3	6.9 million	153 of 187	Education, health, law and justice, transport infrastructure
Solomon Islands	261.6	515 817	142 of 187	Health, education and scholarships, economic growth, equitable development and governance
Vanuatu	70.1	245 786	125 of 187	Education and scholarships, health, economic growth, governance
Samoa	43.7	178 943	99 of 187	Economic growth, health, education and scholarships, governance, climate change and environmental sustainability
Fiji	37.5	854 098	100 of 187	Education and scholarships, health, equitable development, economic growth
Tonga	32.1	104 260	90 of 187	Governance, health, education and scholarships, economic growth
Kiribati	28.2	99 547	122 of 187	Education and scholarships, economic growth
Nauru	26.2	10 254	unranked	Governance, education and scholarships, health, economic growth
Tuvalu	9.9	9 970	unranked	Contribution to the Tuvalu Trust Fund, with a focus on improving health and education services
Cook Islands	4.4	19 933	unranked	Contributions to NZ aid program, focusing on education, infrastructure, private sector development and water and sanitation
Niue	4.6	1 438	unranked	Contribution to the Niue Trust Fund, support for the delivery of essential services
North Pacific	10.7	Multiple countries	varied	Minor, targeted interventions such as in the environment, public sector strengthening, and water and sanitation areas
Pacific Regional Programs	149.7	Multiple countries	varied	Education, climate change and environmental sustainability, economic growth, governance

Source: AusAID.

Priority areas

- Education
- Health
- Law and justice
- Transport infrastructure.

Some program highlights:

- In 2010, Australia funded the supply of 539,000 new textbooks for more than 3,400 primary schools and eight teacher training colleges, and our support allowed school fees to be abolished for the first three grades of school, supporting the PNG Government's aim to abolish all school fees by 2015.
- Australian support meant that thousands of people in PNG were able to access treatment for HIV. In 2010, the number of HIV testing sites increased to 266 with 134,798 people tested compared to only 32,645 people accessing testing services in 2006.
- In Bougainville, Australian support contributed to an estimated reduction in maternal deaths from 235 per 100,000 in 2005 to 123 per 100,000 in 2009.

- We are helping provide better access to justice, especially for women, at the village level. In 2004, there were about 10 female village court magistrates in PNG. At the end of 2011, there were over 700, with another 200 in the process of being appointed.
- Australia has helped maintain 2,153 kilometres of national roads, and achieve safety certification for 16 airports.

Solomon Islands

In Solomon Islands, more than half a million people live on around 90 dispersed islands, and more than 70 languages are spoken across the country. Challenges lie in communication, transport and delivery of efficient health and education services. In the late 1990s, Solomon Islands experienced civil unrest and instability, leading to a breakdown in the delivery of basic services, including law and order. The Regional Assistance Mission to the Solomon Islands (RAMSI) was launched by Pacific island countries (including Australia and New Zealand) in response to a request for assistance from Solomon Islands' government.

Key statistics

- 2011–12 ODA Budget: \$261.6m
- Population: 515,817
- HDI rank: 142 of 187.

Priority areas

- Health
- Education and scholarships
- Economic growth
- Equitable development
- Governance.

Some program highlights:

- Australian funding improved access to clean water and sanitation facilities for 14,000 people in 2010 and 15,500 people in 2011 in communities across Solomon Islands.
- In 2010–11, Australia supported a Solomon Islands Government initiative to remove school fees. This has helped more than 140,000 young Solomon Islanders get an education, including the poorest students who otherwise would have missed out on attending school.
- Australian support helped maintain 270 km of roads, which enable access to services and markets for people in rural areas. There were economic benefits to local communities as well: the road works generated up to 50,000 workdays per year in rural areas, with 50% of this work going to local women.
- With Australian support through RAMSI, revenue collection increased to over SBD1 billion in December 2010 – double that collected since 2007. The improved financial position enabled the government to maintain spending on essential services, such as health and education, across the country.

East Asia

East Asia is home to over two billion people, and a spread of the world's wealthiest and poorest countries. Since the 1960s, the region has seen greater economic growth and poverty reduction than any other region of the world, but this growth has also brought new development challenges such as pandemics and emerging infectious diseases, including HIV/AIDS; illicit drugs; and human trafficking. Australia's biggest

single development program is with Indonesia, the second most populated country in the region.

Indonesia

Indonesia is one of Australia's closest neighbours and continues to face increasingly complex development challenges. Like other developing countries, Indonesia has had recent success achieving economic growth but is still afflicted by poverty. About 120 million Indonesians live on less than US\$2 a day, meaning that any shock, like a natural disaster or an economic downturn, can be devastating. Australia is committed to helping Indonesia open up opportunities for the poor, ensure that all children receive a basic education, drive health care reform, promote good governance and establish key infrastructure.

Key statistics

- 2011–12 ODA Budget: \$558.1m
- Population: 240 million
- HDI rank: 124 of 187.

Priority areas

- Education and scholarships
- Economic growth
- Health
- Humanitarian, emergency and refugee aid
- Civil society, justice and democracy
- Economic and public sector reform
- Climate change and environmental sustainability.

Some program highlights:

- Between 2005 and 2010, Australia helped build more than 2,074 junior secondary schools (years 7–9), creating around 330,000 new school places.
- We have trained more than 5,000 health workers and managers to support childbirth.
- Between June 2010 and June 2011, Australia connected more than 410,000 people in urban areas to water and/or sanitation services.
- In 2009, Australian-funded activities reached almost 35,000 injecting drug users and over 70,000 prisoners, providing information regarding HIV prevention, counselling and referrals.

5.5 AUSTRALIA'S ASSISTANCE TO EAST ASIA—2011–12

Country	2011–12			Priority areas
	ODA budget (\$m)	Population (no.)	HDI rank	
Indonesia	558.1	240 million	124 of 187	Education and scholarships; economic growth; health; humanitarian, emergency and refugee aid; civil society, justice and democracy; economic and public sector reform; climate change and environmental sustainability
Vietnam	137.9	89 million	128 of 187	Education and scholarships, economic growth, climate change and environmental sustainability
Philippines	123.1	93.6 million	112 of 187	Education and scholarships; governance; humanitarian, emergency and refugee aid; climate change and environmental sustainability
East Timor	123.7	1.2 million	147 of 187	Education and scholarships, health, economic growth, governance
Cambodia	77.4	15.1 million	139 of 187	Education and scholarships; health; economic growth; governance; humanitarian, emergency and refugee aid
Burma	47.6	50.5 million	149 of 187	Health, education and scholarships, economic growth
Lao People's Democratic Republic	42.1	6.4 million	138 of 187	Education and scholarships, economic growth, governance
China	35.7	1.4 billion	101 of 187	Equitable development, health, climate change and environmental sustainability
Mongolia	12.2	2.7 million	110 of 187	Education, water and sanitation
East Asia Regional Programs	108.0	Multiple countries	Varied	Economic growth; humanitarian, emergency and refugee aid; health; climate change and environmental sustainability

Source: AusAID.

- More than 21,800 Supreme Court decisions are online, providing greater transparency in the court system.
- In 2010, Australia assisted communities in West Sumatra to rebuild more earthquake resilient buildings following the 2009 earthquake.

South and West Asia

South and West Asia is home to around one-fifth of the world's people and has the largest concentration of poor people in the world, the highest rate of child malnutrition, and the lowest income per capita. The region is also highly vulnerable to the adverse impacts of climate change, threatening water and food security, and increasing the risk of natural disasters and displacement of vulnerable people. Australia's program in Afghanistan is our biggest in the region, and our fourth biggest country program overall. It is an important part of Australia's broader efforts towards fostering stability in the country.

Afghanistan

Afghanistan is one of the world's least developed countries. Uruzgan province, where our development efforts are focused, has some of the worst development indicators in the country.

Only 8% of men and 1% of women are literate. About 37% of children die before they reach the age of five.

Australia's mission in Afghanistan combines military action, development and political effort. Our development objectives are to:

- strengthen the ability of the Afghan Government to deliver basic services, and to help the provincial administration in Uruzgan assume responsibility for civil roles and
- help train the Afghan National Police to help with civil policing in Uruzgan.

Key statistics

- 2011–12 ODA Budget: \$165.1m
- Population: 29.1m
- HDI rank: 172 of 187

Priority areas

- Basic service delivery (health and education)
- Rural livelihoods
- Governance
- Support for vulnerable populations.

5.6 AUSTRALIA'S ASSISTANCE TO SOUTH AND WEST ASIA—2011–12

Country	2011–12		HDI rank	Priority areas
	ODA budget (\$m)	Population (no.)		
Afghanistan	165.1	29.1 million	172 of 187	Basic service delivery (health and education), rural livelihoods, governance, support for vulnerable populations
Pakistan	92.8	184.8 million	145 of 187	Education and scholarships; health; humanitarian, emergency and refugee aid; economic growth; governance
Bangladesh	92.0	164.4 million	146 of 187	Education and scholarships, health, economic growth, climate change and environmental sustainability, governance
Sri Lanka	43.5	20.4 million	97 of 187	Humanitarian, emergency and refugee aid; education and scholarships; economic growth; climate change and environmental sustainability; governance
Nepal	26.6	29.9 million	157 of 187	Health, education and scholarships
India	25.0	1.2 billion	134 of 187	Climate change and environmental sustainability, health
Bhutan	8.0	708 484	141 of 187	Education, justice and democracy
Maldives	5.0	313 920	109 of 187	Education, justice and democracy
Regional Programs	7.1	Multiple countries	varied	Economic growth, climate change and environmental sustainability, health

Source: AusAID.

Some program highlights:

- Supporting, through the Afghanistan Reconstruction Trust Fund, the delivery of major national health, education and rural development programs that have:
 - increased school enrolments from around one million children in 2001 to over seven million, including over 2.5 million girls
 - increased access to basic health care services from less than 10% of the population under the Taliban to around 85%
 - improved over 10,000 km of rural roads, supporting the employment of hundreds of thousands of local workers.
- Training 60 Afghan master teacher trainers in Malaysia, who in turn have so far trained 168 teacher trainers in Afghanistan.
- In Uruzgan province, where around 20% of Australian assistance is delivered, some examples of what Australia has achieved are:
 - providing basic health and hygiene education to 1,780 primary school students, 34% of whom are girls
 - enabling community de-mining and mine risk education, through the training of over 100 local people in mine safety and the clearing of more than 244,000 square metres of contaminated land and
 - contributing to the distribution of 4,703 metric tonnes of food.

Africa and the Middle East

Africa is the world's most impoverished continent, with African countries comprising 33 of the 48 least developed countries. Our assistance in Africa is focused on areas where Australia has expertise and experience, and is best able to make a difference. This includes helping African countries reach their MDGs in the areas of agriculture and food security, maternal and child health, water and sanitation, and natural resource management (particularly mining). Underpinning Australia's assistance in these areas is a focus on helping build Africa's own human resource capacity through a significantly expanded scholarships program, targeted technical assistance and the placement of Australian volunteers. In North Africa and the Middle East, our assistance focuses on activities that will help to reduce conflict, improve security and encourage regional stability. In 2011, Australia responded to the pro-democracy movements that occurred across the Middle East and North Africa (known as the Arab Spring) through humanitarian and development assistance to Libya, Egypt, Tunisia, Syria and Yemen.

Latin America and the Caribbean

Australia's aid program to Latin America and the Caribbean supports our commitment to address global poverty and accelerate progress towards achieving the MDGs. Despite healthy indicators for some countries in both regions, there are

significant levels of poverty and income inequality in many countries. According to World Bank statistics, more than 17% of the population of Latin America lives on less than US\$2 a day – that

is almost 100 million people. In Haiti, one of the world's poorest countries, 77% of the population live on less than US\$2 a day and 52% live on less than US\$1 a day.

5.7 AUSTRALIA'S ASSISTANCE TO AFRICA AND THE MIDDLE EAST—2011–12

Country	2011–12		HDI rank	Priority areas
	ODA budget (\$m)	Population (no.)		
Africa Regional Program	291.3	Multiple countries	Varied, but comprising many of the lowest-ranked countries	Health; economic growth; governance; humanitarian, emergency and refugee aid
Iraq	36.6	31.5 million	132 of 187	Governance; humanitarian, emergency and refugee aid
Palestinian Territories	56.0	4.4 million	114 of 187	Governance; humanitarian, emergency and refugee aid; economic growth
Arab Spring Countries	99.5	Multiple countries	Varied	Food security and rural development, post-conflict stabilisation and recovery, humanitarian assistance

Source: AusAID.

5.8 AUSTRALIA'S ASSISTANCE TO LATIN AMERICA AND THE CARIBBEAN—2011–12

Country	2011–12		HDI rank	Priority areas
	ODA budget (\$m)	Population (no.)		
Latin America Regional Program	27.2	Multiple countries	varied	Rural development, human resource development, natural resource governance
Caribbean Regional Program	20.7	Multiple countries	varied	Climate change and environmental sustainability, governance

Source: AusAID.

Australian Bureau of Statistics role in international relations

The Australian Bureau of Statistics (ABS) is a key member of the international statistical community and plays an active role in international statistical activities. The ABS contributes constructively in a wide variety of international forums, with staff keeping abreast of the latest techniques and developments in other leading national statistical offices (NSOs).

The ABS is committed to sharing its knowledge and welcomes visitors from NSOs worldwide. It also provides technical assistance to statistical agencies in developing countries and has been funded by AusAID to support NSOs in the Pacific and Indonesia.

The ABS International Relations Strategy articulates the future directions of international work. An important function of the ABS, as specified in section 6(f) of the *Australian Bureau of Statistics Act 1975* (Cwlth), is "... to provide liaison between Australia, on the one hand, and other countries and international organisations, on the other hand, in relation to statistical matters." The Strategy provides practical ways that the ABS can engage in those international forums that contribute to the development of international standards and better practice implementation.

The ABS supports Australia's interests through a range of activities, including participation in the development of international standards and provision of statistical capacity building to Australia's neighbours. Through these activities, the ABS ensures that international standards are relevant to Australia and that our nearest neighbours have the measures of progress needed to support their social and economic development.

The ABS continues to make a valuable contribution through its participation in the United Nations Statistical Commission, the Organisation for Economic Co-operation and Development Committee on Statistics and the Economic Commission for Europe Conference of European Statisticians. It also participates in various working groups and taskforces of these and other organisations. The ABS provides

statistical leadership through participation in various international forums as both members and chairs.

This article highlights three particular internationally-focused activities:

- establishing a statistical network to improve the effectiveness of statistical systems development
- influencing the direction of household income statistical standards, and
- supporting the capacity of national statistical offices in neighbouring countries.

International statistical leadership – the Statistical Network

Around the globe, NSOs are experiencing a range of common challenges. They include the increasing difficulty faced in meeting the demands of users who require increased detail in existing statistical products, web-based services, and products that integrate several data sources.

To share experiences, expertise and resources, the ABS is co-ordinating an international collaboration initiative (the Statistical Network). The Network's intention is to collaborate with like-minded NSOs to co-design and co-develop projects for delivery. These projects aim to harmonise statistical methods, systems, and capabilities across the international statistical institutions in the Network. The Network consists of six countries: Australia, New Zealand, Canada, the United Kingdom, Norway and Sweden.

The Statistical Network has agreed that, rather than solving specific information technology problems, a better approach would be to focus on the development of a platform that is flexible enough to meet the variety of new challenges likely to arise in the future. The Network aims to achieve an information technology environment and corresponding systems that would allow production and customisation of data on a mass scale.

Combining resources and effort to develop these projects will ensure that other NSOs can benefit from the work done by the Network. This is especially true for developing countries, which could reap the benefits of new systems without a major investment.

Influencing the development of international household income statistical standards

The ABS continues to make a significant contribution to the development of international standards through effective representation on a number of international committees and working level taskforces. A particular example is in the area of household income statistics.

During 2010 and 2011, the ABS led a small Task Force, under the auspices of the Conference of European Statisticians Bureau. The purpose of the Task Force was to update the *Final Report and Recommendations of the Expert Group on Household Income Statistics* (2001), commonly referred to as *The Canberra Group Handbook*, with the latest international standards and best practice in household income measurement. The second edition of the Handbook provides a consolidated reference for those involved in producing, disseminating or analysing income distribution statistics and will be used by statistics producers and users alike.

A broader work program, also led by the ABS, is being driven by an OECD Expert Group on micro statistics on household income, consumption and wealth. The Expert Group's brief is to develop a statistical framework for the integrated measurement and analysis of micro-level household income, consumption and wealth statistics, and to develop standards and guidelines for micro-level household wealth statistics.

Assisting developing countries of our region to improve the statistical information available for decision-making

The position that ABS holds internationally brings with it a responsibility to provide assistance and leadership, particularly to our neighbours in the Asia-Pacific region.

An important part of ABS international relations activities is directed to technical assistance provided to statistical agencies in developing countries. Major goals of the ABS international engagement program are to ensure that Australia's neighbours:

- have sufficient and reliable statistical indicators for their governments to make sound decisions on the economy, society and the environment, and
- that their citizens have sufficient information to participate in the democratic process.

The ABS provides a mix of intensive support to particular countries in the region, including hosting visits from countries that are keen to learn about methodological techniques, stakeholder management, statistical processes, international standards and governance models. The ABS development program aims to transfer both knowledge and practical skills.

In 2010, the ABS received requests from nine countries in the region and hosted 17 delegations, addressing a range of technical and statistical areas. Visitors gained knowledge and information about particular subject areas but also had opportunities to 'problem-solve' some of the challenges they face in compiling their statistics in-country. These exchanges also provide ABS staff with a valuable opportunity to learn about different methodological approaches used and the challenges in data collections in other countries.

In the area of longer-term engagement, the ABS has secured specific funds from AusAID for Indonesia and the Pacific region. In addition, the ABS has signed memoranda of understanding with Mongolia and Timor-Leste.

The ABS has had long-term engagement with the BPS (Statistics Indonesia) and this was renewed through a four-year Memorandum of Understanding signed in 2010 by the two statisticians. The partnership between ABS and BPS is centred on improving the capability of BPS staff and improving the methods used to collect and compile statistics. In particular, support and assistance are designed to help BPS manage change and reform with the *Change and Reform for the Development of Statistics Plan 2012–2016*. The ABS has been funded by AusAID for the delivery of this work.

Whilst Timor-Leste is identified by AusAID as being a 'post-conflict fragile state', the institutions of government are beginning to take shape. Assistance is still needed to rebuild its public service and systems of government. It is in this area that the ABS can provide valuable assistance.

In November 2010, the ABS entered into a Memorandum of Understanding with the Timor-Leste National Directorate of Statistics (NDS) for statistical capability development. One of the main areas of co-operation was in

the development of an economy-wide business activity survey designed to measure economic performance and provide data to support budgetary decisions. The ABS, funded by the Asian Development Bank, provided practical support throughout the project's life cycle.

Under this project, an ABS officer assisted the Timor-Leste NDS to develop, conduct and release the Business Activity Survey. An important outcome of the project was the transfer of skills and knowledge to staff of the NDS.

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6

DEFENCE

This chapter was contributed by the Australian Government Department of Defence (November 2011).

The principal responsibility of the Defence portfolio is the defence of Australia and its national interests. The portfolio consists of three primary bodies: the Department of Defence; the Australian Defence Force (ADF), encompassing Navy, Army and Air Force (including their reserves); and the Defence Materiel Organisation (DMO). Together, these organisations have more than 100,000 personnel, including ADF permanent forces, reservists and civilian employees.

During 2011, Defence has maintained a high level of operational activity because of ongoing international commitments and new domestic challenges. In particular:

- The ADF continued operations to stabilise Australia's strategic environment and protect Australia's borders. As at November 2011, approximately 3,300 ADF personnel were deployed on 10 operations, spanning Africa, the Middle East and the Pacific. Additionally, approximately 550 ADF members were actively protecting Australia's borders and offshore maritime interests.
- Over 2010–11, the ADF engaged in disaster relief and humanitarian assistance operations in Australia, Pakistan, New Zealand and Japan. As part of Defence's relief efforts at home, approximately 3,400 personnel were deployed, firstly in response to the destruction wrought by the Queensland and Victorian Floods in December 2010 and January 2011, and then by Cyclone Yasi in February 2011.

This chapter details the roles and activities undertaken by Defence, with a particular focus on Defence's operations, organisational structures and present capabilities. Further information may be found on the Defence website or from the references listed in the bibliography at the end of this chapter.

The chapter also contains an article, *Aboriginal and Torres Strait Islander participation in Defence*.

Related information can be found in chapter 5 *International relations*.

Major operations 2010–11

In 2010–11, Defence was engaged in a wide range of operations, including:

- operations in East Timor, Solomon Islands and the northern Indian Ocean
- maritime security operations in the South China Sea in support of regional security
- contributions to coalition efforts to deny Afghanistan as a safe haven for terrorist groups
- operations in the Gulf region and the Horn of Africa to counter the threat of piracy
- support of United Nations missions in Africa, the Middle East and the Asia-Pacific
- support to Pakistan as a result of widespread flooding and to Japan following a devastating earthquake and tsunami
- support to New Zealand following a tragic earthquake in Christchurch and a mining disaster in Pike River
- assistance to Australian civil authorities' response to the devastating floods in Queensland and Victoria and the cyclone in North Queensland, and
- protection of Australia's borders and offshore maritime assets.

Middle East

Operation Paladin

Operation Paladin commenced in June 1956 and is Australia's ongoing contribution to the United Nations Truce Supervision Organisation in the Middle East. The ADF contributes 12 unarmed UN Military Observers who supervise, observe and report on the various cease-fire arrangements, truces and peace treaties that have been negotiated between Israel and neighbouring Arab nations since 1948.

Operation Mazurka

Operation Mazurka commenced in September 1982 and is Australia's contribution to the Multinational Force and Observers (MFO) in the Sinai. The MFO is a non-UN organisation established in 1981 to oversee the Camp David Accords of 1978 and the Egypt-Israel Peace Treaty

of 1979. The ADF contributes 25 personnel to the Multinational Force Headquarters.

Operation Slipper

Commencing in 2001, Operation Slipper is Australia's contribution to the war against terrorism and the multinational maritime interception force in the Persian Gulf. Operation Slipper represents the most significant operation for Defence and the Government, with around 1,550 ADF personnel based in Afghanistan and about 800 personnel deployed across the broader Middle East Area of Operations. The deployed forces include the Mentoring Task Force, the Rotary Wing Group and the Special Operations Task Group. They have provided ongoing reconstruction and rehabilitation work in Uruzgan Province in southern Afghanistan.

During 2010–11, the ADF maintained its focus on population protection operations to remain aligned with International Security Assistance Force (ISAF) operational priorities. The principal goal of the ADF effort in Afghanistan is to provide the Afghan security forces with the capability to take lead responsibility for the security of their country. To this end, the ADF has continued to mentor the Afghan National Army's 4th Brigade of the 205th (Hero) Corps, so that it can assume responsibility for security in Uruzgan Province.

The ADF also maintains a Navy frigate, which operates in the Arabian Gulf, the Gulf of Oman, the Arabian Sea and the Gulf of Aden, in support of counter-terrorism, maritime security and counter-piracy operations.

Operation Palate II

Operation Palate II commenced in 2005 and is Australia's contribution to the United Nations Assistance Mission in Afghanistan. Two ADF personnel serve as military advisors, one in Kabul and the other in Kandahar.

Operation Riverbank

Operation Riverbank commenced in 2008 and is Australia's contribution to the United Nations Assistance Mission for Iraq. Two ADF personnel serve as military advisors, one at the UN Headquarters in Baghdad, as the Senior Military Advisor to the Special Representative of the Secretary-General, and the other in Kirkuk.

Operation Kruger

Commencing in 2009, Operation Kruger supported the Australian Government's relations with Iraq through the delivery of tailored security support to the diplomatic mission. It involved approximately 17 ADF personnel who served in the final security detachment. This security function transitioned in August 2011 to security services provided by the Department of Foreign Affairs and Trade. Operation Kruger ceased once this handover was in effect.

Pacific

Operation Solania

Commencing in 1988, Operation Solania is the ongoing maritime surveillance operation to support the Pacific island nations in fisheries law enforcement. The ADF conducts four dedicated aerial operations per year utilising a P-3 Orion maritime patrol aircraft for maritime intelligence, surveillance and reconnaissance tasking. Navy vessels transiting through the Operation Solania Area of Operations are also assigned to support the operation. Ten Navy ship deployments provided reporting to Operation Solania during 2010–11.

Operation Anode

Commencing in 2003, Operation Anode is the ADF contribution to the Regional Assistance Mission to Solomon Islands (RAMSI) led by the Department of Foreign Affairs and Trade. The military contingent of RAMSI supports the mission by acting as a deterrent to destabilising elements, thus maintaining a stable environment for the implementation of capacity-building programs. The ADF leads the coalition military contribution to RAMSI and currently provides about 110, predominantly reserve, personnel to the operation. New Zealand, Papua New Guinea and Tonga also contribute to the military contingent.

Operation Render Safe

Operation Render Safe commenced in 2009 and provides explosive ordnance disposal support to south-west Pacific island nations for the disposal of unexploded ordnance and explosive remnants from World War II. Joint task forces have deployed to Nauru in October 2010, Solomon Islands in November 2010, Vanuatu during January to February 2011, and Papua New Guinea,

first in Rabaul, from October to November 2011, and then on the Kokoda Track in October 2011.

East Timor

Operation Astute

Operation Astute, which commenced in 2006, is the name for the ADF stabilisation operations in support of the Government of Timor-Leste (East Timor) and the United Nations Integrated Mission in Timor-Leste (UNMIT). The ADF contributes approximately 400 personnel as part of the International Stabilisation Force (ISF). In 2011, UNMIT handed over responsibility for internal security to the East Timorese police service, the Policia Nacional de Timor-Leste (PNTL). The ISF supports the East Timor security sector by being prepared to respond to incidents beyond the capabilities of the PNTL and other Timor-Leste forces.

The ADF provides the Commander of the ISF and most of the ISF Headquarters, as well as an infantry company group, an aviation group, a combat service support group and a force communications element. Most of the infantry company group and many in ISF Headquarters are ADF reservists. New Zealand contributes the balance of the ISF.

Operation Tower

Also commencing in 2006, Operation Tower is Australia's contribution to the United Nations Integrated Mission in Timor-Leste, and consists of military liaison officers in Dili and Oecussi, as well as the Operations Officer of the Military Liaison Group and the Deputy Chief of the Joint Mission Analysis Centre in Dili.

Sudan

Operation Azure

Operation Azure commenced in 2005 and was Australia's contribution to the UN peacekeeping operation in Sudan. Seventeen ADF personnel served as UN Headquarters staff, national support element staff and UN military observers during the operation. The UN mandate for peacekeeping operations in Sudan expired in July 2011 and ADF personnel moved across to the UN Mission in South Sudan under Operation Aslan.

Operation Hedgerow

Commencing in 2008, Operation Hedgerow was Australia's contribution to the joint African Union/UN hybrid mission in Darfur, Sudan. ADF personnel served as headquarters staff or specialist officers. No ADF personnel were deployed from August 2009 due to delays in the issue of visas by the Government of Sudan. This operation formally ceased in July 2011.

Operation Aslan

Operation Aslan formally began on 23 September 2011 and is Australia's contribution to the UN peacekeeping operation in the Republic of South Sudan. On 9 July 2011, and following a UN Security Council Resolution, the Republic of South Sudan became the world's newest nation. The UN Mission in South Sudan was established to support peace and security, and to help establish conditions for development in the country. The Australian Government authorised a contribution of up to 25 ADF personnel to this operation. ADF personnel serve in the UN Headquarters in Juba, deploy into the field as UN Military Liaison Officers and support the mission in the National Support Element based in Juba.

Border protection

Operation Resolute

Operation Resolute is the ADF's contribution to Border Protection Command, the whole-of-Government effort to protect Australia's borders and offshore maritime interests. It is the only ADF operation that currently defends the maritime domain of homeland Australia and its assets. The operation commenced on 17 July 2006 and consolidates previous ADF operations including Operation Relex II (suspected illegal entry vessels), Operation Cranberry (illegal fishing and smuggling), Operations Celeste and Mistral (patrols of Australia's southern ocean) and patrols protecting Australia's oil and gas infrastructure.

The Operation Resolute area of operations covers approximately 10% of the Earth's surface and includes Australia's Exclusive Economic Zone, which extends up to 200 nautical miles around the mainland, as well as Christmas, Cocos, Keeling, Norfolk, Heard, Macquarie and Lord Howe Islands. At any one time, up to 550 ADF personnel at sea, in the air and on the land, are participating in Operation Resolute, working alongside personnel from Customs and other agencies.

Peacetime tasks

Operation Gateway

Commencing in 1981, Operation Gateway is the ADF conduct of northern Indian Ocean and South China Sea maritime surveillance patrols. Australia contributes one P-3 Orion maritime patrol aircraft for four patrols per year.

Operation Pakistan Assist II

Between August and November 2010, the ADF contributed to an AusAID-led whole-of-Government humanitarian aid response to the devastating floods in Pakistan. An Australian Medical Task Force, totalling about 180 personnel, was deployed to Pakistan and treated just over 11,000 local patients over the period of the operation. It also provided over 3,000 families with essential relief items and supplied 1.2 million litres of purified water to the community of Kot Addu.

Assistance to Pike River Mine rescue, New Zealand

In November 2010, assistance was provided to the New Zealand authorities in support of the Pike River mine rescue, including air logistics support in the form of C-130 transport aircraft to move specialist mining equipment from Perth to New Zealand.

Assistance to Victorian floods

In January and February 2011, there was widespread heavy rain across the west and north-west of Victoria, producing flooding in many river systems. Defence responded to this crisis through the delivery of sandbags, general support tasks, the conduct of widespread rapid impact assessments and helicopter support. Over 250 ADF personnel provided assistance to affected communities in Victoria.

Operation Queensland Flood Assist

During December 2010 to February 2011, a joint task force was established to command and control nearly 2,000 ADF personnel who assisted communities in Southern Queensland, following severe flooding. The task force fielded a wide range of capabilities including aviation, engineering, supply, general support and specialist support elements to conduct crisis response operations in support of the civil response agencies.



January 2011 – Parked in the town of Grantham is a line of Army Bushmaster Protected Mobility Vehicles. Soldiers from 8th/9th Battalion, Royal Australian Regiment (RAR), and engineers from the 2nd Combat Engineer Regiment (CER), based at Gallipoli Barracks in Enoggera, began operations in the disaster affected area of Grantham in South-East Queensland (Operation Queensland Flood Assist). Photograph by Petty Officer Damian Pawlenko.

Operation Yasi Assist

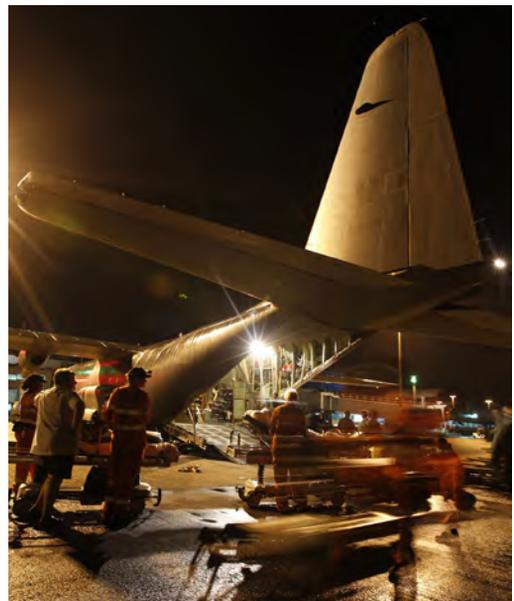
During February 2011, a threat to northern Queensland communities developed in the form of severe tropical cyclone Yasi. In response, Defence established a joint task force, to command and control the deployment of 1,200 personnel to assist the Queensland community in preparing for, and countering the effects of, the tropical cyclone.

Defence supplementation staff to Egypt

In February 2011, Defence provided support to the Head of the Australian Mission in Cairo during the civil unrest associated with the change of government in Egypt. Three ADF personnel were deployed to Cairo to assist the Head of the Australian Mission with the evacuation of Australian nationals from Egypt during the civil unrest. As the requirement for ADF support grew, the team was expanded to seven personnel.

Operation Christchurch Assist

Between February and March 2011, a joint task force was established as a part of a whole-of-Government effort to assist the Government of New Zealand following the Christchurch earthquake. The task force provided air logistics



February 2011 – Queensland Health members prepare patients for loading on board an Air Force C-130 Hercules at Cairns Airport. On the evening of Tuesday 1 February 2011, Air Force conducted aero-medical evacuation flights from Cairns to Brisbane ahead of the impending arrival of Category 5 Tropical Cyclone Yasi in northern Queensland (Operation Yasi Assist). Photograph by LAC Philip Sharpe.

support to transport the urban search and rescue teams and their equipment to and from Christchurch, to facilitate the delivery of a civilian water purification system, and to evacuate Australian nationals seeking repatriation to Australia.

Operation Pacific Assist

In March 2011, Defence contributed to the whole-of-Government effort to support Japan, following a devastating earthquake and tsunami. The ADF provided air logistics support to transport urban search and rescue teams, and specialist remote fire-fighting equipment, as well as assist the internal air movement of Japanese Self-Defense Force personnel within Japan.

Resources

At the time of the *Portfolio Budget Statements 2011–12*, the total cash budgeted outflow for Defence, including DMO, was \$28,407.8 million. This consisted of:

- \$8,023.7 million to investing activities (28% of the Defence Budget)
- \$10,104.7 million for Military and Civilian employee expenses (36% of the Defence Budget) and
- the remaining \$10,279.4 million on other operating expenses (36% of the Defence Budget).

Defence's funding from Government in 2011–12 increased by \$740.7 million when compared to that estimated at the *Portfolio Additional Estimates Statements 2010–11*. This is comprised of:

- Expenditure measures, including funding for Defence Operations totalling \$1,100.2 million; the majority of this expenditure in 2011–12 is for Operation Slipper (\$926.1m), which is the ADF's contribution to the international coalition against terrorism.
- Savings measures of \$174.5 million; the majority of the savings are from additional efficiency measures (\$226.6m) offset by capital reinvestment reprogramming (\$69.8m).
- Other budget adjustments of \$185.0 million in 2011–12, of which the majority (\$210.3m) relates to foreign exchange adjustments

partially offset by a reduction in property disposals (\$27m).

For information about Australia's defence spending compared with other countries, see *International comparisons* at the end of the chapter.

Reform

The Strategic Reform Program (SRP) is the vehicle through which Defence will make the required changes to deliver and sustain *Force 2030* (the Defence force outlined in the 2009 White Paper, together with the capabilities and infrastructure needed to support it). Commencing in 2009, the 10-year program remains Defence's highest priority after the conduct of operations.

Reform within Defence achieved a heightened pace during 2010–11, as the SRP moved into its implementation phase. Other reform initiatives undertaken at this time focused on:

- the ADF Posture Review to assess the ADF's position for meeting Australia's current and future strategic and security challenges
- realigning the Defence budget in order to ensure that Defence has the funding it needs, while reducing operating expenditure through increased efficiencies, and
- reviews on a wide set of aspects of Defence culture.

As a result of the SRP, Defence will deliver savings from efficiencies and cost reductions of around \$20 billion. Defence achieved the SRP cost reduction target of \$1,016 million in 2010–11. Areas where cost reductions were achieved included:

- upgrading and consolidating Defence's information and communications technology infrastructure
- conversion of military and contract positions into Australian Public Service (APS) positions
- improved demand management of travel, training, professional services and garrison support
- streamlining the maintenance of military equipment
- making contract improvements across a range of support and sustainment services and

- changes in the way that financial risk is managed.

In May 2011, a second phase of SRP-related savings was announced, to be realised primarily through further improvements to the design and implementation of shared services across Defence Groups. These new reforms to shared services and other efficiency measures mean that Defence can reduce overall forecast APS workforce growth by 1,000 over the next three years. Savings from these reductions will be returned to the Budget.

People

Defence is one of the largest employers in Australia, with a diverse workforce of over 100,000 employees, including permanent ADF and APS staff, part-time staff, *Gap Year* participants and reservists. Key aspects of the

Defence workforce data, as at 30 June 2011, are shown in tables 6.1 to 6.4, and include:

- The ADF workforce comprised 83,681, including 18,906 Navy permanent and reserve members, 46,438 Army permanent and reserve members and 18,337 Air Force permanent and reserve members.
- The total APS workforce was 22,421, including all APS staff recorded as active employees, that is, full-time, part-time, ongoing and non-ongoing employees in both the Department of Defence and the Defence Materiel Organisation.
- ADF Reserve Force members totalled 25,542, of whom 1,591 were also Defence APS employees.
- ADF *Gap Year* participants totalled 377 – 284 for Army and 93 for Navy. Note that these personnel are not represented in the tables below.

6.1 DEFENCE STAFF (PERMANENT ADF AND APS), By gender and employment category—As at 30 June 2011(a)(b)(c)

	<i>Men</i>	<i>%</i>	<i>Women</i>	<i>%</i>
Navy	11 411	81.5%	2 584	18.5%
Army	26 583	90.1%	2 919	9.9%
Air Force	12 145	82.9%	2 497	17.1%
<i>ADF Total</i>	50 139	86.2%	8 000	13.8%
APS Total(d)	13 350	59.5%	9 071	40.5%
Total	63 489	78.8%	17 071	21.2%

(a) Figures in this table show actual employee numbers (headcount) as at 30 June 2011. They exclude reservists (see table 6.2 below).

(b) Percentage figures are calculated against each Service total (Navy, Army and Air Force).

(c) APS figures as at 30 June 2011 include 1,591 employees who are also ADF Reserve members.

(d) APS total includes DMO personnel.

Source: *Department of Defence*.

6.2 ADF RESERVE WORKFORCE, By gender and employment category—As at 30 June 2011(a)(b)

	<i>Men</i>	<i>%</i>	<i>Women</i>	<i>%</i>
Navy	3 909	15.3%	1 002	3.9%
Army	14 662	57.4%	2 274	8.9%
Air Force	2 908	11.4%	787	3.1%
Total	21 479	84.1%	4 063	15.9%

(a) Percentage figures are calculated against ADF Reserve Services total (Navy, Army and Air Force).

(b) APS figures as at 30 June 2011 include 1,591 employees who are also ADF Reserve members.

Source: *Department of Defence*.

6.3 DISTRIBUTION OF DEFENCE PERMANENT WORKFORCE, By employment location—As at 30 June 2011(a)(b)(c)

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(d)	O/S(e)	Total
Navy	6 826	1 646	963	80	2 266	18	692	1 357	147	13 995
Army	6 371	3 354	11 333	1 305	863	88	3 740	2 176	272	29 502
Air Force	5 487	949	2 965	1 795	389	7	1 093	1 693	264	14 642
<i>ADF Total</i>	<i>18 684</i>	<i>5 949</i>	<i>15 261</i>	<i>3 180</i>	<i>3 518</i>	<i>113</i>	<i>5 525</i>	<i>5 226</i>	<i>683</i>	<i>58 139</i>
APS Total(f)	3 685	4 457	1 505	2 357	635	89	387	9 185	121	22 421
Total	22 369	10 406	16 766	5 537	4 153	202	5 912	14 411	804	80 560

(a) Figures in this table show actual employee numbers (headcount) as at 30 June 2011.

(b) Employees are shown in the location where they are administered.

(c) Members serving on ships are included against the state or territory in which the ship is home-ported.

(d) ACT figures include employees located in the Jervis Bay Territory.

(e) Overseas figures represent employees posted for long-term duty.

(f) APS figures include full-time, part-time, ongoing and non-ongoing staff.

Source: Department of Defence.

6.4 DISTRIBUTION OF ADF RESERVE WORKFORCE, By employment location—As at 30 June 2011(a)(b)(c)

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(d)	O/S(e)	Total
Navy	1 328	554	804	198	871	146	134	859	17	4 911
Army	4 801	2 965	4 185	1 220	1 727	599	624	815	—	16 936
Air Force	965	363	950	392	265	43	145	572	—	3 695
Total	7 094	3 882	5 939	1 810	2 863	788	903	2 246	17	25 542

(a) Figures in this table show actual employee numbers (headcount) as at 30 June 2011.

(b) Employees are shown in the location where they are administered.

(c) Members serving on ships are included against the state or territory in which the ship is home-ported.

(d) ACT figures include employees located in the Jervis Bay Territory.

(e) Overseas figures represent employees posted for long-term duty.

Source: Department of Defence.

Capabilities

In a changing strategic environment, the ADF needs to be a flexible and adaptable defence force, ready to be deployed at short notice and able to be sustained on operations for as long as required.

Capability is defined as the power to achieve a desired effect in a nominated environment in a specified period of time, and to sustain it for a designated period.

Defence maintains a force structure with the following elements:

The Royal Australian Navy (RAN)

- a surface combatant force of four Adelaide Class guided missile frigates and eight Anzac class frigates
- a naval aviation force, comprising 16 Seahawk Maritime Combat helicopters, six MRH-90 Maritime Support helicopters and 13 Squirrel

and three Agusta A109E Power Training helicopters

- a surface patrol capability, comprising 14 Armidale-class patrol boats, manned by 21 crews
- six Collins Class submarines
- an afloat support capability, consisting of an oil tanker and a replenishment ship home
- a mine warfare force, comprising six Huon Class coastal mine hunters and two clearance diving teams
- an amphibious lift force, comprising one amphibious landing ship, one heavy landing ship and six heavy landing craft, and
- a hydrographic force, consisting of two Leeuwin Class hydrographic ships and their embarked survey motor boats, four Paluma Class survey motor launches, a laser airborne depth sounder aircraft and a deployable geospatial support team.

The Australian Army

- a special forces capability comprising a Special Air Service regiment, a Regular Army commando regiment, an Army Reserve commando regiment and an incident response regiment
- a medium combined arms operations capability provided by 1st Brigade, consisting of a tank regiment, a cavalry regiment, two mechanised infantry battalions, an artillery regiment, a combat engineer regiment, a signals regiment and a combat service support battalion
- a light combined arms operations capability provided by 3rd Brigade, consisting of a protected mobility vehicle squadron, three light infantry battalions, an artillery regiment, a combat engineer regiment, a signals regiment and a combat service support battalion
- a motorised combined arms capability provided by 7th Brigade, consisting of a cavalry regiment, two motorised infantry battalions, an artillery regiment, a combat engineer regiment, a signals squadron and a combat service support battalion
- a regional surveillance capability, consisting of three regional force surveillance units
- an aviation capability provided by 16 Aviation Brigade, consisting of an armed reconnaissance regiment flying Tiger helicopters, an air mobility regiment flying Chinook, Blackhawk and Multi Role Helicopters, and an air mobility regiment flying Blackhawk and Kiowa helicopters
- an intelligence, surveillance, target acquisition, reconnaissance and electronic warfare capability provided by 6th Brigade, consisting of a surveillance and target acquisition regiment, an engineer support regiment, an electronic warfare regiment, an intelligence battalion and an air defence regiment
- a logistic support capability provided by 17th Brigade, consisting of a signals regiment, three force support battalions, three health support battalions, a psychology unit and a military police battalion
- a training capability based in a number of schools around Australia including the Army

Recruit Training Centre at Wagga Wagga, the Royal Military College of Australia at Duntroon in Canberra, the School of Infantry at Singleton and the Army Logistics Training Centre at Albury/Wodonga, and

- an Army Reserve capability drawn from six brigades, each comprising two or three infantry battalions, an artillery, light cavalry, and combat support and logistic support units.

The Royal Australian Air Force (RAAF)

- an air combat group of 69 F/A-18 Hornet and 24 F/A-18F Super Hornet aircraft and associated systems and support, 33 Hawk Lead-in fighter aircraft, four PC-9 forward air control aircraft for training and four Heron remotely-piloted surveillance/reconnaissance aircraft
- a combat support group comprising two expeditionary combat support wings and a health services wing
- a surveillance and response group operating air traffic control systems, radars and tactical air defence systems, 19 P-3 Orion aircraft and associated systems and support and four Wedgetail Airborne early warning and control aircraft
- an airlift group operating 24 C-130 Hercules, eight B300 King Air 350 light utility aircraft, five C-17 Globemaster III heavy airlift aircraft, two KC-30A tanker-transport aircraft for air-to-air refuelling and transport roles, and a VIP transport squadron of five aircraft
- a training group which provides a wide range of training and education programs and operates 57 PC-9 training aircraft in addition to eight B300 King Air 350 multi-role trainer aircraft
- an aerospace operational support group comprising aviation medicine support and training units, electronic warfare support, intelligence support, and aviation support services; the group also includes an aerospace test and evaluation unit that operates two F/A-18 Hornet aircraft and two PC-9 aircraft
- three contingency bases, and
- a test and evaluation range, air weapons ranges and other smaller ranges.

Defence Materiel Organisation

The Defence Materiel Organisation (DMO) equips and sustains the ADF through the acquisition and sustainment of capital equipment. The operational success of the ADF depends on the DMO providing equipment on time, on budget, and to the required levels of capability, quality and safety. The DMO, as a prescribed agency under the *Financial Management and Accountability Act 1997* (Cwlth), is a professional service delivery organisation, principally driven by the defence policies and objectives set by the Australian Government and the requirements of the ADF. It aims to be a business-like, accountable and outcome-driven organisation with a strong and close relationship with the Government, its Defence customers and industry.

The DMO is currently managing over 190 major acquisition projects (those with a contract value of more than \$20 million) and more than 90 minor projects. It also provides sustainment management services for over 100 'fleets' of military equipment. To meet these demands, the DMO has many of its own staff, together with contracted industry suppliers, across Australia and overseas including the United States of America, United Kingdom, France, Spain and New Zealand.

The DMO and the Australian defence industry have a significant and ongoing role to play in delivering new equipment on time, on budget and to specifications underlined by capability effect, quality and safety. In 2011–12, the DMO is budgeted to spend in excess of \$11 billion, which equates to about 40% of the Defence budget.

The DMO will manage acquisition and sustainment worth over \$115 billion during the next decade, with around 50 to 55% to be spent in Australia. The latest Defence Capability Plan includes about \$147 billion worth of projects in Budget 2011–12 prices, which is equivalent to around \$214 billion out-turned (i.e. taking into account projected inflation rates).

Defence estate

Defence provides facilities and infrastructure in all states and territories to support Australia's defence force capability. Defence's estate totals about 3 million hectares and comprises approximately 400 owned properties (including 72 significant bases and several world heritage areas), 25,000 buildings plus 6,000 other

structure assets, as well as about 150,000 items of fixed plant and equipment. These facilities and infrastructure are varied and complex and include military headquarters, airfields, ports, broad acre training areas and firing ranges, storage facilities (including munitions storage), research laboratories, communication and intelligence installations, workshops and maintenance facilities, educational facilities, office and residential accommodation, and recreational facilities.

Climate change initiatives

As the Commonwealth's largest landholder and a significant user of resources, Defence has considerable environmental stewardship responsibilities and is committed to reducing its energy consumption and carbon emissions, particularly in non-operational and support activities. Defence has in place policies and strategies to understand and reduce its emissions from electricity, gas and fuel use and is continuing to identify and implement new initiatives that aim to further reduce impacts from carbon emissions.

In 2011, Defence continued to support the Government's agenda on climate change through implementing resource efficiency strategies and awareness raising initiatives. Earth Hour 2011 was promoted within Defence with many Defence bases across Australia participating by switching off non-essential lights and other electrical equipment in facilities where possible.

Defence Housing Australia

Defence Housing Australia (DHA) provides high quality housing and related services to members of the ADF to meet the operational requirements of Defence.

DHA was established as a statutory authority under the *Defence Housing Australia Act 1987* (Cwlth). It manages around 18,000 residences in all states and territories of Australia, representing around \$9 billion worth of housing stock. Over 60% of these residences are owned by private investors and leased back to DHA through the sale and leaseback program. DHA manages over 20,000 property allocations each year and undertakes comprehensive repairs and maintenance services on houses occupied by ADF members. Staff support ADF members from 19 Housing Management Centres and other offices located across Australia.

DHA has an innovative sale and leaseback program, which ensures efficient use of DHA's capital, allowing DHA to develop quality residential properties in key locations across the country, sell them to investors and then lease them back.

DHA completed a major project under the Government's Nation Building – Economic Stimulus Plan, constructing 829 houses around Australia. The program delivered 27 houses more than planned and was finalised six months ahead of schedule. The 829 additional houses provided much needed accommodation to serving ADF members and their families, increasing the supply of residential housing at a time of historically low national rental vacancy. It is estimated that the

project generated 660 jobs directly and a further 1,650 jobs indirectly.

International comparisons

In absolute terms, Australia was the 13th largest defence spender globally in the financial year 2010–11.

As a proportion of gross domestic product (GDP), in the financial year 2010–11 Australia spent 2.1% of GDP on defence, less than key partners such as the United Kingdom (2.7%) and the United States of America (5.3%) but more than regional countries such as Malaysia (1.6%), Indonesia (0.8%) and New Zealand (1.7%).

Aboriginal and Torres Strait Islander participation in Defence

Defence delivers a range of programs for Aboriginal and Torres Strait Islander people and communities, including implementation of initiatives and strategies arising from the *Defence Reconciliation Action Plan 2010–14* and the whole-of-Government targets set under the Closing the Gap on Indigenous Disadvantage agenda. Funding for these strategies is provided under the *Defence White Paper 2009*.

The White Paper funded two lines of activity aimed at increasing Aboriginal and Torres Strait Islander participation in the workforce, and thus assisting Defence to build a diversified workforce. The *Defence Reconciliation Action Plan 2010–14* outlines most of the activities being undertaken by Defence to meet these outcomes. Overlaying this is the Council of Australian Governments (COAG) agreed target for all Commonwealth, state and territory entities to achieve a minimum Aboriginal and Torres Strait Islander representation of 2.7% of the total workforce by 2015.

The 2010–11 financial year saw a modest increase in Aboriginal and Torres Strait Islander Defence employees. The strategies employed encompass initiatives to attract and recruit more Aboriginal and Torres Strait Islander people from remote, regional and urban communities throughout Australia.

The Defence Indigenous Development Program is now in its third year, with courses underway in Katherine, Northern Territory and Cairns, Queensland. The program provides the opportunity for Aboriginal and Torres Strait Islander Australians from remote communities to acquire skills which are transferable back into their communities and enhance the participants' ADF enlistment opportunities. Of the two programs completed in December 2010, 16 graduates commenced ADF recruitment processes and eight enlisted in the ADF. All graduates completed a range of vocational training and skills development, and most gained full-time employment after completing the program. Programs for 2011 commenced in March, with 72 individuals screened and 52 participants selected. A review of the direction and outcomes of the program will be undertaken and the results used for planning future courses.

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Defence Annual Report 2010–11, Canberra

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Defence Housing Australia, last viewed January 2012, <www.dha.gov.au>

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7

POPULATION

Population statistics measure the size, growth, composition and geographic distribution of the population, as well as the components that shape population change – births, deaths and migration. Population statistics underpin discussion of a wide range of topical issues, including dynamics in family structures, fertility, ageing and migration. Statistics on population trends assist governments to develop social and economic policies in areas such as health, education, housing, the labour market and the environment.

There are important legislative requirements for the Australian Bureau of Statistics (ABS) to produce population estimates. The legislation that determines the distribution of state, territory and local government grants uses ABS population estimates as one of the bases for calculation. Population estimates are also used to determine the number of seats to which each state and territory is entitled in the House of Representatives.

The Census of Population and Housing, which has been held every five years since 1961 (and at longer intervals before then), is the primary source of information on Australia's population. While the most recent Census was conducted in August 2011, the results were not finalised at time of preparation. The latest Census information presented in this chapter is sourced from the 2006 Census of Population and Housing, conducted in August 2006.

This chapter contains two special articles, *Characteristics of recent migrants to Australia* and *Humanitarian arrivals*.

Further information on the Australian people and their characteristics can be found in many chapters of *Year Book Australia*.

Population size and growth

Australia's estimated resident population (ERP) at 30 June 2010 was 22.3 million, an increase of 1.6% (or 348,000 people) from the previous year (table 7.1).

The ERP figures for Australia and its states and territories are calculated using a base figure obtained from the most recent Census of Population and Housing (currently the 2006 Census). To obtain ERP figures from the Census results, the raw Census population count is adjusted for visitors from overseas and interstate on Census night, Australian residents temporarily overseas on Census night and an estimate of both the number of people missed and those counted more than once. Table 7.1 illustrates the components used to estimate ERP and population change.

Over the past ten years, Australia's ERP has grown by 16% or 3.1 million people. The growth of Australia's population has two components: natural increase (the excess of births over deaths) and net overseas migration (the net gain or loss of population through immigration to Australia and emigration from Australia). For state and territory estimates, a third component, net interstate migration, is also included. Since Federation in 1901, Australia's population has increased by 18.5 million people. Graph 7.2 shows the growth in Australia's population since Federation.

Over the last 50 years, population growth has occurred unevenly across the states and territories (table 7.3). Consequently, the proportion of Australia's population resident in each state and territory has changed over time. From 1960 to 2010, the proportion of the

7.1 COMPONENTS OF POPULATION CHANGE AND ESTIMATED RESIDENT POPULATION(a)

Year	ERP at start	Births	Deaths	Natural	Net overseas	ERP at end of	Increase	Increase
	of period			increase(b)	migration	period			Increase	%
	'000	'000	'000	'000	'000	'000	'000	
2004–05(c)	20 127.4	255.9	131.4	124.6	123.8	20 394.8	267.4	1.33
2005–06(c)	20 394.8	263.5	134.0	129.5	146.8	20 697.9	303.1	1.49
2006–07	20 697.9	277.7	136.0	141.7	232.8	21 072.5	374.6	1.81
2007–08	21 072.5	289.5	140.7	148.8	277.3	21 498.5	426.1	2.02
2008–09	21 498.5	297.1	143.7	153.3	299.9	21 951.7	453.2	2.11
2009–10(d)	21 951.7	291.2	141.5	149.7	198.3	22 299.8	348.0	1.59

(a) For further information on the components of population change, please refer to the explanatory notes in *Australian Demographic Statistics* (3101.0).

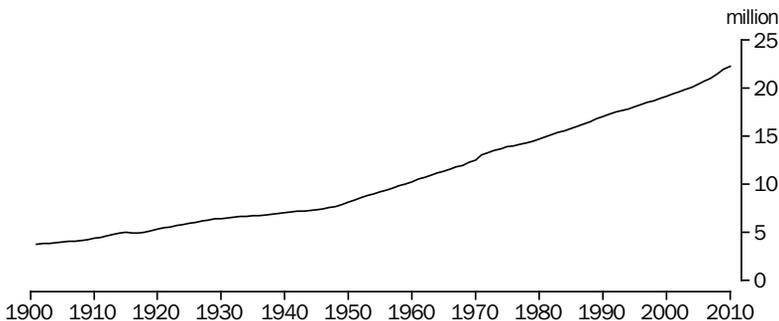
(b) The excess of births over deaths.

(c) Differences between total increase and the sum of the components of population change prior to September quarter 2006 are due to intercensal discrepancy.

(d) Preliminary estimate.

Source: *Australian Demographic Statistics* (3101.0).

7.2 POPULATION OF AUSTRALIA



Source: *Australian Historical Population Statistics* (3105.0.65.001); *Australian Demographic Statistics* (3101.0).

7.3 POPULATION, By state and territory(a)(b)

30 June	NSW '000	Vic. '000	Qld '000	SA '000	WA '000	Tas. '000	NT '000	ACT '000	Aust.(c) '000
1960	3 832	2 857	1 496	945	722	344	26	52	10 275
1970	4 522	3 445	1 793	1 158	991	388	79	131	12 507
1980	5 172	3 914	2 266	1 308	1 269	424	118	224	14 695
1990	5 834	4 379	2 899	1 432	1 613	462	164	282	17 065
2000	6 486	4 741	3 562	1 505	1 874	471	196	315	19 153
2005	6 756	5 049	3 995	1 553	2 017	486	206	330	20 395
2006	6 816	5 127	4 091	1 568	2 059	490	211	334	20 698
2007	6 905	5 221	4 196	1 586	2 113	493	215	341	21 072
2008	7 015	5 327	4 309	1 604	2 177	498	221	346	21 499
2009	7 127	5 447	4 425	1 625	2 244	503	226	352	21 952
2010	7 222	5 540	4 506	1 644	2 291	507	229	359	22 300

(a) Includes estimates of the Aboriginal and Torres Strait Islander population from 1961 onwards.

(b) Prior to 1971, estimates of the population were based on the number of people actually present in Australia. From 1971 onwards, the concept of estimated resident population (ERP) was introduced. See explanatory notes of *Australian Demographic Statistics* (3101.0) for more information.

(c) Includes Other territories (Jervis Bay Territory, Christmas Island and the Cocos (Keeling) Islands) from 1998 onwards.

Source: *Australian Historical Population Statistics* (3105.0.65.001); *Australian Demographic Statistics* (3101.0).

Australian population living in the following states decreased: New South Wales (from 37% to 32%), Victoria (from 28% to 25%), South Australia (9.2% to 7.4%) and Tasmania (3.3% to 2.3%). The proportion of Australia's population living in all other states and territories increased over the same period, with Queensland increasing from 15% to 20%, Western Australia from 7.0% to 10.3%, the Australian Capital Territory from 0.5% to 1.6% and the Northern Territory from 0.2% to 1.0%. Western Australia overtook South Australia to become the fourth most populous state in 1982.

Components of population growth

The Australian population has more than doubled from 10.3 million in 1960 to 22.3 million in 2010. Since the start of the ERP measure in 1971, natural increase has been the main component of population growth in Australia. However, in the last five years, net overseas migration has been the larger contributor to population growth. Net overseas migration is more volatile than natural increase, fluctuating under the influence of government policy as well as political, economic and social conditions in Australia and the rest of the world.

Estimates of annual growth at 30 June due to natural increase and net overseas migration from 1972 to 2010 are shown in graph 7.4.

In 1972, the excess of births over deaths resulted in a natural increase of 161,800 persons.

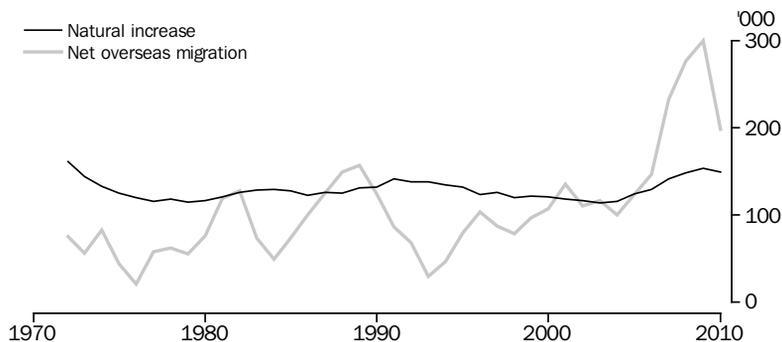
Declining fertility led to a fall in natural increase to between 110,000 and 130,000 before peaking at 141,600 in 1991. Natural increase again dropped to a low of 114,400 persons in 2003. In recent years, due to an increase in births, there has been a rise in natural increase to 153,300 persons in 2009 and 149,700 in 2010. Since 2006, net overseas migration has contributed more people to the population than natural increase, adding 198,300 people in 2010.

In 2010, the crude death rate was 6.4 deaths per 1,000 population, falling from 8.3 in 1972. The crude birth rate declined from 19.9 births per 1,000 population in 1972 to 13.0 in 2010. The lowest crude birth rate during this period, 12.4 births per 1,000 population, was recorded in 2004. Crude birth and death rates from 1972 to 2010 are shown in graph 7.5.

Population age and sex structure

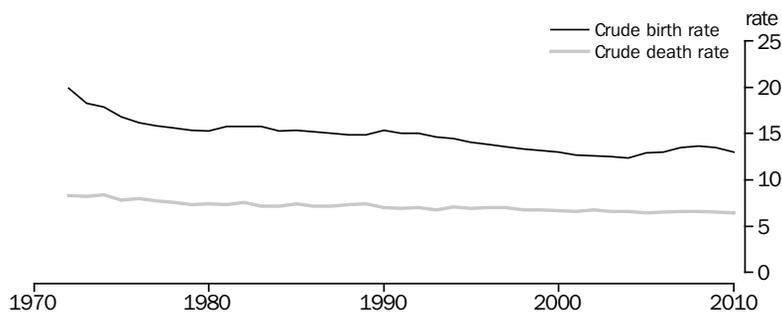
Over the last 50 years, the absolute number of people increased in all age groups. However, the proportion of the population in older age groups has increased while the proportion in younger age groups has declined. Graph 7.6 shows the proportions of the population by age group and sex in 1960 and 2010, illustrating the ageing of Australia's population. Australia's population is ageing because of sustained below replacement level fertility, resulting in proportionally fewer children in the population, and increased life expectancy, resulting in proportionally more older people in the population.

7.4 COMPONENTS OF POPULATION GROWTH, At 30 June



Source: Australian Historical Population Statistics (3105.0.65.001);
Australian Demographic Statistics (3101.0).

7.5 CRUDE BIRTH AND DEATH RATES(a)



(a) Per 1,000 population.

Source: Australian Historical Population Statistics (3105.0.65.001);
Australian Demographic Statistics (3101.0).

In 1960, there were 109,600 more males than females in Australia's population, while in 2010 there were 96,500 more females than males. Since 1979, Australia has had more females than males. At 30 June 2010, the sex ratio of Australia's population was 99.1 males per 100 females.

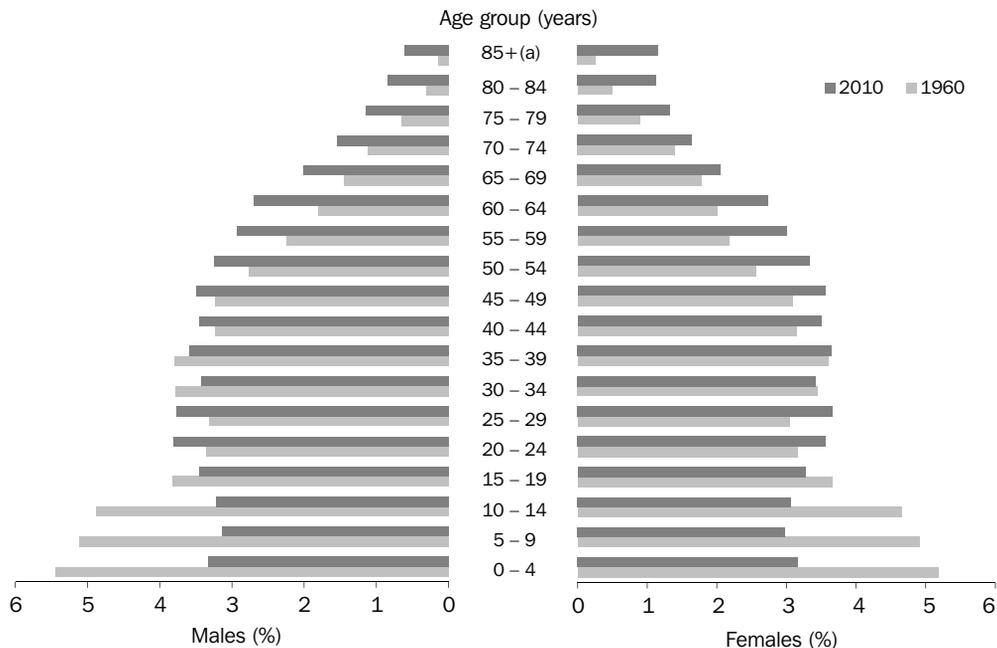
In 1960, the age composition of the Australian population was as follows: people aged 0–14 years represented 30% of Australia's population, 15–64 years 61%, 65 years and over 8.5%, and people aged 85 years and over 0.4%. Although Australia's population continued to grow after 1960, the proportion of children aged 0–14 years decreased to 19% by 2010. In contrast, the proportion of people aged 15–64 years increased to 68% and the proportion of the population aged 65 years or more increased to 13%. The

proportion of people aged 85 years and over increased more than four-fold, from 1960 levels, to 1.8% (graph 7.7).

The change in the age structure of Australia's population over time is illustrated by the change in the median age (the age at which half the population is older and half is younger). In 2010, the median age of the Australian population was 36.9 years, an increase of 4.8 years over the median age of 32.1 years in 1990. Graph 7.8 shows the median ages of the population of the states and territories in 1990 and 2010.

In 2010, the population of Tasmania had the highest median age of all states and territories (39.9 years), closely followed by South Australia (39.2 years). The Northern Territory (31.3 years) had the lowest median age in 2010.

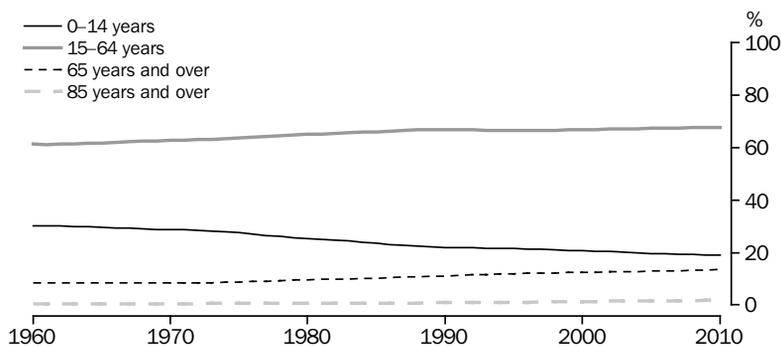
7.6 AGE DISTRIBUTION OF POPULATION(a)



(a) The 85+ age group includes all ages 85 years and over and is not directly comparable with the other age groups.

Source: Australian Historical Population Statistics (3105.0.65.001); Australian Demographic Statistics (3101.0).

7.7 PROPORTION OF POPULATION, By age group

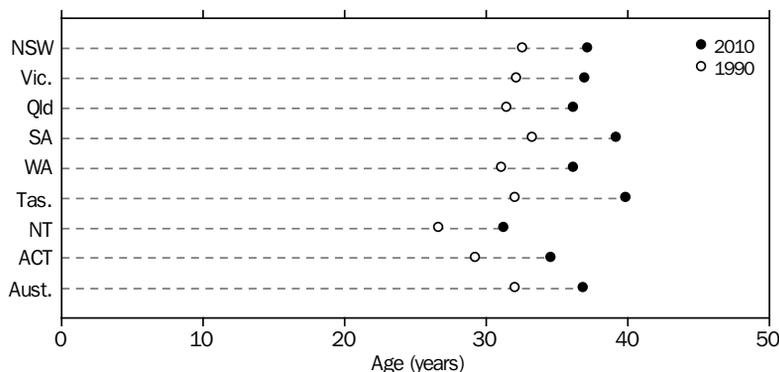


Source: Australian Historical Population Statistics (3105.0.65.001); Australian Demographic Statistics (3101.0).

Tasmania experienced the largest increase in median age over the 20 years to 2010, increasing by 7.8 years from 32.1 years in 1990 to 39.9 years in 2010. The next largest increase was South Australia, increasing by 5.9 years, from 33.3 years in 1990 to 39.2 years in 2010.

In 2010, there were just over 3.0 million people aged 65 years or more in Australia, an increase of 92,600 people (3.2%) over 2009. All states and territories experienced growth in this age group, with the Northern Territory experiencing the greatest increase (6.6%) (table 7.9).

7.8 MEDIAN AGE OF POPULATION



Source: Australian Demographic Statistics (3101.0).

7.9 OLDER AUSTRALIANS(a)—At 30 June 2010

	AGED 65 YEARS AND OVER		AGED 85 YEARS AND OVER	
	Proportion of population in 2010 %	Population growth from 2009 to 2010 %	Proportion of population in 2010 %	Population growth from 2009 to 2010 %
New South Wales	14.1	3.0	1.9	5.5
Victoria	13.7	2.9	1.8	5.1
Queensland	12.6	3.9	1.5	5.0
South Australia	15.6	2.5	2.3	4.7
Western Australia	12.1	3.6	1.5	5.0
Tasmania	15.6	2.8	1.9	3.7
Northern Territory	5.5	6.6	0.3	6.0
Australian Capital Territory	10.4	4.2	1.3	6.9
Australia(b)	13.5	3.2	1.8	5.2

(a) Persons aged 65 years and over.

(b) Includes Other territories (Jervis Bay Territory, Christmas Island and the Cocos (Keeling) Islands).

Source: Australian Demographic Statistics (3101.0).

Baby Boomers turn 65 years

In 2011, the first group of the Baby Boomer generation (those born between 1946 and about 1965) turned 65 years of age. It was projected that those aged 65 years and over would account for 14% of Australia's population in 2011 and would increase to 20% of the population in 2030. For more information, see *Population Projections, Australia, 2006 to 2101* (3222.0).

The number of people aged 85 years and over in Australia has increased by 5.2% from 2009 to 2010, now equalling 394,500. Again, growth in this age group occurred in all states and territories, with the Australian Capital Territory experiencing the greatest increase of 6.9%.

Population projections

In 2008, the ABS published projections of the population of Australia to the year 2101, and of the states, territories, capital cities and balances of state to the year 2051, based on assumptions about future levels of fertility, mortality and overseas and interstate migration. Three main projections (Series A, B and C) were published using different combinations of assumptions. The current set of population projections is based on preliminary population estimates for 30 June 2007. Hence, differences will be noted between this section based on preliminary 2007 estimates, and other sections of the Population chapter based on revised estimates.

Assumptions used for the three series of projections were:

Series A

- a total fertility rate of 2.0 babies per woman from 2021 onwards
- life expectancy at birth increasing to 93.9 years for males and 96.1 years for females by 2056 and remaining constant thereafter
- net overseas migration of 220,000 people per year from 2011 onwards, and
- high levels of interstate migration.

Series B

- a total fertility rate of 1.8 babies per woman from 2021 onwards
- life expectancy at birth increasing to 85.0 years for males and 88.0 years for females by 2056 and remaining constant thereafter
- net overseas migration of 180,000 per year from 2008 onwards, and
- medium levels of interstate migration.

Series C

- a total fertility rate of 1.6 babies per woman

from 2021 onwards

- life expectancy at birth increasing to 85.0 years for males and 88.0 years for females by 2056 and remaining constant thereafter
- net overseas migration of 140,000 per year from 2008 onwards, and
- low levels of interstate migration.

Australia's population in June 2007 of 21.0 million people is projected to increase to between 30.9 million and 42.5 million in 2056, and reach between 33.7 million and 62.2 million by 2101.

All three series project continuing population growth throughout the projection period. In Series A, the population is projected to reach 42.5 million in 2056 and 62.2 million in 2101. In Series B, the population will reach 35.5 million in 2056 and 44.7 million in 2101. In Series C, the projected population is 30.9 million for 2056 and 33.7 million for 2101 (graph 7.10).

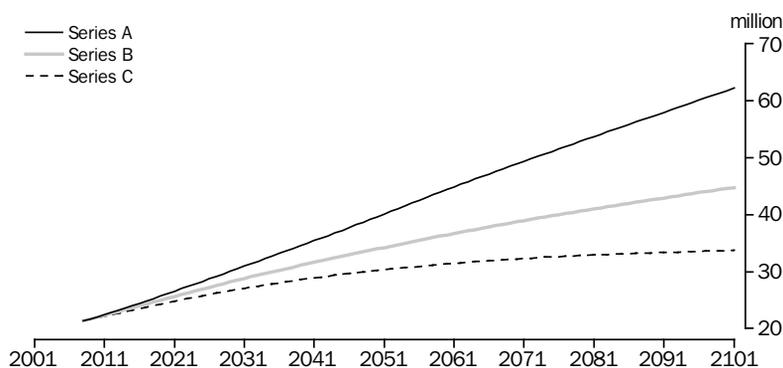
The growth rate of Australia's population reflects the interaction of the components of population change – natural increase (the excess of births over deaths) and net overseas migration.

In the 10 years to June 2007, Australia's population increased by 1.3% per year on average, with just over half of this growth resulting from natural increase and just under half from net overseas migration. In 2006–07, there were 274,300 births and 134,800 deaths in Australia, resulting in a natural increase of 139,500 people, while net overseas migration contributed 177,600 people to Australia's population.

In Series C, a state of natural decrease, in which deaths outnumber births, is reached in 2048. However, net overseas migration more than compensates for losses due to natural decrease and Australia's population continues to increase, albeit slowly, throughout the projection period. A state of natural decrease is also reached in Series B, but only in the last year of the projection (2101). In contrast to the 2004-based set of ABS population projections released in November 2005, no series shows population decline for Australia before the end of the century.

Series B projects continuing population growth to 2056 in all states and territories except Tasmania, where the population increases slowly before levelling out by around 2040 and then decreases

7.10 PROJECTED POPULATION—At 30 June



Source: *Population Projections, Australia, 2006 to 2101 (3222.0)*.

marginally from 2051 onwards (table 7.11). Between June 2007 and 2056, the populations of both Queensland and Western Australia are projected to more than double (with increases of 109% and 104% respectively) while the Northern Territory is projected to increase by 87%. In comparison, the projected growth for Australia for the same period is 69%.

In Series B, New South Wales is projected to remain the most populous state in Australia, although its share of Australia's population will decline from 33% in June 2007 to 29% in June 2056. Queensland is projected to replace Victoria in 2050 as the second most populous state, with Queensland's share of Australia's population increasing from 20% to 25% over the next 50 years and Victoria's share decreasing marginally, from

25% to 24%. Western Australia will increase its share of Australia's population from 10% in June 2007 to 12% in June 2056, while South Australia's share will decline from 7.5% to 6.2% over the same period. Similarly, Tasmania's share will decline from 2.3% in June 2007 to 1.6% in June 2056. The Northern Territory's share will remain at a similar level, increasing from 1.0% to 1.1%; likewise the Australian Capital Territory's share will change only marginally, decreasing from 1.6% to 1.4%.

Graph 7.12 illustrates the ageing of Australia's population projected to occur over the next 90 years. Ageing of the population is a trend that has been evident over recent decades as a result of fertility remaining below replacement level and declining mortality rates. In all three series (A, B and C), this trend is projected to continue.

How does the ABS develop the assumptions used in ABS population projections?

Calculating a set of population projections first begins by determining the assumptions that will be used to project the size and structure of the future population of Australia. The process of developing population projections involves research, analysis, consultation and computation. Analysis of demographic trends, research into the determinants of population growth and distribution, and consultation with various individuals and government department representatives at the national and state levels are necessary to formulate the assumptions and to ensure their general relevance for the projection period.

As future levels of fertility, mortality, overseas migration and internal migration are unpredictable, two or more assumptions are used for each component. These are intended to illustrate a range of possible future outcomes, although there can be no certainty that any particular outcome will be realised, or that future outcomes will necessarily fall within this range.

7.11 ACTUAL AND PROJECTED POPULATION—At 30 June

	2007(a)	2026(b)			2056(b)		
	<i>Actual</i> '000	<i>Series A</i> '000	<i>Series B</i> '000	<i>Series C</i> '000	<i>Series A</i> '000	<i>Series B</i> '000	<i>Series C</i> '000
<i>Capital city/balance of state</i>							
Sydney	4 334.0	5 487.2	5 426.3	5 358.2	7 649.0	6 976.8	6 565.2
Balance of New South Wales	2 554.0	3 189.9	2 968.8	2 780.2	4 140.1	3 233.4	2 646.1
<i>New South Wales</i>	6 888.0	8 677.0	8 395.1	8 138.5	11 789.1	10 210.2	9 211.3
Melbourne	3 805.8	5 272.3	5 038.1	4 861.7	7 970.7	6 789.2	6 100.9
Balance of Victoria	1 399.1	1 626.1	1 624.1	1 636.3	1 879.6	1 749.1	1 742.9
<i>Victoria</i>	5 204.8	6 898.3	6 662.2	6 498.0	9 850.3	8 538.3	7 843.8
Brisbane	1 857.0	2 908.0	2 681.1	2 465.6	4 955.1	3 979.3	3 237.0
Balance of Queensland	2 324.5	3 645.4	3 356.9	3 129.7	5 966.3	4 759.6	3 998.2
<i>Queensland</i>	4 181.4	6 553.3	6 038.0	5 595.2	10 921.3	8 738.9	7 235.2
Adelaide	1 158.0	1 410.8	1 384.5	1 391.8	1 848.5	1 651.8	1 623.7
Balance of South Australia	426.2	531.5	499.8	451.0	691.4	552.7	406.7
<i>South Australia</i>	1 584.2	1 942.3	1 884.4	1 842.9	2 539.9	2 204.5	2 030.4
Perth	1 554.1	2 455.2	2 267.6	2 112.1	4 164.4	3 358.4	2 815.5
Balance of Western Australia	552.0	796.8	732.9	660.5	1 207.6	935.0	702.3
<i>Western Australia</i>	2 106.1	3 252.0	3 000.5	2 772.7	5 372.0	4 293.4	3 517.7
Hobart	207.4	266.8	245.3	228.2	367.2	279.7	224.0
Balance of Tasmania	286.0	338.5	307.0	277.5	411.1	291.2	202.6
<i>Tasmania</i>	493.4	605.3	552.3	505.7	778.3	571.0	426.6
Darwin	117.4	189.3	165.2	142.4	334.9	243.0	169.2
Balance of Northern Territory	97.5	140.1	119.8	100.8	238.1	158.6	94.9
<i>Northern Territory</i>	214.9	329.4	285.0	243.3	573.0	401.6	264.2
<i>Australian Capital Territory(c)</i>	339.8	462.5	416.5	373.0	683.2	509.3	374.2
Total capital cities(d)	13 373.4	18 452.0	17 624.7	16 933.0	27 973.0	23 787.5	21 109.6
Total balance of states and territories(e)(f)	7 641.7	10 271.0	9 611.9	9 038.9	14 537.3	11 682.5	9 796.5
Australia(f)	21 015.0	28 723.0	27 236.7	25 971.9	42 510.4	35 470.0	30 906.1

(a) Preliminary estimated resident population at 30 June 2007, which was used as the base for the projections.

(b) Projections based on preliminary estimated resident population at 30 June 2007.

(c) Canberra and Balance of ACT not projected separately.

(d) Includes ACT.

(e) Excludes Balance of ACT.

(f) Includes Other territories (Jervis Bay Territory, Christmas Island and the Cocos (Keeling) Islands).

Source: *Population Projections, Australia, 2006 to 2101 (3222.0)*.

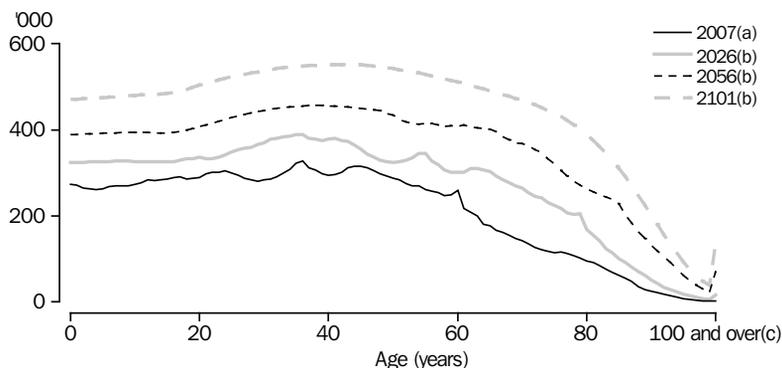
The median age of Australia's population is projected to increase from 36.7 years in June 2007 to between 38.7 and 40.7 years in 2026 and to between 41.9 and 45.2 years in 2056. In 2101, the median age of the population is projected to reach between 43.8 and 46.7 years.

Ageing of the population affects the relative sizes of different age groups within the population. The proportion of the population aged under 15 years is projected to decrease from 19% (4.1 million people) of Australia's population in 2007 to between 15% and 18% (4.5 million and 7.5

million) in 2056 and to decline to between 14% and 17% (4.7 million to 10.4 million) in 2101. In contrast, the proportion of the population aged 65 years and over is projected to increase from 13% (2.8 million people) in 2007 to between 23% and 25% (7.8 million and 10.4 million) in 2056, and between 25% and 28% (9.3 million and 17.1 million) in 2101.

Table 7.13 presents a range of indicators, such as population size, age structure and proportion living in capital cities. It illustrates changes in Australia's population from 1901 to 2101.

7.12 AGE STRUCTURE OF THE PROJECTED POPULATION



(a) Preliminary estimated resident population at 30 June.

(b) Series B population projections.

(c) Includes all ages 100 years and over and is not directly comparable with other ages.

Source: *Population Projections, Australia, 2006 to 2101 (3222.0)*.

7.13 POPULATION, Summary indicators

		1901	1947	1971	2007(a)	2026(b)	2056(b)	2101(b)
Total population	'000	3 774.1	7 579.4	13 067.3	21 015.0	27 236.7	35 470.0	44 744.8
Proportion of population								
0–14 years	%	35.2	25.1	28.7	19.4	17.9	16.6	16.0
15–64 years	%	60.8	66.8	63.0	67.4	63.4	60.5	59.0
65 years and over	%	4.0	8.1	8.3	13.2	18.7	22.9	25.0
85 years and over	%	0.1	0.4	0.5	1.6	2.4	4.9	5.8
Sex ratio(c)	ratio	110.1	100.4	101.1	98.8	99.4	100.3	101.0
Median age	years	22.5	30.7	27.5	36.7	39.5	42.4	43.8
Proportion living in capital cities(d)	%	36.8	51.2	63.5	63.6	64.7	67.1	na

na not available

(a) Preliminary estimated resident population at 30 June.

(b) Series B population projections.

(c) Males per 100 females.

(d) Includes Australian Capital Territory.

Source: *Australian Historical Population Statistics (3105.0.65.001)*; *Population Projections, Australia, 2006 to 2101 (3222.0)*.

Geographic distribution of the population

Most of Australia's population is concentrated in two widely separated coastal regions – the south-east and east, and the south-west. Of the two regions, the south-east and east is by far the largest in area and population. The population within these regions is concentrated in urban centres, particularly the capital cities.

Australia's population density at June 2010 was 2.9 people per square kilometre (sq km) compared with 2.6 people per sq km in 2005. Of the states and territories, the Australian Capital Territory had the highest population

density at June 2010 with 150 people per sq km (reflecting the fact that the city of Canberra constitutes a large proportion of the Australian Capital Territory's area) followed by Victoria with 24 people per sq km. The Northern Territory had a population density of only 0.2 people per sq km, the lowest of all the states and territories (reflecting more recent settlement, distance from areas settled earlier, large arid areas and, perhaps, climate).

Population density at June 2010 was highest in the city centres, particularly in the Sydney Statistical Division where the most densely populated Statistical Local Area (SLA) in Australia was located. This was Sydney (C) – East (with

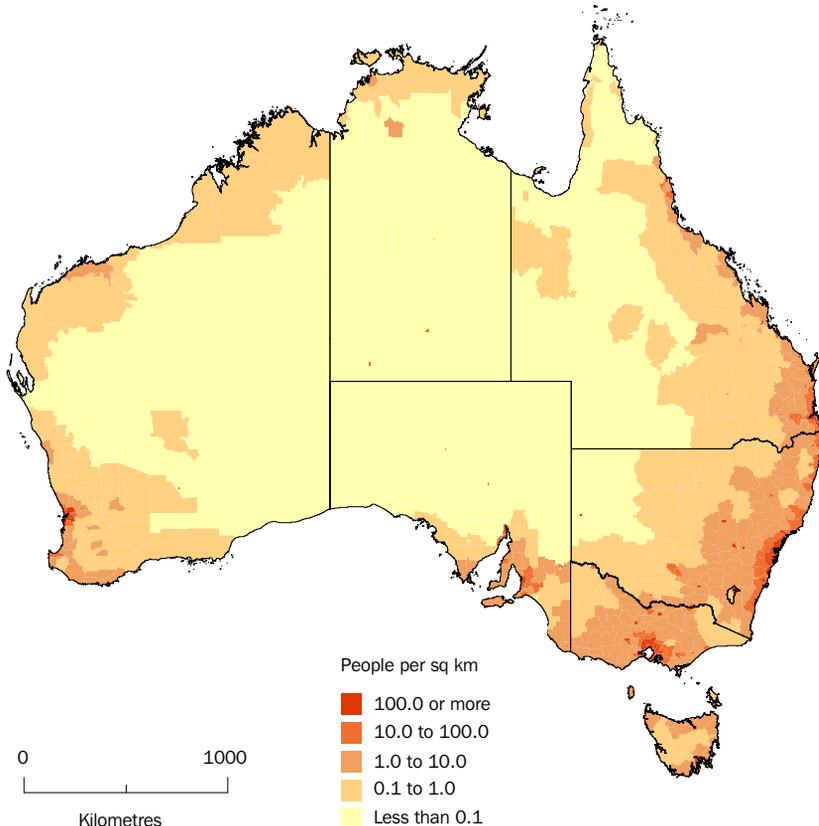
8,800 people per sq km). The neighbouring Sydney (C) – West (7,900) and Waverley (A) (7,500), which is located just east of the Sydney (C) LGA and contains the beach-side suburbs of Bronte and Bondi, had the third and fourth highest population densities in Australia. The most densely populated SLA in Victoria was Melbourne (C) – Inner with 8,000 people per sq km, making it the second most densely populated SLA in the country. Port Phillip (C) – St Kilda, which is on the shores of the bay just south of the city centre, with 6,400 people per sq km, North Sydney (A), with 6,200 people per sq km, and Sydney (C) – Inner, with 6,100 people per sq km, complete the list of Australian SLAs that had more than 6,000 people per sq km at June 2010. At the other extreme, there were almost 250 SLAs in Australia with less than 1 person per sq km, close to one-third of which were located in Western

Australia. The density of Australia’s population at June 2010 is shown in map 7.14.

Regional population change

At June 2010, capital city Statistical Divisions (SDs) were home to 14.3 million people, or around two-thirds (64%) of Australia’s population. The capital city SD of Melbourne experienced the largest increase in population of capital cities between 2005 and 2010, followed by Sydney and Brisbane. However, in terms of percentage growth, Darwin was the fastest growing capital city between 2005 and 2010, with an average annual growth rate of 2.8% per year. Perth experienced the next highest average annual growth rate over this period (2.7%). Table 7.15 illustrates the changes in population of Australia’s major regions over the five-year period 2005–10.

7.14 POPULATION DENSITY—June 2010



Source: *Regional Population Growth, Australia* (3218.0).

Generally, the largest growth outside capital city SDs occurred in Australia's coastal regions. Of these regions, the largest increase in population between 2005 and 2010 occurred in the Statistical District of Gold Coast – Tweed, up by an average 16,900 people per year (or 3.1% per year). Hervey

Bay recorded the fastest rate of growth over the same period, with an average growth rate of 4.7% per year. This growth rate was also faster than any capital city. Mandurah and Bunbury, south of Perth, also had average annual growth rates above 4.0% during the same period.

7.15 ESTIMATED RESIDENT POPULATION, By major regions(a)

	June 2005	June 2010	Change 2005–10	
	no.	no.	no.	%(b)
CAPITAL CITY STATISTICAL DIVISION				
Sydney	4 245 045	4 575 532	330 487	1.5
Melbourne	3 680 609	4 077 036	396 427	2.1
Brisbane	1 822 074	2 043 185	221 111	2.3
Adelaide	1 134 513	1 203 186	68 673	1.2
Perth	1 485 823	1 696 065	210 242	2.7
Greater Hobart	203 467	214 705	11 238	1.1
Darwin	111 258	127 532	16 274	2.8
Canberra	329 865	358 222	28 357	1.7
STATISTICAL DISTRICT				
Newcastle (NSW)	512 658	546 788	34 130	1.3
Wollongong (NSW)	276 171	292 190	16 019	1.1
Nowra-Bomaderry (NSW)	32 013	34 479	2 466	1.5
Lismore (NSW)	31 099	32 494	1 395	0.9
Coffs Harbour (NSW)	49 170	53 401	4 231	1.7
Port Macquarie (NSW)	40 998	44 313	3 315	1.6
Tamworth (NSW)	43 696	47 595	3 899	1.7
Dubbo (NSW)	35 617	38 037	2 420	1.3
Wagga Wagga (NSW)	54 019	58 610	4 591	1.6
Bathurst (NSW)	31 758	34 303	2 545	1.6
Orange (NSW)	36 970	39 329	2 359	1.2
Albury-Wodonga (NSW/Vic.)	99 493	106 052	6 559	1.3
Geelong (Vic.)	165 666	178 650	12 984	1.5
Warrnambool (Vic.)	31 053	33 922	2 869	1.8
Ballarat (Vic.)	87 079	96 097	9 018	2.0
Bendigo (Vic.)	83 325	91 713	8 388	1.9
Shepparton (Vic.)	45 822	49 859	4 037	1.7
Latrobe Valley (Vic.)	75 337	81 001	5 664	1.5
Mildura (Vic.)	46 841	50 522	3 681	1.5
Sunshine Coast (Qld)	217 491	251 081	33 590	2.9
Bundaberg (Qld)	61 680	69 036	7 356	2.3
Hervey Bay (Qld)	48 260	60 807	12 547	4.7
Rockhampton (Qld)	71 608	77 878	6 270	1.7
Gladstone (Qld)	44 163	51 158	6 995	3.0
Mackay (Qld)	74 220	85 700	11 480	2.9
Townsville (Qld)	148 454	172 316	23 862	3.0
Cairns (Qld)	126 419	150 920	24 501	3.6
Toowoomba (Qld)	119 327	131 258	11 931	1.9
Gold Coast-Tweed (Qld/NSW)	507 212	591 473	84 261	3.1
Mandurah (WA)	69 407	85 814	16 407	4.3
Bunbury (WA)	55 605	68 248	12 643	4.2
Kalgoorlie/Boulder (WA)	29 835	32 390	2 555	1.7
Geraldton (WA)	32 761	36 958	4 197	2.4
Launceston (Tas.)	102 700	106 153	3 453	0.7
Burnie-Devonport (Tas.)	79 366	82 567	3 201	0.8
Canberra-Queanbeyan (ACT/NSW)	376 243	410 419	34 176	1.8

(a) Based on 2010 Australian Standard Geographical Classification boundaries.

(b) Average annual growth rate.

Source: *Regional Population Growth, Australia (3218.0)*.

What's new?

The ASGS

From July 2011, the ABS is replacing the nation's official statistical geography, the Australian Standard Geographical Classification (ASGC), with the new Australian Statistical Geography Standard (ASGS). The ASGS defines more stable, consistent and meaningful units than the ASGC and will become the essential reference for understanding and interpreting the geographical dimension of ABS statistics. For more information about the ASGS, including maps, labels and codes, see *Australian Statistical Geography Standard (ASGS): Volume 1 – Main Structure and Greater Capital City Statistical Areas, July 2011* (1270.0.55.001).

Population estimates and the implementation of the Australian Statistical Geography Standard (ASGS)

An ABS Information Paper titled *Population Estimates under Australia's New Statistical Geography* (3219.0.55.001) was released on 26 August 2011. The purposes of the paper are to:

- provide a broad overview of the ASGS
- inform users of the availability of population estimates under the new geography
- inform users of the historical estimates that will be prepared
- provide key dates for the release of these estimates under the ASGS, and
- outline the methodology that will be used to prepare population estimates under the ASGS.

How will birth and death statistics be affected by the implementation of the Australian Statistical Geography Standard (ASGS)?

Changing statistical geography will result in *Births, Australia* (3301.0) and *Deaths, Australia* (3302.0) releasing sub-state data on Statistical Area Level 2 (roughly equivalent to SLAs). As the ASGS will be a more stable and more flexible geography, there will be minimal revisions required to time series data during an intercensal period. The first release of birth and death data on ASGS will be in October/November 2012 for the 2011 reference year and will include a concorded SA2 time series going back 5 or 10 years (dependent on data quality). Birth and death statistics will continue to be released on Local Government Areas (LGAs) in line with official gazetted boundaries.

Information about the changes to the geography are available in appendices attached to the 2010 publications of *Births, Australia* (3301.0) and *Deaths, Australia* (3302.0), released in October and November 2011 respectively. Resources to support the transition to the new geography are located in the *ABS Geography portal*.

Regional internal migration estimates

An ABS Discussion Paper titled *Assessment of Methods for Developing Estimates for Regional Internal Migration* (3405.0.55.001) was released in November 2011. The purpose of the paper is to summarise a method to convert postcode-based migration data to ASGC boundaries using a population-weighted concordance, discuss challenges with this approach and identify potential solutions to these challenges. Users and stakeholders have the opportunity to provide feedback and to ensure that issues associated with producing experimental internal migration estimates are adequately considered before the ABS produces a regular series of regional internal migration estimates.

Interstate migration

A key contributor to change in the distribution of Australia's population is internal migration. During 2009–10, 331,400 people moved from one state or territory to another. This is an 8% drop from the same period one year earlier (359,900).

In 2009–10, Victoria, Queensland, Western Australia and Tasmania all recorded net interstate migration gains, while New South Wales, South Australia, Northern Territory and the Australian Capital Territory had net interstate migration losses. Queensland has recorded positive net interstate migration for more than 30 years; in contrast, New South Wales has had net losses every year since 1978–79. However, as table 7.16 illustrates, any losses due to net interstate migration in 2009–10 were offset by growth due to natural increase (births minus deaths) and net overseas migration.

Queensland was the most popular destination for Australians moving interstate, receiving the largest number of arrivals during 2009–10 (86,400 persons). New South Wales and Victoria followed with 83,000 and 63,100 arrivals respectively.

The most common moves were between the three most populous states: New South Wales, Queensland and Victoria. The largest interstate flow was from New South Wales to Queensland (42,000 persons), while the counter flow from Queensland to New South Wales was the second largest (35,400 persons), followed by the flow from New South Wales to Victoria (22,700 persons).

There were also significant movements between bordering states and territories. This is especially apparent between the Australian Capital Territory and surrounding New South Wales, with 10,100 arrivals to the Australian Capital Territory from New South Wales and 9,900 departing from the Australian Capital Territory to New South Wales in 2009–10.

The largest net flow in 2009–10 was between New South Wales and Queensland, with Queensland gaining a net 6,700 people from New South Wales, and the second largest net movement was between New South Wales and Victoria with Victoria gaining a net 2,600 from New South Wales.

Aboriginal and Torres Strait Islander population

The final estimated resident Aboriginal and Torres Strait Islander population at 30 June 2006 was 517,000 people or 2.5% of the total Australian population. Of the Aboriginal and Torres Strait Islander population, 90% were Aboriginal people, 6% were Torres Strait Islander people and the remaining 4% were both Aboriginal and Torres Strait Islander people.

Of the total Aboriginal and Torres Strait Islander population at 30 June 2006, 152,700 (30%) lived in New South Wales, 144,900 (28%) in Queensland, 71,000 (14%) in Western Australia and 64,000 (12%) in the Northern Territory. The Northern Territory had the largest proportion of its population who were Aboriginal and Torres Strait Islander people (30%), compared with 4% or less for all other states and the Australian Capital Territory.

The Aboriginal and Torres Strait Islander population is a relatively young population with a median age of 21 years compared with 37 years for the non-Indigenous population. In 2006, 38% of Aboriginal and Torres Strait Islander people were aged under 15 years compared with 19% of non-Indigenous people. People aged 65 years and over comprised 3% of the Aboriginal and Torres Strait Islander population and 13% of the non-Indigenous population. The age structure of the Aboriginal and Torres Strait Islander population reflects higher rates of fertility and deaths occurring at younger ages. In 2010, the

7.16 COMPONENTS OF POPULATION GROWTH RATE—2009–10

	NSW %	Vic. %	Qld %	SA %	WA %	Tas. %	NT %	ACT %
Natural increase	0.70	0.67	0.90	0.47	0.84	0.44	1.35	1.04
Net overseas migration	0.93	1.11	0.90	0.95	1.26	0.36	0.57	0.76
Net interstate migration	-0.15	0.05	0.22	-0.18	0.09	0.06	-0.37	-0.02
Total population growth	1.48	1.82	2.01	1.24	2.19	0.86	1.55	1.78

Source: *Migration, Australia* (3412.0).

total fertility rate for Aboriginal and Torres Strait Islander women (2.57 babies per woman) was higher than that for all women (1.89 babies per woman). In the period 2005–2007, life expectancy at birth was estimated to be 67.2 years and 72.9 years for Aboriginal and Torres Strait Islander males and females respectively. This is well below the estimates of 78.5 years and 82.4 years for total males and females respectively for the same period.

For further information, see chapter 3, *Aboriginal and Torres Strait Islander Peoples*.

Births

In 2010, there were 297,900 births registered in Australia. This was 2,200 (0.7%) more births than the number registered during 2009 and the highest ever recorded in a calendar year, exceeding the previous record of 296,600 births registered in 2008. In 2010, 34% of births were ex-nuptial births, that is, births to parents who were not legally married at the time of the birth.

Until recently, Australia had been experiencing the second of two long periods of fertility decline since 1901 – from 1907 to 1934, and from 1962 to 1980 (excluding a plateau from 1966 to 1971). The period 1981 to 2003 has, while experiencing minor fluctuations, continued the overall decline, although at a slower rate. The total fertility rate reached a low of 1.73 babies per woman in 2001 and has increased since then, to a high of 1.96 babies per woman in 2008. Over the past two years, the total fertility rate has declined slightly

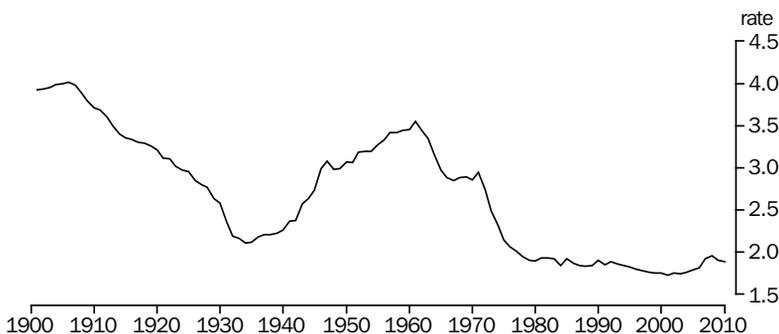
from the 2008 high, reaching 1.89 babies per woman in 2010.

During the first decade of the 20th century, the total fertility rate remained at around 3.7 to 4.0 babies per woman, then consistently declined over the next two and a half decades. By 1934, during the Depression, the total fertility rate had fallen to 2.1 babies per woman. It then increased during the second half of the 1930s, as women who had deferred child-bearing in the Depression years began to have children. Fertility increased through World War II and the 1950s and reached a new peak in 1961 when the total fertility rate reached 3.5 babies per woman (graph 7.17).

What is replacement level fertility?

Replacement level fertility is the number of babies a female would need to have over her reproductive life to replace both herself and her partner. Given the current mortality rates for women aged up to 49 years in Australia, replacement fertility is estimated to be 2.1 babies per woman. Since 1976, the total fertility rate for Australia has been below this replacement level. Even if female mortality declined to zero for women until the end of their reproductive lives, the replacement level would still be 2.05 (1.05 male and 1.0 female babies) – higher than the total fertility rate of 1.89 babies per woman for 2010.

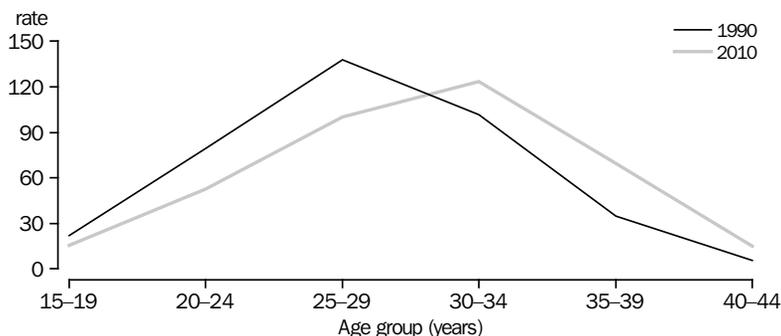
7.17 TOTAL FERTILITY RATE(a), Australia



(a) Births per woman.

Source: *Births, Australia (3301.0)*.

7.18 AGE-SPECIFIC FERTILITY RATES(a)



(a) Births per 1,000 women.

Source: *Births, Australia (3301.0)*.

After 1961, the total fertility rate fell rapidly to 2.9 babies per woman in 1966. This fall can be attributed to changing social attitudes, in particular a change in people's perception of desired family size, facilitated to an extent by the oral contraceptive pill becoming available. During the 1970s, the total fertility rate dropped further, falling to replacement level (2.1 babies per woman) in 1976, below which it has since remained. This fall was more marked than the fall in the early 1960s and has been linked to increasing participation of women in education and the labour force, changing attitudes to family size, lifestyle choices and greater access to contraceptive measures and abortion.

In the late 1970s, the total fertility rate began to decline at a slower rate, continuing through the 1980s and 1990s, until reaching a low of 1.73 babies per woman in 2001. From 2002, the total fertility rate increased, reaching 1.96 babies per woman in 2008, the highest recorded since 1977. Australia's total fertility rate has subsequently decreased slightly to 1.89 babies per woman in 2010.

Despite the recent increase in fertility rates, Australian women are continuing to delay child-bearing. The median age at child-bearing increased from 28.3 years in 1990 to 29.8 years in 2000, then to 30.7 years in 2010. Since 2003, the median age at child-bearing has experienced

7.19 SELECTED SUMMARY MEASURES OF FERTILITY

Year	Registered	Median age	Total fertility	Ex-nuptial
	births	of mother(a)	rate(b)	births(c)
	'000	years	rate	%
2000	249.6	29.8	1.76	29.2
2001	246.4	30.0	1.73	30.7
2002	251.0	30.2	1.76	31.3
2003	251.2	30.5	1.75	31.6
2004	254.3	30.6	1.76	32.2
2005	259.8	30.7	1.79	32.2
2006	266.0	30.8	1.82	32.7
2007	285.2	30.7	1.92	33.3
2008	296.6	30.7	1.96	34.3
2009	295.7	30.6	1.90	34.5
2010	297.9	30.7	1.89	33.8

(a) Based on confinements.

(b) Births per woman.

(c) Births to mothers who were not in a legal marriage at the time of birth as a proportion of total births.

Source: *Births, Australia (3301.0)*.

little variation, remaining between 30.5 and 30.8 years. Over the last 20 years, there has been a fall in the fertility rate of teenagers, from 22.1 babies per 1,000 teenage females in 1990 to 15.5 in 2010 (graph 7.18). Conversely, the fertility rate of women aged 40–44 years has almost tripled, from 5.5 babies per 1,000 women in 1990 to 14.8 in 2010. Fertility rates decreased slightly for all age groups under 35 years between 2009 and 2010, and increased for women aged over 35 years.

An alternative to the ‘snapshot’ measure provided by the total fertility rate is the total number of children ever born per woman. These data reveal a decline over time in the average number of children ever born by age of women. Completed fertility (the average number of births a cohort of females have borne) for women born in 1955

show an average of 2.2 births per woman. The ABS projections show that females born in 2010 would have an average of 1.8 births per woman, if current trends were to continue.

Table 7.19 provides summary measures of fertility for the period 2000 to 2010.

Deaths

In 2010, there were 143,500 deaths (73,500 males and 70,000 females) registered in Australia, an increase of approximately 2,700 deaths (or 1.9%) compared with the number of deaths registered in 2009 (140,800). Since the early 1990s, the number of deaths registered has increased by around 0.6% per year on average for males and 1.2% per

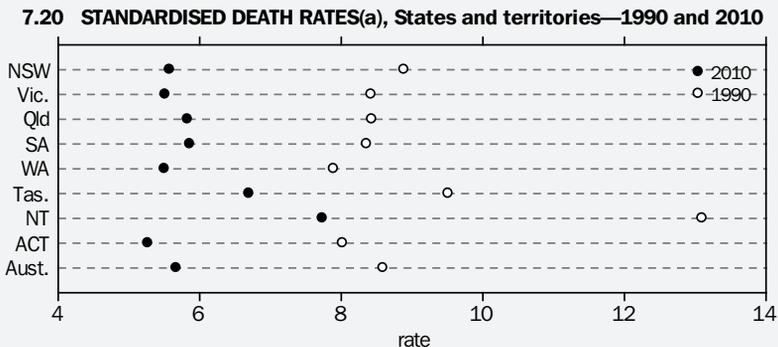
Declining death rates

Standardised death rates (SDR) enable the comparison of death rates between populations with different age structures by relating them to a standard population. The ABS standard populations relate to the years ending in 1 (e.g. 2001). The current standard population is all persons in the Australian population at 30 June 2001.

Over the past 20 years, SDRs have declined for both males and females. The SDR declined to 5.7 deaths per 1,000 standard population in 2010, down from 8.6 in 1990 (graph 7.20).

Northern Territory showed the largest decline in SDRs, from 13.1 deaths per 1,000 standard population in 1990 to 7.7 in 2010. During the same period, Western Australia experienced the smallest decline in SDRs, from 7.9 in 1990 to 5.5 in 2010.

While male mortality rates remain higher than female mortality rates, the difference has narrowed in the past 20 years.



(a) Deaths per 1,000 standard population. Standardised death rates are calculated using the total persons in the 2001 Australian population as the standard population.

Source: *Deaths, Australia* (3302.0).

year for females, with year to year fluctuations. The steady increase in the number of deaths over time reflects the increasing size of the population and, in particular, the increasing number of older people. With the continued ageing of the population, the number of deaths is projected to continue to increase throughout the remainder of the century (see Series B, *Population Projections, Australia, 2006 to 2101* (3222.0)).

Despite the ageing of the population over the last 20 years, death rates have continued to decline over the long term. The crude death rate declined from 7.0 deaths per 1,000 population in 1990 to 6.7 deaths per 1,000 population in 2008, and has declined since then, to 6.4 deaths per 1,000 population in 2010. Given the ageing of Australia's population, the overall decline in the crude death rate indicates a considerable decline in age-specific death rates over the period.

The standardised death rate (SDR), which eliminates the effect of changes in the age structure of a population over time, was 5.7 deaths per 1,000 standard population in 2010, down by 34% from 1990 (8.6). The rate for 2010 is the lowest on record.

Life expectancy

Life expectancy is the average number of additional years a person of a given age and sex might expect to live if the age-specific death rates of the given period were to continue throughout his or her remaining lifetime.

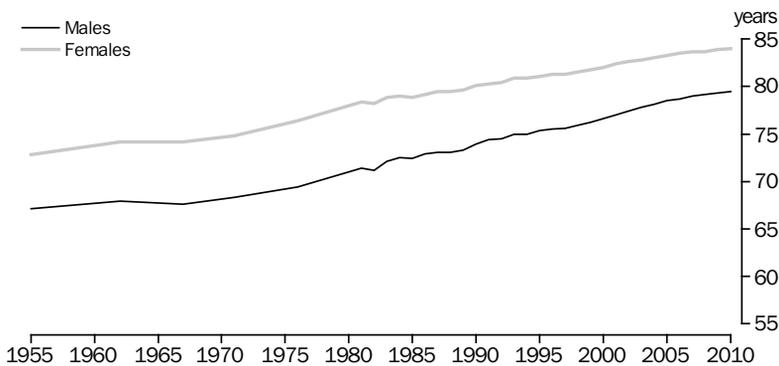
Over the past century, male life expectancy at birth has increased by 24 years, from 55.2 years

in 1901–1910 to 79.5 years in 2008–2010 (graph 7.21). Similarly, female life expectancy at birth has increased by 25 years, from 58.8 years to 84.0 years. The increase in life expectancy at birth reflects declining death rates at all ages.

Improvements in living conditions in the early 20th century, such as better water supplies, sewerage systems, food quality and health education resulted in an overall decline in mortality. The continuing reduction in mortality in the latter half of last century is attributed to improving social conditions and advances in medical technology such as mass immunisation and antibiotics. The past two decades in particular have seen further increases in life expectancy. These increases are due in part, but not limited to, lower infant mortality and fewer deaths among older men from heart disease. The reduction in the number of deaths from heart disease has been related to medical advances and behavioural changes such as improvements in diet and a reduction in smoking.

During the 20th century, life expectancy of new-born girls was consistently higher than that of new-born boys, with the difference peaking at about seven years in the 1970s and early 1980s. The change in the difference in recent decades is largely due to the decline in heart disease, stroke and respiratory disease mortality among women. In recent years, the gap in life expectancy between new-born males and females narrowed to around five years. This can be attributed to the reductions in death rates of males aged 45 years and over, and particularly to the reduction in heart disease deaths among males.

7.21 LIFE EXPECTANCY AT BIRTH



Source: *Australian Historical Population Statistics* (3105.0.65.001); *Deaths, Australia* (3302.0).

The increase in life expectancy for older persons has implications for retirement planning and income policies. Life expectancy of 65-year old males increased from 15 years in 1990–1992 to 19 years in 2008–2010, while life expectancy of 65-year old females increased from 19 years to 22 years during the same period.

A life table is a statistical model that is constructed from the death rates of a population at different ages. It is frequently used to express death in terms of the probability of dying. In its simplest form, a life table is generated from age-specific death rates and the resulting values are used to measure mortality, survivorship and life expectancy.

7.22 EXPECTANCY OF LIFE AT SPECIFIC AGES(a)

At exact age (years)	Males years	Females years
0	79.5	84.0
10	70.0	74.4
20	60.2	64.5
30	50.6	54.7
40	41.0	44.9
50	31.7	35.4
60	23.0	26.2
70	15.0	17.6
80	8.5	10.1
90	4.2	4.8
100	2.5	2.7

(a) Calculated using data for the three years 2008 to 2010.

Source: *Deaths, Australia* (3302.0).

Table 7.22 shows the expectations of additional years of life at specific ages for Australian males and females using deaths for the period 2008 to 2010.

Table 7.23 provides selected summary measures of mortality for the period 2000 to 2010.

International migration

Each year, Australia's population increases as a result of net overseas migration and natural increase (the number of births minus the number of deaths). Net overseas migration (NOM) is the net gain or loss of population through immigration to Australia and emigration from Australia. It is based on an international traveller's duration of stay being in or out of Australia for 12 months or more. In 2009–10, statistics on NOM showed that there were 446,800 arrivals and 248,400 departures, providing a net gain of 198,300 people to Australia's population (table 7.24).

Until relatively recently, Australia's population growth has come predominantly from natural increase. During the majority of the last 20 years, the contribution of NOM to population growth was less than half, whereas from 2007 to 2010, it was the major contributor (graph 7.25), adding 62%, 65%, 66% and 57% respectively to Australia's total population growth for each year. However, this increase is partly due to improvements in

7.23 SELECTED SUMMARY MEASURES OF MORTALITY

Year	LIFE EXPECTANCY AT BIRTH(c)					
	Registered deaths '000	Crude death rate(a)	Infant mortality rate(b)			
				Males years	Females years	
2000	128.3	6.7	5.2	76.6	82.0	
2001	128.5	6.6	5.3	77.0	82.4	
2002	133.7	6.8	5.0	77.4	82.6	
2003	132.3	6.6	4.8	77.8	82.8	
2004	132.5	6.6	4.7	78.1	83.0	
2005	130.7	6.4	5.0	78.5	83.3	
2006	133.7	6.5	4.7	78.7	83.5	
2007	137.9	6.5	4.2	79.0	83.7	
2008	143.9	6.7	4.1	79.2	83.7	
2009	140.8	6.4	4.3	79.3	83.9	
2010	143.5	6.4	4.1	79.5	84.0	

(a) Deaths per 1,000 population.

(b) Infant deaths (under one year) per 1,000 live births.

(c) Data are based on three-year averages, with the year shown being the last year of the three-year period.

Source: *Australian Historical Population Statistics* (3105.0.65.001); *Deaths, Australia* (3302.0).

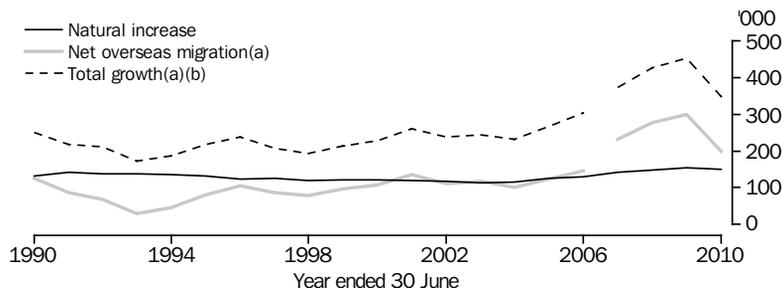
7.24 NET OVERSEAS MIGRATION COMPONENTS

	2006–07	2007–08	2008–09	2009–10(a)
	'000	'000	'000	'000
NOM arrivals	437.5	501.3	519.8	446.8
NOM departures	204.7	224.0	219.9	248.4
NOM	232.8	277.3	299.9	198.3

(a) Estimates for 2009–10 are preliminary.

Source: *Australian Demographic Statistics (3101.0)*.

7.25 GROWTH AND COMPONENTS OF POPULATION CHANGE, Australia



(a) NOM estimates have been calculated using a range of methods over the period, and include a break in series from September quarter 2006 onwards. Estimates for 2009–10 are preliminary.
(b) Up to 30 June 2006 estimates include intercensal discrepancy.

Source: *Migration, Australia (3412.0)*.

methodology, which better measure the actual travel behaviour of migrants (both immigrants and emigrants), but it also reflects the recent increases of temporary migrants arriving in Australia.

Graph 7.26 shows that the main effect of NOM on the age structure of Australia's population is that it results in a larger proportion of persons of early working age (15–34 years). In 2009–10, persons aged 15–34 years comprised 68% of the net contribution to NOM compared with 28% of Australia's total population. Persons aged 0–14 years comprised 15% of the net contribution to NOM and 19% of Australia's population, and persons aged 65 years and over comprised just 0.4% of the net contribution to NOM but 13% of Australia's population.

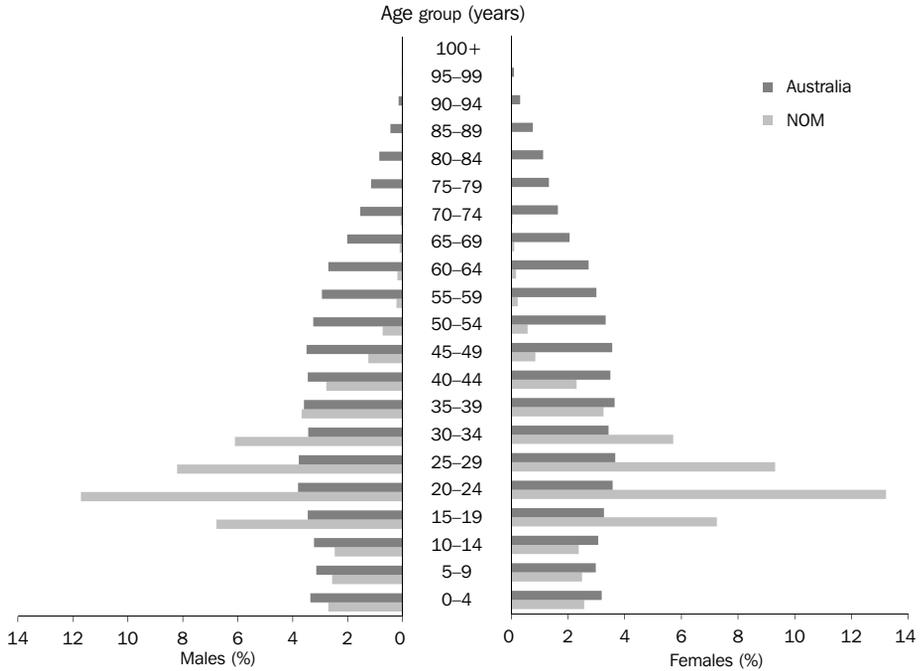
During 2008–09, travellers who contributed to NOM were from virtually every country in the world. Migrants born in India added the most to Australia's population in 2008–09, with a net contribution to NOM of 59,400 persons (graph 7.27). This was followed by migrants born in China (excludes SARs and Taiwan) (33,300), the United Kingdom (29,300) and New Zealand

(28,000). Historically, the United Kingdom and New Zealand have ranked as the major source countries to Australia through net overseas migration each year. However, since 2006–07, India has been the largest source country.

Country of birth

Australia's population has increased each year since the end of World War II due to a combination of both high post-war fertility and high levels of migration. In 1901, 23% of Australia's population was born overseas. By 1947, the overseas-born population proportion had declined to 10%. The creation of a national government immigration portfolio in 1945 accompanied a gradual increase in overseas-born Australians reaching a proportion of 22% by 1977. During the 1980s, 1990s and the early 2000s, the overseas-born population fluctuated between 21% and 23%. At 30 June 2010, the number of overseas-born Australians was 6.0 million, representing just over one-quarter (27%) of the total population (graph 7.28). In 2010, the sex ratio of the overseas-born population was the same as the Australian-born population

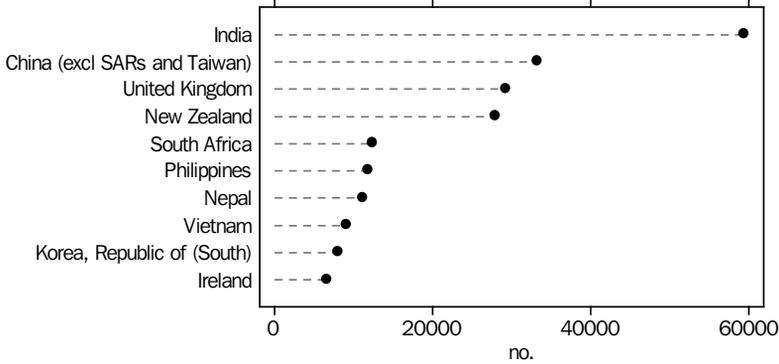
7.26 AUSTRALIAN AND NET OVERSEAS MIGRATION POPULATION STRUCTURES, Age and sex—2009–10(a)



(a) Estimates for 2009–10 are preliminary.

Source: *Migration, Australia* (3412.0).

7.27 NET OVERSEAS MIGRATION, Top 10 overseas countries of birth—2008–09



Source: ABS data available on request, *Migration, Australia* (3412.0).

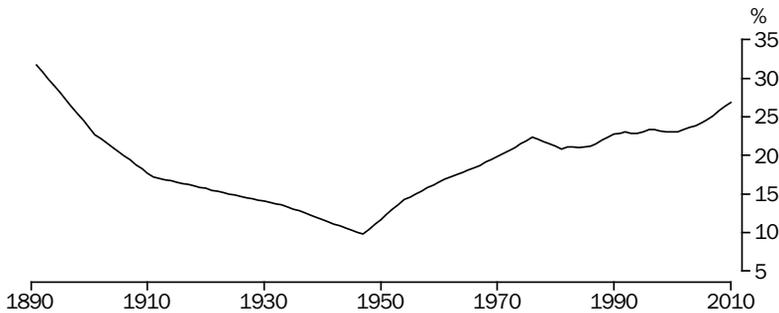
(99 males per 100 females). The median age of all Australian residents born overseas was 44.7 years in 2010, compared with 33.4 years for those born in Australia.

Since the 1980s, the patterns of immigration to Australia have changed and the diversity of the population has increased. Of the overseas-born population, the United Kingdom remains the largest source country representing 20% of

all Australian migrants in 2010, despite having fallen from 27% in 1996. Some of the older migrant streams, such as people born in Italy, have been declining in absolute numbers as their populations age and the number of deaths exceed net gains from more recent migration.

The New Zealand-born population living in Australia was the second largest overseas-born group making up 9% of the overseas-born

7.28 AUSTRALIA'S POPULATION BORN OVERSEAS(a)(b)



(a) Census years only until 1981. Post 1981 based on estimated resident population at 30 June.
 (b) Estimates for 2009–10 are preliminary.

Source: *Migration, Australia (3412.0)*.

7.29 TOP 10 COUNTRIES OF BIRTH(a)

	1954(b)	1971(b)	1996(c)	2001(c)	2006(c)	2010(c)	2010 sex ratio(d)	2010 median age years
	'000	'000	'000	'000	'000	'000	ratio	
United Kingdom(e)	664.2	1 088.2	1 164.1	1 126.9	1 141.0	1 192.9	103.4	53.5
New Zealand	43.4	80.5	315.1	394.1	445.1	544.2	105.5	39.2
China (excludes SARs and Taiwan)	10.3	17.6	121.2	157.0	259.2	379.8	84.2	33.5
India	12.0	29.2	84.8	103.6	180.1	340.6	140.8	30.3
Italy	119.9	289.5	259.1	238.5	227.3	216.3	106.8	67.5
Vietnam	na	na	164.2	169.5	185.5	210.8	88.3	42.1
Philippines	0.2	2.6	102.7	112.2	140.0	177.4	58.9	39.5
South Africa	6.0	12.7	61.8	87.0	120.3	155.7	99.5	38.6
Malaysia	2.3	14.9	83.0	87.2	107.1	135.6	87.0	36.9
Germany	65.4	110.8	120.8	117.5	124.4	128.6	92.2	61.3
Total overseas-born	1 286.5	2 579.3	4 258.6	4 482.1	5 090.1	5 994.0	98.8	44.7
Australian-born	7 700.1	10 176.3	14 052.1	14 931.2	15 607.8	16 334.9	99.3	33.4
Total population(f)	8 986.5	12 755.6	18 310.7	19 413.2	20 697.9	22 328.9	99.2	36.9

na not available

(a) Top 10 countries of birth based on population at 30 June 2010.

(b) Census counts.

(c) Estimated resident population at 30 June.

(d) Males per 100 females.

(e) Includes Ireland in 1954 and 1971.

(f) Includes country of birth 'Not stated' and 'At sea'.

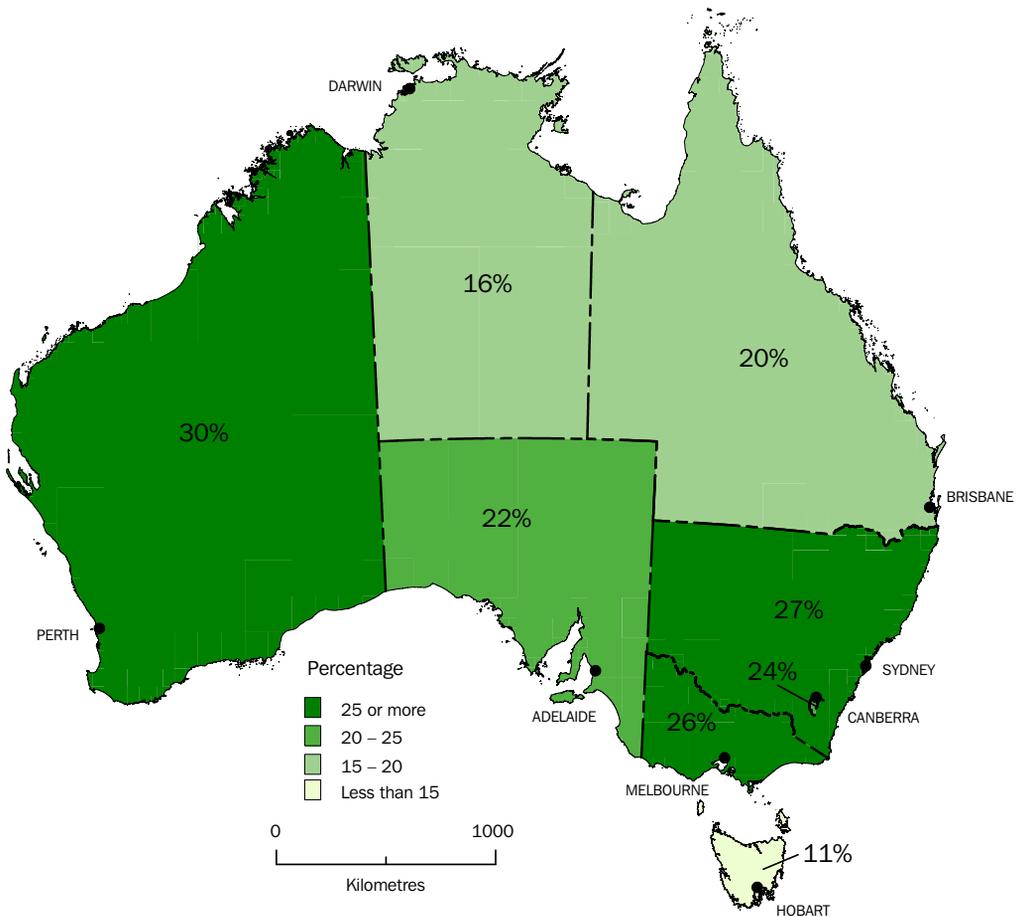
Source: *Migration, Australia (3412.0)*; data from *Census of Population and Housing*.

population in 2010 compared with 7% in 1996. Some other migrant streams that have increased their proportion over recent decades include those born in China, India, the Philippines, South Africa and Malaysia (table 7.29). For example, the China-born population trebled from 121,200 people in 1996 to 379,800 people in 2010 (making up 6% of the overseas-born population). The India-born population increased its share from 2% in 1996 (84,800 people) to 6% in 2010 (340,600 people).

Country of birth by state and territory

Australia's estimated resident population by country of birth at the state and territory level is only available for census years. Map 7.30 shows the total percentage of overseas-born residents at 30 June 2006 in each of the states and territories. At 30 June 2006, Western Australia recorded the highest proportion of overseas-born residents (30%) in their population, followed by New South Wales (30%) in their population, followed by New South Wales (27%) and Victoria (26%). Tasmania had the lowest proportion of overseas-born residents (11%), well below the Australian level of 25% recorded in 2006.

7.30 PERCENTAGE OF PEOPLE BORN OVERSEAS, Australia—2006



Source: *Migration, Australia* (3412.0).

Marriages, de facto relationships and divorces

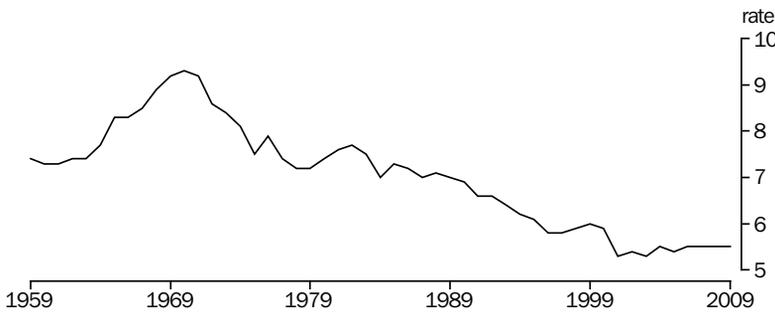
Marriages

Marriage rates in Australia have fluctuated since 1901, broadly in response to prevailing economic and social conditions and changing age structures over time. The crude marriage rate (the number of marriages registered in a calendar year per 1,000 population) has fallen in times of depression or recession (e.g. in the 1930s) and increased at other times such as during, and immediately after, the two world wars. Falls in the crude marriage rate since 1970 can be mainly attributed to changes in attitudes to marriage and living arrangements that have occurred since then.

There were 120,100 marriages registered in Australia in 2009, resulting in a crude marriage rate of 5.5 marriages per 1,000 population. The highest crude marriage rate recorded was 12.0 marriages per 1,000 population in 1942. Fluctuations in the crude marriage rate between 1959 and 2009 are shown in graph 7.31, which shows that crude marriage rates in Australia have remained reasonably steady over the last 4 years.

In 2009, the median age at marriage was 31.5 years for males and 29.2 years for females (table 7.33). Until recently, the median age at marriage increased gradually over time for both males and females. Between 2006 and 2008, the median age for males remained at 31.6 years while the median age for females was stable at 29.3 years between 2005 and 2008. In 2009, the median age of males marrying for the first time was 29.6 years, and

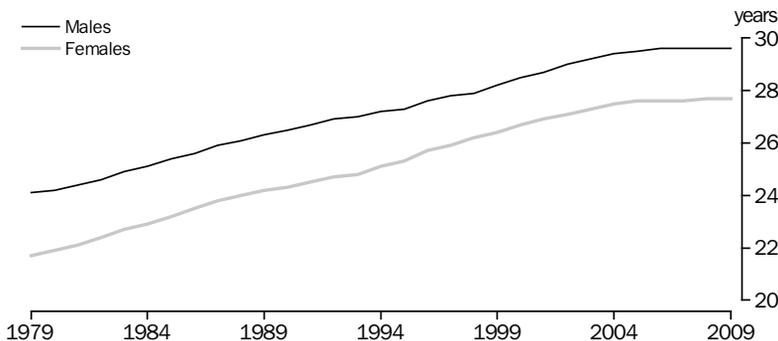
7.31 CRUDE MARRIAGE RATE(a)



(a) Marriages per 1,000 population.

Source: *Marriages, Australia* (3306.0.55.001); *Australian Historical Population Statistics* (3105.0.65.001).

7.32 MEDIAN AGE AT FIRST MARRIAGE



Source: *Marriages, Australia* (3306.0.55.001); *Australian Historical Population Statistics* (3105.0.65.001).

27.7 years for females. The gradual increase in the age profile of people marrying for the first time, as shown in graph 7.32, has stabilised in recent years with the male median age at first marriage unchanged since 2006 and the female median age unchanged since 2008. Part of this increase can be attributed to the increasing incidence of de facto relationships. Another factor is young people staying in education longer.

Data from the Registered Marriages Collection show that the majority of couples registering their marriage in 2009 lived together before marriage (77%). Marriage data for such couples were first collected in 1997. Since then, the proportion of couples living together prior to marriage decreased only once, in 2009. This decrease follows a larger than usual increase in the proportion of marriages where couples lived together prior to marriage between 2007 and 2008.

Widowed males who remarried in 2009 were the least likely to have lived together before marriage and divorced females were the most likely. Only 62% of widowed males and 65% of widowed females who remarried in 2009 lived together before marrying their partner, while the proportion of those divorced who lived together prior to remarriage was 80% for males and 81% for females.

Table 7.33 shows summary measures for marriages between 1999 and 2009.

De facto relationships

Between 2001 and 2006, the census count of people aged 15 years and over in de facto relationships rose by 25% from 951,500 to 1,193,400. This was lower than the increase between 1996 and 2001 (28%). In 2006, de facto partners represented 15% of all people living

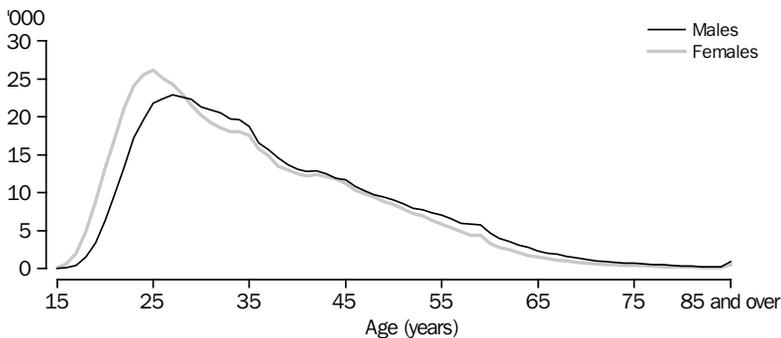
7.33 SELECTED SUMMARY MEASURES OF MARRIAGE

Year	Registered marriages '000	Crude marriage rate(a) rate	MEDIAN AGE AT MARRIAGE	
			Males years	Females years
1999	114.3	6.0	30.1	27.9
2000	113.4	5.9	30.3	28.3
2001	103.1	5.3	30.6	28.6
2002	105.4	5.4	31.0	28.9
2003	106.4	5.3	31.2	29.1
2004	111.0	5.5	31.5	29.2
2005	109.3	5.4	31.5	29.3
2006	114.2	5.5	31.6	29.3
2007	116.3	5.5	31.6	29.3
2008	118.8	5.5	31.6	29.3
2009	120.1	5.5	31.5	29.2

(a) Marriages per 1,000 population.

Source: *Marriages, Australia* (3306.0.55.001); *Australian Historical Population Statistics* (3105.0.65.001).

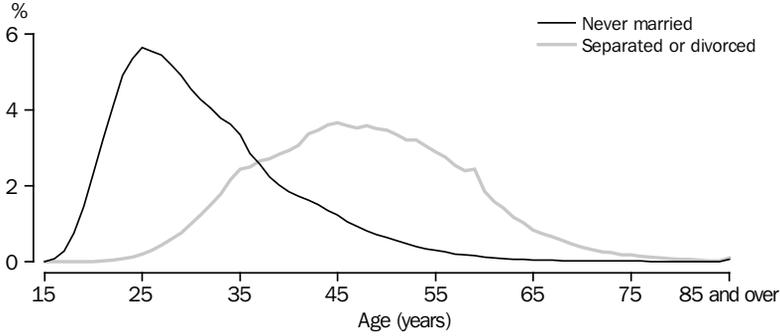
7.34 DE FACTO PARTNERS(a)—2006



(a) Opposite-sex couples only.

Source: ABS data available on request, 2006 Census of Population and Housing.

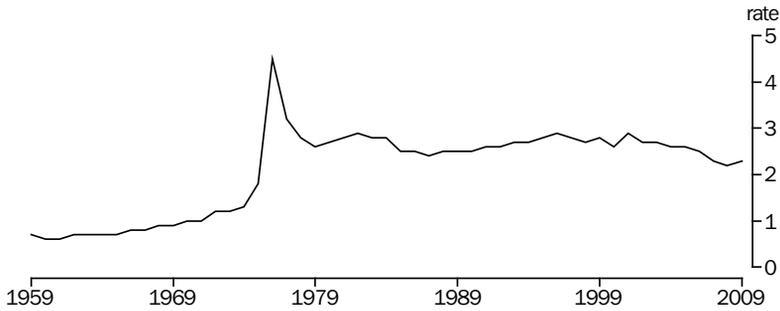
7.35 PERSONS IN DE FACTO RELATIONSHIPS(a)—2006



(a) Opposite-sex couples only.

Source: ABS data available on request, 2006 Census of Population and Housing.

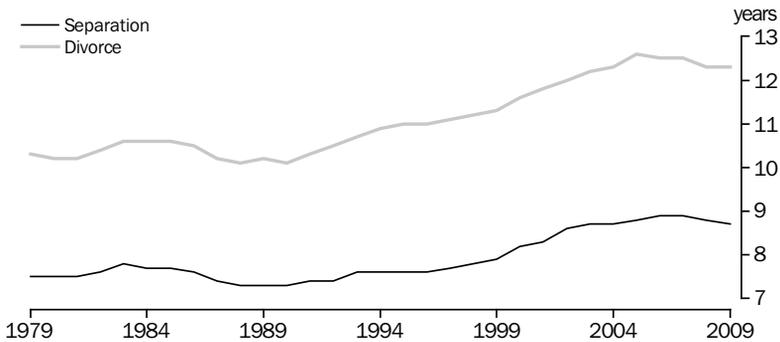
7.36 CRUDE DIVORCE RATE(a)



(a) Divorces per 1,000 population.

Source: Divorces, Australia (3307.0.55.001);
Australian Historical Population Statistics (3105.0.65.001).

7.37 MEDIAN DURATION OF MARRIAGE TO SEPARATION AND DIVORCE



Source: Divorces, Australia (3307.0.55.001);
Australian Historical Population Statistics (3105.0.65.001).

as socially married – that is, all those either in a registered marriage or a de facto relationship – up from 12% in 2001 and 10% in 1996. Total de facto partners in 2006 represented 7% of all persons aged 15 years and over, up from 6% in 2001 and 5% in 1996. These rises may be due to both increases in the number of de facto partners and in the willingness of people to identify themselves as living in de facto relationships. In 2006, the median age of males in de facto relationships was 35.3 years while the median age of females was 33.3 years. Graph 7.34 shows the age distribution of male and female partners in de facto relationships in 2006.

De facto partnering has arisen as an alternative living arrangement prior to or instead of marriage, and also following separation, divorce or widowhood. Of all people in de facto relationships in 2006, 70% had never been in a registered marriage and 27% were either separated or divorced. The likelihood of being never married was higher among people aged under 35 years, counterbalanced by higher proportions of separated and divorced de facto partners aged 35 years and over (graph 7.35).

Divorces

For most of the 20th century, there was a slow but steady rise in the crude divorce rate (the number of divorces in a calendar year per 1,000 population), increasing from 0.1 divorces per 1,000 population for each year between 1901 and 1910 to an average 0.8 divorces per 1,000 population between 1961 and 1970. The most

important factor involved in the higher divorce rates in the last quarter of the century was the introduction of the *Family Law Act 1975* (Cwlth) which came into operation on 5 January 1976. This legislation allows only one ground for divorce – irretrievable breakdown of the marriage, measured as the separation of the spouses for at least one year.

Following the implementation of this law, there was a large increase in the divorce rate in 1976. The rate then declined over the next three years as the backlog of applications was cleared. Since then, the crude divorce rate has remained between 2.2 and 2.9 divorces per 1,000 population (graph 7.36), with the 2008 crude divorce rate of 2.2 per 1,000 population being the lowest since 1975. In 2009, the crude divorce rate was 2.3 divorces per 1,000 population (table 7.38).

The median duration of marriage to both separation and divorce has increased since the late 1980s, revealing that marriages are lasting longer on average (graph 7.37). In 2009, the median duration of marriage to separation was 8.7 years compared with 7.9 years in 1999, while the median duration of marriage to divorce was 12.3 years compared with 11.3 years in 1999. The 2009 rates are slightly lower than the peaks of 8.9 years in 2006 for median duration of marriage to separation and of 12.6 years in 2005 for median duration of marriage to divorce.

In 2009, 6.2% of divorces involved separation within the first year of marriage, 33% within the first five years and a further 22% were separated

7.38 SELECTED SUMMARY MEASURES OF DIVORCE

Year	Divorces granted '000	Crude divorce rate(a) rate	MEDIAN AGE AT DIVORCE	
			Males years	Females years
1999	52.6	2.8	40.9	38.2
2000	49.9	2.6	41.4	38.6
2001	55.3	2.9	41.8	39.1
2002	54.0	2.7	42.2	39.5
2003	53.1	2.7	42.6	39.9
2004	52.7	2.6	43.0	40.3
2005	52.4	2.6	43.5	40.8
2006	51.4	2.5	43.9	41.1
2007	48.0	2.3	44.2	41.3
2008	47.2	2.2	44.1	41.4
2009	49.4	2.3	44.4	41.5

(a) Divorces per 1,000 population.

Source: *Divorces, Australia* (3307.0.55.001); *Australian Historical Population Statistics* (3105.0.65.001).

within five to nine years of marriage. Of divorcing couples in 2009, 17% were married less than five years, 24% between five and nine years and 59% were married for 10 years or more. Around 17% of divorces occurred to couples who had been married for 25 years or more.

Table 7.38 shows summary measures for divorces in the period 1999 to 2009.

Households and families

Households

Australian households have changed considerably in number, size and composition over the last 95 years (graph 7.39). During this period, the Census number of private households increased from 894,400 in 1911 to 7.6 million (occupied private dwellings) in 2006, whereas the average number of persons per household declined from 4.5 in 1911 to 2.6 in 2006. Much of this decline can be attributed to reductions in completed family size and the increase in one person and two person households.

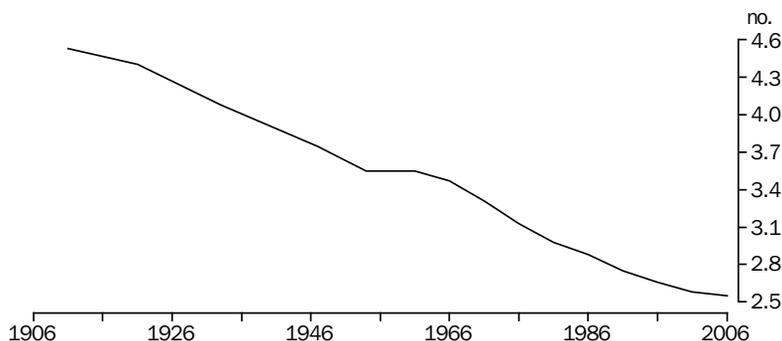
Average household size is projected to continue decreasing to between 2.4 and 2.5 people per household by 2031. It should be noted that the projected household sizes in graph 7.40 and other household data presented here for the years 2006 to 2031 are based on ABS Household and Family Projections Series II, derived from the 2006 estimated resident population data in conjunction with the 2006 living arrangement proportions. They therefore differ from the 2006 Census counts of households and families.

There has been considerable growth in one and two person households over the last three decades (graph 7.41). The proportion of one person households increased from 16% of households in the 1976 Census to 24% in the 2006 Census. The proportion of two person households also increased from 28% of households in 1976 to 34% in 2006. The major decline during this period occurred in the number and proportion of households with five or more persons. The number of one person households has grown largely as a result of population ageing combined with longer life expectancy. Population ageing, increased numbers of couple families without children and an increase in the number of one parent families also contributed to the increase in the number of two person households.

Projections show that the number of households in Australia will grow to 11.6 million by 2031. One person households are projected to increase to 3.2 million (28% of all households) in 2031. This represents the fastest projected increase of all household types over the period 2006 to 2031. The ageing of the population, coupled with the longer life expectancy of women over men and the delay of marriage, are some of the factors contributing to the projected growth in one person households.

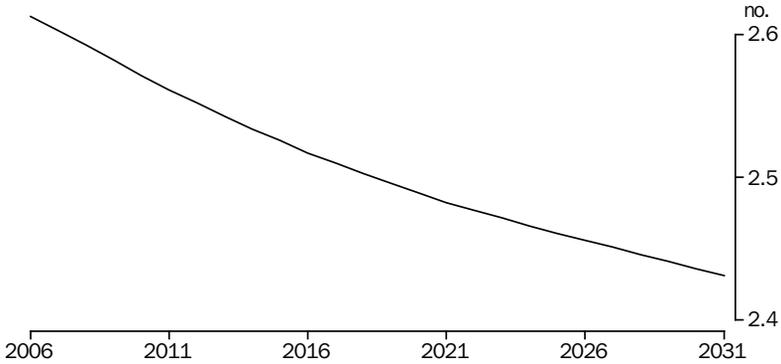
Family households are projected to remain the most common type of household, increasing from 5.6 million in 2006 to 8.0 million in 2031 (graph 7.42). However, as a proportion of all households, family households are projected to decrease from 72% in 2006 to 69% in 2031.

7.39 AVERAGE HOUSEHOLD SIZE



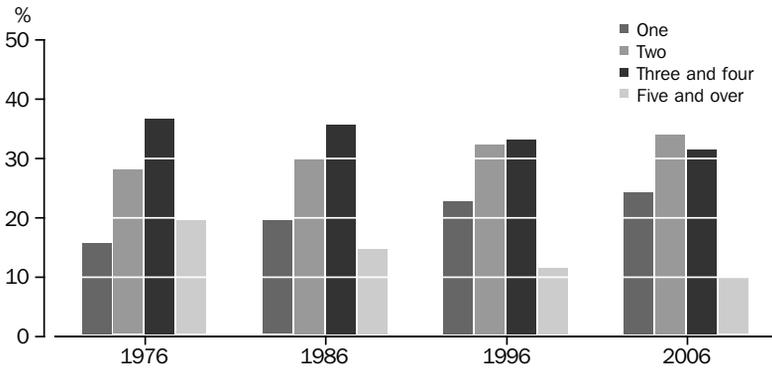
Source: Year Book Australia 1988 (1301.0); Censuses of Population and Housing, 1976–2006.

7.40 PROJECTED AVERAGE HOUSEHOLD SIZE



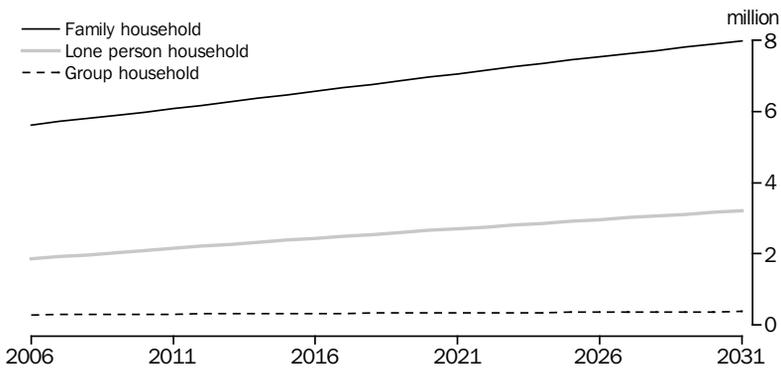
Source: Household and Family Projections, Australia, 2006 to 2031 (3236.0).

7.41 HOUSEHOLD PROPORTIONS, By number of persons living in household



Source: Censuses of Population and Housing, 1976 to 2006.

7.42 PROJECTED NUMBER OF HOUSEHOLDS, By household type



Source: Household and Family Projections, Australia, 2006 to 2031 (3236.0).

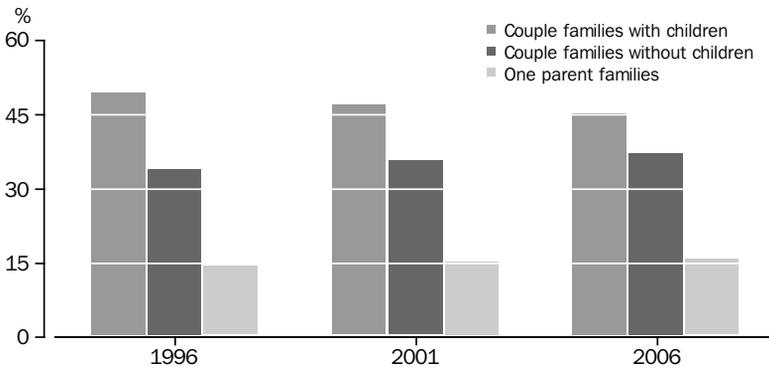
Families

Between the 2001 and 2006 Censuses, the number of families increased from 4.9 million in 2001 to 5.2 million in 2006. Couples with children continued to be the most common family type over this period. However, as a proportion of all families, couple families with children decreased (graph 7.43). In 2001, couple families with children made up 47% (2.3 million families) of all families while in 2006 this had decreased to 45% (2.4 million families). Other family types increased in number between 2001 and 2006. The number of couple families without children increased by 10% from 1.8 million families in 2001 to 1.9 million families in 2006. One parent families also increased, from 762,600 in 2001 to 823,300 in 2006, an increase of 7.9%.

Between 2006 and 2031, the number of couple families with children is projected to increase slowly. This scenario reflects a gradual trend away from this type of family and is related to increasing numbers of couple families without children and increasing numbers of one parent families.

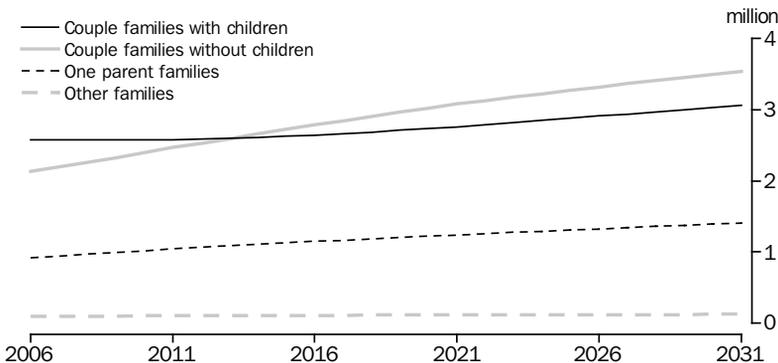
Graph 7.44 shows that the number of couple families with children is projected to increase to 3.1 million in 2031 (38% of all families). Couple families without children are projected to experience the largest and fastest increases of all family types in Australia. As a result, couple families without children are projected to outnumber couple families with children in 2014. Couple families without children are projected to increase to 3.5 million families in 2031 (43% of all families). One parent families are projected to increase to 1.4 million in 2031.

7.43 FAMILIES, By selected family type



Source: ABS data available on request, 2006 Census of Population and Housing.

7.44 PROJECTED FAMILIES, By selected family type



Source: Household and Family Projections, Australia, 2006 to 2031 (3236.0).

Living arrangements of older Australians

The 2006 estimated resident population data show that there were 1.3 million people aged 75 years and over in Australia, representing 6% of the total population. Over the period 2006 to 2031, this number is projected to more than double to 2.9 million people (10% of Australia's population).

In 2006, 87% of older Australians aged 75 years and over were living in private dwellings (e.g. houses, flats, caravans). The largest proportion of older Australians (43%, or 548,500 people) were living in a private dwelling with a partner; most of these (39% of older Australians) were partners in couple only families, while 4% were partners in couple families with children. People living alone accounted for a further 31% (400,500) of older Australians, while 13% (162,800) lived in other living arrangements (e.g. a lone parent living with their child). A further 13% of older Australians (168,600) lived in non-private dwellings (e.g. hotels, hospitals).

By 2031, the number of older Australians living with a partner is projected to increase to between 1.2 and 1.5 million people (42% and 52% of all people aged 75 years and over, respectively). The number of people living alone is projected to increase to between 841,800 and 901,800, accounting for between 29% and 31% of older Australians, while the number of people living in non-private dwellings is projected to increase to between 285,400 and 403,400 people, or 10% to 14% of older Australians.

International comparisons

This section presents a range of data comparing Australia with other countries.

Fertility

According to the United Nations Population Division's *World Population Prospects: The 2010 Revision*, the world average total fertility rate for the period 2005–2010 is estimated at 2.52 babies per woman. However, total fertility rates for individual countries vary considerably. Many factors can influence a country's fertility rate, such as differences in social and economic development and the prevalence of contraceptive use. In general, less developed countries have higher fertility rates than more developed countries.

Over the last 30 years, fertility has declined in most countries. According to the United Nations, Indonesia displayed a large decline in the average total fertility rate – from 4.73 in the period 1975–1980 to 2.19 in the period 2005–2010 (graph 7.45). During the period 2005–2010, Hong Kong (SAR of China) is projected to have one of the lowest average total fertility rates (0.99) followed by Macau (SAR of China) (1.02). Several European countries also have low fertility, including Poland (1.32), Germany (1.36) and Italy (1.38). Although below the world average of 2.52, Australia's total

fertility rate for 2010 of 1.89 babies per woman is comparable to other developed countries.

In contrast, many African countries have high fertility. Projections for the period 2005–2010 have Niger (7.19) among the highest. In South-East Asia, Timor-Leste (6.53) has one of the world's highest fertility rates, increasing from a total fertility rate in the period 1975–1980 of 4.31 babies per woman. For more information, see table 7.47.

Life expectancy

Australians have a life expectancy at birth which compares well with that of other developed nations. Life expectancy at birth of Australian males (79.5 years) for the 2008–2010 period, was similar to Japan and Switzerland. For the same period, life expectancy at birth of Australian females (84.0 years) was exceeded by Japan, Hong Kong (SAR of China), France and Switzerland.

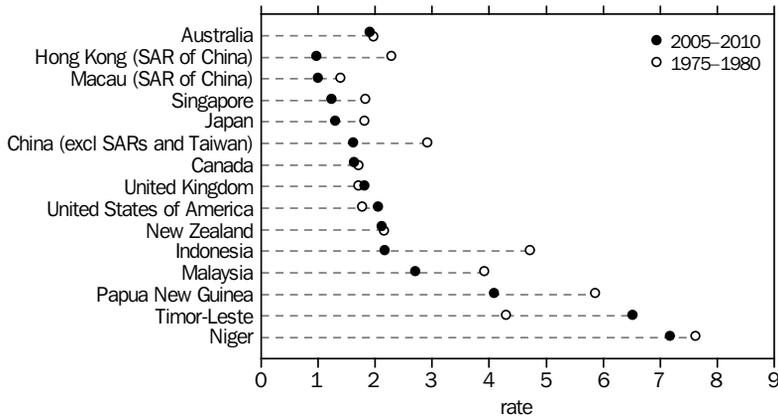
In the 2008–2010 period, the combined Australian male and female life expectancy at birth was 81.7 years. This was higher than the level recorded by the United Nations for the period 2005–2010 for Canada (80.5 years), New Zealand (80.1 years), the United Kingdom (79.6 years) and the United States of America (78.0 years). For more information, see table 7.47.

International migration

The United Nations Population Division's *World Population Prospects: The 2010 Revision* presents international migration statistics averaged over five years to improve comparability between countries. As with Australia, countries such as Canada, the United States of America, the United Kingdom and New Zealand experienced high net international migration rates in 2005–10 (rates

above 3.0 per 1,000 population). In numeric terms in the 2005–10 period for the selected countries (table 7.46), the gains from net international migration ranged from an average 13,000 persons per year for New Zealand to 991,000 persons for the United States of America. The losses ranged from 6,000 persons for Korea, Republic of (South) to 600,000 persons for India. Information on migration rates for more countries can be found in table 7.47.

7.45 TOTAL FERTILITY RATES(a), Selected countries



(a) Births per woman.

Source: United Nations Population Division, *World Population Prospects: The 2010 Revision*.

7.46 NET INTERNATIONAL MIGRATION, Selected countries

	2000–2005		2005–2010		Percentage change 2000–2005 to 2005–2010 %
	Average number(a) '000	Migration rate(b) rate	Average number(a) '000	Migration rate(b) rate	
Australia(c)	117	5.9	231	10.9	97.4
Canada	218	6.9	220	6.6	0.9
China (excludes SARs and Taiwan)	-460	-0.4	-377	-0.3	-18.0
India	-385	-0.4	-600	-0.5	55.8
Japan	10	0.1	54	0.4	440.0
Korea, Republic of (South)	-20	-0.4	-6	-0.1	-70.0
Malaysia	79	3.2	17	0.6	-78.5
New Zealand	27	6.8	13	3.1	-51.9
South Africa	140	3.0	140	2.9	0.0
United Kingdom	194	3.3	204	3.3	5.2
United States of America	1 239	4.3	991	3.3	-20.0

(a) The yearly average of each five year period (2000–2005 and 2005–10).

(b) Net overseas migration per 1,000 population.

(c) Data for Australia are calculated based on financial year data from the most recent official population counts by the ABS.

Source: Australian Demographic Statistics (3101.0); United Nations Population Division, *World Population Prospects: The 2010 Revision, Medium variant*.

7.47 INTERNATIONAL COMPARISONS(a), Selected countries and indicators

	POPULATION			EXPECTATION OF LIFE AT BIRTH(b)			NET INTERNATIONAL MIGRATION		
	Number	Average annual growth rate	Density	Total fertility rate(c)	Males	Females	Persons	Number	Migration rate(d)
		2005–2010							
	'000	%	persons per sq km	rate	years	years	years	'000	rate
Australia	22 300	1.80	2.9	1.89	79.5	84.0	81.7	231	10.9
Afghanistan	31 412	2.58	48.2	6.62	47.2	47.5	47.3	-76	-2.6
Canada	34 017	1.05	3.4	1.65	78.2	82.8	80.5	220	6.6
China (excludes SARs and Taiwan)	1 341 335	0.51	139.8	1.64	71.1	74.5	72.7	-377	-0.3
Fiji	861	0.91	47.1	2.75	66.1	71.9	68.8	-6	-6.8
France	62 787	0.58	113.8	1.97	77.5	84.3	81.0	100	1.6
Germany	82 302	-0.06	230.5	1.36	77.2	82.4	79.8	110	1.3
Hong Kong (SAR of China)	7 053	0.70	6 417.8	0.99	79.0	84.3	81.6	35	5.1
Iceland	320	1.52	3.1	2.10	79.5	83.1	81.3	2	6.8
India	1 224 614	1.43	372.5	2.73	62.8	65.7	64.2	-600	-0.5
Indonesia	239 871	1.08	125.9	2.19	66.3	69.4	67.9	-259	-1.1
Iraq	31 672	2.93	72.3	4.86	63.4	71.7	67.3	-30	-1.0
Italy	60 551	0.63	201.0	1.38	78.6	84.0	81.4	400	6.7
Japan	126 536	0.02	334.9	1.32	79.3	86.1	82.7	54	0.4
Korea, Republic of (South)	48 184	0.48	484.1	1.29	76.5	83.3	80.0	-6	-0.1
Lebanon	4 228	0.85	406.5	1.86	69.9	74.2	72.0	-3	-0.6
Macau (SAR of China)	544	2.43	20 909.8	1.02	77.7	82.6	80.0	10	19.8
Malaysia	28 401	1.69	86.1	2.72	71.2	75.7	73.4	17	0.6
Nepal	29 959	1.87	203.6	2.95	66.7	68.0	67.4	-20	-0.7
New Zealand	4 368	1.10	16.1	2.14	78.0	82.2	80.1	13	3.1
Niger	15 512	3.54	12.2	7.19	52.7	53.6	53.1	-6	-0.4
Papua New Guinea	6 858	2.36	14.8	4.10	59.5	63.7	61.5	na	na
Poland	38 277	0.06	118.4	1.32	71.2	79.9	75.5	11	0.3
Russian Federation	142 958	-0.12	8.4	1.44	61.6	74.0	67.7	227	1.6
Singapore	5 086	3.52	7 447.2	1.25	78.5	82.7	80.6	144	30.9
South Africa	50 133	0.96	41.1	2.55	50.1	52.1	51.2	140	2.9
Spain	46 077	1.20	91.1	1.41	77.2	83.8	80.5	450	10.1
Sudan	43 552	2.51	17.4	4.60	58.6	62.0	60.3	27	0.7
Sweden	9 380	0.76	20.8	1.90	78.8	82.9	80.9	53	5.8
Switzerland	7 664	0.66	185.6	1.46	79.3	84.1	81.8	37	4.8
Thailand	69 122	0.71	134.7	1.63	70.2	77.1	73.6	98	1.5
Timor-Leste	1 124	2.14	75.6	6.53	59.9	61.7	60.8	-10	-9.4
United Kingdom	62 036	0.60	255.4	1.83	77.4	81.7	79.6	204	3.3
United States of America	310 384	0.89	32.2	2.07	75.4	80.5	78.0	991	3.3
Vietnam	87 848	1.10	264.9	1.89	72.3	76.2	74.3	-86	-1.0
Yemen	24 053	3.05	45.6	5.48	62.5	65.4	63.9	-27	-1.2
World	6 895 889	1.16	50.6	2.52	65.7	70.1	67.9	..	..

.. not applicable

na not available

(a) Reference years: Australia: Population, 30 June 2010; Total fertility rate, 2010; Expectation of life at birth, 2008–2010; Net international migration 2005–2010. Selected countries: 2010 for population and 2005–2010 for the remaining indicators as published by the United Nations. See Source below.

(b) Expectation of life at age zero.

(c) Births per woman.

(d) Net overseas migration per 1,000 population.

Source: Australia data: Population, Australian Demographic Statistics, Australia (3101.0); Total fertility rates, Births, Australia (3301.0); Expectation of life at birth, Deaths, Australia (3302.0); International migration, Migration, Australia (3412.0). Selected countries data: United Nations Population Division, World Population Prospects: The 2010 Revision, last viewed August 2011 <http://esa.un.org/unpd/wpp/unpp/panel_indicators.htm>.

Characteristics of recent migrants to Australia

Who are recent migrants?

Recent migrants are defined as people with permanent Australian resident status who were born overseas, arrived in Australia after the year 2000 and were aged 15 years or over on arrival. They exclude people who were an Australian or New Zealand citizen on arrival, and those who currently hold New Zealand citizenship.

Where are they from?

At the time of the 2010 Characteristics of Recent Migrants Survey (6250.0) in November 2010, there were approximately 1.4 million people aged 15 years or older on arrival who were born overseas and who had entered Australia after 2000. This equates to around 8% of Australia's population aged 15 years and over.

Of these, 196,500 were an Australian or New Zealand citizen before arrival, or held New Zealand citizenship, while 10,400 planned to stay less than 12 months. Of the remaining 1.2 million people, 60% (719,600) were recent migrants (410,900 had a permanent visa,

308,700 had Australian citizenship) and 40% were temporary residents (477,800).

As can be seen in table S7.1, the United Kingdom (14%) and India (13%) provided the highest number of recent migrants, followed by China (excludes SARs and Taiwan) with 10%.

What do they do?

The recent migrant labour force participation rate was 74% in November 2010, whereas that for Australian-born persons was 69%. The survey results showed that 68% of recent migrants were employed, compared with 66% of people born in Australia. Male recent migrants were more likely to be employed than female recent migrants – 82% for males compared with 56% for females. In contrast, 72% of males and 60% of females born in Australia were employed.

The unemployment rate for recent migrants was 8%, whereas that for Australian-born persons was 5%. One of the reasons for differences in the employment, unemployment and labour force rates of recent migrants

S7.1 CHARACTERISTICS OF RECENT MIGRANTS(a), Top ten countries of birth—2010

Country of birth	Recent migrants '000	Proportion of all recent migrants %
United Kingdom	104.2	14.5
India	94.9	13.2
China (excludes SARs and Taiwan)	74.2	10.3
South Africa	41.8	5.8
Philippines	32.5	4.5
Sri Lanka	23.5	3.3
Malaysia	*16.2	2.3
Korea, Republic of (South)	*14.3	2.0
Fiji	*13.0	1.8
Vietnam	*12.5	1.7
Other countries	292.5	40.6
Total	719.6	100.0

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Recent migrants are defined as people who were born overseas, arrived in Australia after 2000, were aged 15 years and over on arrival, were not an Australian citizen or New Zealand citizen on arrival, do not currently hold New Zealand citizenship, and have permanent Australian resident status.

Source: *Characteristics of Recent Migrants, 2010 (6250.0)*.

compared to the Australian-born population is the younger age structure of the recent migrant population.

As at November 2010, around 65% of all recent migrants (72% males, 58% females) left a paid job in their country of origin when they came to live in Australia. Almost 80% of recent migrants had a job since arrival (573,300). Of those who had a job since arrival, 70% had obtained a non-school qualification before arrival, with 28% of those holding a Professional occupation in their first job held in Australia (111,900).

As at November 2010, almost one-third (31%) of recent migrants had obtained a non-school qualification since arrival (219,800) and of these 46% obtained a Bachelor degree or higher. Over half (65%) of all recent migrants had a non-school qualification before arrival (465,400). Of these, 67% had obtained a Bachelor degree or higher before arrival and 33% had their qualifications recognised in Australia. Of those recent migrants with a non-school qualification before arrival and who had a job since arrival, 51% had used their highest non-school qualification in their first job in Australia. Almost a quarter (23%) of

recent migrants with a non-school qualification before arrival (who had a job since arrival) did not use their highest qualification in their first job and tried to find work more suited to their qualifications.

In total, 487,900 (68%) recent migrants were employed. A higher proportion from main English-speaking countries¹ were employed than those born in other countries (81% compared with 64%). Within the employed group, 27% were employed as Professionals, with a further 14% employed as Technicians and trades workers and 13% as Clerical and administrative workers.

Most of the recent migrants (76% or 548,100) come from other than main English-speaking countries. However, about 30% of those migrants indicated that English was their main language spoken when they first came to live in Australia.

Difficulties with language appeared to be a barrier for some recent migrants to gaining work, with 33% reporting language difficulties. The unemployment rate for recent migrants from other than main English-speaking countries was higher (10%) than for those from a main English speaking country (5%).

Endnotes

1. Main English-speaking countries are those countries from which Australia receives, or has received, significant numbers of overseas settlers who are likely to speak English (England, Scotland, Wales, Ireland, New Zealand, Canada, South Africa, and the United States of America). It is important to note that being from a country other than a main English-speaking country does not imply a lack of proficiency in English.

Humanitarian arrivals

Who are they?

Australia's permanent immigration program consists of two components, the Migration Program (Skilled, Family and Special Eligibility Stream migrants) and the Humanitarian Program (Refugees and others in humanitarian need). The Australian Government Department of Immigration and Citizenship (DIAC) manages and grants visas within these programs each year in accordance with relevant legislation, government planning and policy.

The Migration Program outcome for 2009–10 was 168,600 places, the majority of which were filled from the United Kingdom, China (excludes SARs and Taiwan) and India. For the Humanitarian Program in 2009–10, a total of 13,800 visas were granted (table S7.2).

Australia's Humanitarian Program aims to provide options for refugees who have been forced to leave their homes by armed conflict, persecution and human rights abuses. The Humanitarian Program has two components:

- the onshore component provides protection (asylum) to persons already in Australia who engage Australia's protection obligations under the United Nations 1951 Refugees Convention, and
- the offshore component provides resettlement to persons overseas who are

subject to persecution or violation of their human rights, have fled their homeland and have been determined to be refugees.

Where do they come from?

Since World War II, Australia has welcomed over 750,000 people from many different countries in response to changing global resettlement and humanitarian needs. In 2009–10, a total of 13,800 visas were granted, 9,200 (67%) under the offshore component and 4,500 (33%) under the onshore component.

From 1998 to 2001, most of the humanitarian arrivals were sourced from Europe, accounting for about half of all resettlements. At around the same time, arrivals from the Africa region increased from about 16% (1998–99) to 70% (2003–2005). Since 2005–06, there has been an increasing number of refugees from the Asia/Pacific region.

In 2009–10, around 32% of offshore visas were granted to people affected by conflicts in the Middle East and South West Asia. These people in need of humanitarian assistance were mainly from Afghanistan and Iraq. A further 39% were granted to refugee groups such as the Burmese in Thailand, Bhutanese in Nepal and Rohingya in Bangladesh. The Africa region continues to be a focus of the program, accounting for 29% of entrants in 2009–10 (table S7.3).

S7.2 HUMANITARIAN PROGRAM VISA GRANTS, By category 2007–08 to 2009–10

Category	2007–08 no.	2008–09 no.	2009–10 no.
Offshore			
Refugee	6 004	6 499(a)	6 003
Special Humanitarian Program	4 795	4 511	3 233
Onshore			
Temporary Humanitarian Concern visa	84	5	—
Special Humanitarian Program	231	75	11
Resolution of Status	—	39	8
Temporary Protection visa	196	9	—
Permanent Protection visa	1 704	2 369	4 515
Total	13 014	13 507	13 770

— nil or rounded to zero

(a) Includes a one-off allocation of 500 refugee places for Iraqis.

Source: Department of Immigration and Citizenship, June 2011, *Population Flows: Immigration aspects, 2009–2010 Edition*.

S7.3 OFFSHORE VISA GRANTS, By top ten countries of birth—2009–10

Country of birth	Offshore visa grants no.
Burma (Myanmar)	1 959
Iraq	1 688
Bhutan	1 144
Afghanistan	951
Congo, Democratic Republic of	584
Ethiopia	392
Somalia	317
Sudan	298
Liberia	258
Sierra Leone	237
Other countries	1 408
Total	9 236

Source: Department of Immigration and Citizenship, Fact Sheet 60. Australia's Refugee and Humanitarian Program, March 2011, last viewed August 2011, <<http://www.immi.gov.au>>.

During 2009–10, there were 8,200 protection visa (onshore) applications lodged. The top three countries of citizenship for people applying for protection visas in 2009–10 were Afghanistan (1,600), China (excludes SARs and Taiwan) (1,300) and Sri Lanka (650).

Asylum seekers – how do they get here?

Over the last 35 years, a number of people have sought protection in Australia, in response to humanitarian crises. They have arrived by air or by sea; those who arrive by air are known as non-Irregular Maritime Arrivals (Non-IMA), whereas those who arrive by sea are known as Irregular Maritime Arrivals (IMA). Major 'waves' of arrivals are:

- 1976–1981 just over 2,000 people arrived, mainly from Vietnam

- 1989–1998 almost 3,100 people arrived, mainly from Cambodia, Vietnam and Southern China
- 1999–2001 almost 12,200 people arrived, mainly from Afghanistan and Iraq.

In 2008–09 and 2009–10, the majority of IMA final visa grants were to citizens of Afghanistan, while the majority of non-IMA final grants were to citizens of China (excludes SARs and Taiwan) (table S7.4).

During 2009–10, more people seeking asylum in Australia arrived by air than by sea.

S7.4 FINAL PROTECTION VISA GRANTS(a), By top five countries of citizenship—2009–10

Country of citizenship	Final grants no.
IRREGULAR MARITIME ARRIVALS (IMA)	
Afghanistan	1 425
Sri Lanka	315
'Stateless'	170
Iraq	134
Iran	64
Other	12
Total	2 120
NON-IRREGULAR MARITIME ARRIVALS (NON-IMA)	
China (excludes SARs and Taiwan)	492
Zimbabwe	255
Pakistan	212
Iran	211
Sri Lanka	190
Other	1 007
Total	2 367

(a) Due to different methodologies employed, the count of protection visa grants to IMAs varies by 28 persons from the total included in table S7.2.

Source: Department of Immigration and Citizenship, June 2011, Population Flows: Immigration aspects, 2009–2010 Edition.

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8

LABOUR

This chapter presents a picture of the Australian labour market. While other official statistics generally have a particular economic or social focus, labour statistics cut across both dimensions, and therefore provide useful insights into economic performance and community life in Australia.

The chapter briefly describes key labour statistics concepts and measures (e.g. employment, unemployment, job vacancies, earnings, industrial disputes), highlights the main features of the Australian labour market in 2010–11, examines developments in the Australian labour market over the medium and long-term, and presents more detailed analysis of a number of issues affecting the Australian labour market.

Two additional articles are included in this chapter: *50 Years of labour force: now and then* and *Labour force and other characteristics of farmers*.

Related information can be found in a number of chapters, including chapters 7 *Population* and 12 *Education and training*.

Information on employment for individual industries can be found in chapters 15 to 25.

Labour market statistics

Labour market statistics focus on labour demand and supply. In Australia, surveys of businesses conducted by the Australian Bureau of Statistics (ABS) are the primary source of data on labour demand. The types of data collected through business surveys include labour costs, earnings and job vacancies. The ABS population censuses and household surveys provide extensive information about the size and characteristics of labour supply and potential labour supply; the major source is the monthly Labour Force Survey (LFS) and the ongoing program of supplementary surveys. Information obtained through these types of collections includes data on labour force status and employment characteristics as well as demographic characteristics, such as age. Diagram 8.1 illustrates how labour statistics from

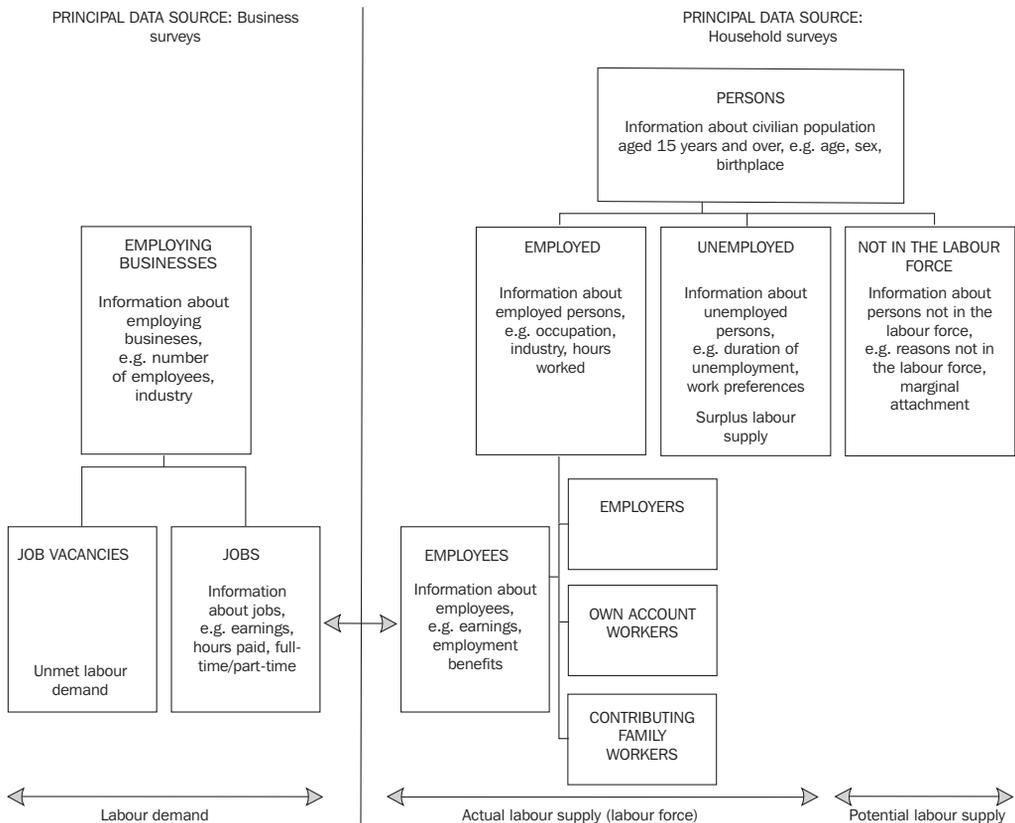
ABS household and business surveys relate to the labour market.

The concepts and definitions underlying Australian labour statistics are based on the conventions, recommendations and guidelines developed and maintained by the International Labour Organization and the United Nations Statistics Division. Australian labour statistics comply in almost every respect with these international standards.

Labour force

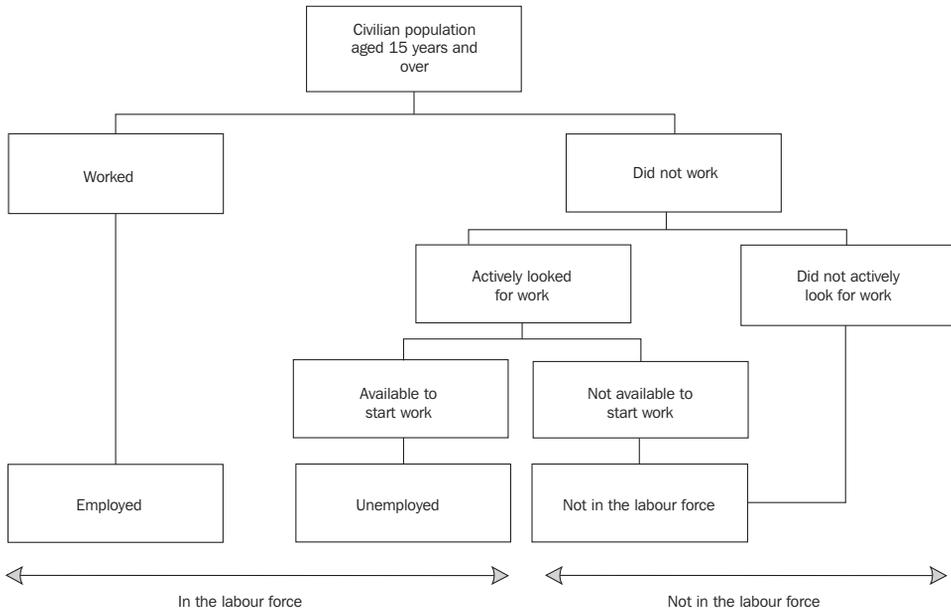
The labour force represents the key official measure of the total supply of labour available to the labour market during a given short reference period. It represents the labour available for the

8.1 AUSTRALIAN LABOUR STATISTICS FRAMEWORK



Source: *Labour Statistics: Concepts, Sources and Methods (6102.0.55.001)*.

8.2 AUSTRALIAN LABOUR FORCE FRAMEWORK(a)



(a) This diagram provides a simple overview. The detailed rules for determining whether a person is classified as employed, unemployed or not in the labour force are outlined in *Labour Statistics: Concepts, Sources and Methods* (6102.0.55.001).

Source: *Labour Statistics: Concepts, Sources and Methods* (6102.0.55.001).

production of economic goods and services. Therefore, people in the labour force are also referred to as the ‘currently economically active population’.

The Australian labour force framework classifies people into three mutually exclusive categories, Employed, Unemployed and Not in the labour force. The employed and unemployed categories together make up the labour force, which gives a measure of the number of people contributing to the used or unused supply of available labour. The third category (not in the labour force) represents the currently economically inactive population. This framework is illustrated in diagram 8.2. Further details about the Australian labour force framework, and the specific criteria for classifying people to these three basic categories, are available in *Labour Statistics: Concepts, Sources and Methods* (6102.0.55.001).

For the purpose of compiling Australian labour force statistics, the population is restricted to people in the civilian population aged 15 years and over. This practice is consistent with

international guidelines for the collection of labour statistics.

Characteristics of the labour force

The size and composition of the labour force are constantly changing. Changes in the size of the labour force are caused by changes in labour force participation as well as changes in the size and composition of the adult population. Between June 2010 and June 2011, the labour force grew by 1.7%. During the same period, the civilian population aged 15 years and over grew by 1.5%. The difference between these two growth rates reflects an increase in the labour force participation rate over this period.

The labour force participation rate is one of the most important indicators for analysing the overall level of labour market activity. The participation rate is calculated by dividing the total number of people in the labour force by the total number of people in the civilian population aged 15 years and over. Analysis of participation rates, particularly by age, sex and family type,

provides the basis for monitoring changes in the size and composition of the labour supply, including reflecting changes in the underlying civilian population.

During the last two decades, the overall labour force participation rate has increased slowly, rising from 64% in 1990–91 to 66% in 2010–11. The long-term rise in the labour force participation rate has been driven by an increase in the female participation rate. The female participation rate increased from 52% in 1990–91 to 59% in 2010–11. In contrast, the male participation rate decreased from 75% to 73% over the same period. Graph 8.3 shows male and female participation rates between 1990–91 and 2010–11, and illustrates a narrowing of the gap between male and female participation rates over this period.

Underlying these trends in male and female participation rates are varying movements in the age-specific participation rates. As shown in table 8.4, male and female participation rates were relatively similar in the 15–19 year age group for both 1990–91 and 2010–11. Participation rates for males and females rose as young people moved from education and training to employment. For males, participation rates were highest in the 25–34 and 35–44 year age groups in both 1990–91 and 2010–11. Female participation rates peaked in the 45–54 year age group in 2010–11 and in the 20–24 year age group in 1990–91.

A comparison of age-specific participation rates for females shows that between 1990–91 and 2010–11, labour force participation rates

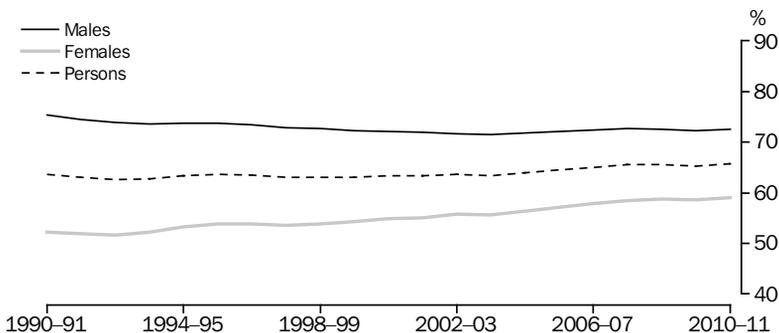
increased for all age groups except the 20–24 year age group. While over the last 20 years there has been a considerable increase in the labour force participation of females in their peak child-bearing years (the 25–34 year age group), the largest increases have been in the participation of older females. Between 1990–91 and 2010–11, the participation rate of females aged 55–64 years increased by 29 percentage points and for females aged 45–54 years by 16 percentage points.

Participation rates for males declined between 1990–91 and 2010–11 for most age groups. The exceptions were for those aged 55–64 years (63% to 72%) and those aged 65 years and over (9% to 16%).

When looking at changes in participation rates for particular age groups over time, consideration needs to be given to underlying population changes. For example, those aged 25–34 years in 1990–91 would be in the 45–54 year age group in 2010–11. Life cycle impacts on labour force participation at certain ages is also a relevant consideration.

During the period 2006–07 to 2010–11, the total number of employed people grew by 9% to 11.4 million (table 8.5). This comprised an increase of 7% in the number of full-time employed and an increase of 14% in the number of part-time employed. Part-time employed people represented almost a third (30%) of all employed people in 2010–11. Females accounted for the majority of the part-time workforce (70% of all part-time workers).

8.3 LABOUR FORCE PARTICIPATION RATES(a)



(a) Annual averages.

Source: *Labour Force, Australia* (6202.0).

8.4 LABOUR FORCE PARTICIPATION RATES(a), By age

	MALES		FEMALES	
	1990-91	2010-11	1990-91	2010-11
15-19	59.5	54.5	57.6	57.8
20-24	89.6	83.0	78.3	76.4
25-34	94.5	91.8	65.9	73.4
35-44	94.5	91.6	71.5	75.0
45-54	89.9	88.8	62.3	78.4
55-64	62.9	71.9	25.7	54.6
65 and over	9.1	15.7	2.6	6.9
Total	75.3	72.5	52.3	59.0

(a) Annual averages.

Source: *Labour Force, Australia, Detailed – Electronic Delivery* (6291.0.55.001).

8.5 LABOUR FORCE STATUS(a)

	EMPLOYED		UNEMPLOYED			Labour force '000	Civilian population '000	Unemployment rate %	Participation rate %	
	Full-time '000	Part-time '000	Total '000	Full-time '000	Part-time '000					
MALES										
2006-07	4 855.8	867.8	5 723.6	201.8	53.9	255.7	5 979.3	8 255.4	4.3	72.4
2007-08	4 998.8	893.3	5 892.1	185.6	56.3	241.8	6 134.0	8 437.2	3.9	72.7
2008-09	5 042.6	911.9	5 954.5	245.7	62.2	307.9	6 262.4	8 639.0	4.9	72.5
2009-10	5 034.8	1 002.1	6 037.0	286.1	67.4	353.5	6 390.5	8 837.9	5.5	72.3
2010-11	5 209.2	1 011.6	6 220.8	247.4	67.1	314.5	6 535.3	9 009.9	4.8	72.5
FEMALES										
2006-07	2 601.6	2 095.9	4 697.5	145.7	92.3	238.0	4 935.5	8 525.7	4.8	57.9
2007-08	2 694.4	2 156.5	4 850.9	135.0	98.7	233.7	5 084.6	8 697.3	4.6	58.5
2008-09	2 737.1	2 227.0	4 964.2	161.6	101.0	262.6	5 226.8	8 886.4	5.0	58.8
2009-10	2 723.1	2 306.6	5 029.7	182.4	105.0	287.3	5 317.1	9 079.0	5.4	58.6
2010-11	2 805.4	2 360.7	5 166.0	178.8	113.6	292.4	5 458.5	9 250.7	5.4	59.0
PERSONS										
2006-07	7 457.4	2 963.7	10 421.1	347.6	146.2	493.8	10 914.8	16 781.2	4.5	65.0
2007-08	7 693.2	3 049.9	10 743.1	320.5	155.0	475.5	11 218.6	17 134.5	4.2	65.5
2008-09	7 779.7	3 139.0	10 918.7	407.3	163.3	570.5	11 489.2	17 525.4	5.0	65.6
2009-10	7 758.0	3 308.8	11 066.7	468.5	172.4	640.9	11 707.6	17 916.9	5.5	65.3
2010-11	8 014.5	3 372.3	11 386.9	426.2	180.7	606.9	11 993.8	18 260.6	5.1	65.7

(a) Annual averages.

Source: *Labour Force, Australia, Detailed – Electronic Delivery* (6291.0.55.001).

The unemployment rate rose from 4.5% in 2006-07 to 5.1% in 2010-11. The unemployment rate for females was higher than for males in 2010-11 (5.4% compared with 4.8%).

Labour force participation, employment and unemployment vary across states and territories, and across capital cities and regional areas. Table 8.6 shows labour force status by state/territory and capital city/balance of state for 2010-11.

In 2010-11, of the states and territories, Tasmania had the lowest participation rate (61%) while the Australian Capital Territory had the highest

participation rate (73%). The Northern Territory had the lowest unemployment rate (2.9%) and Tasmania had the highest unemployment rate (5.6%).

All states had lower unemployment rates and higher participation rates in the capital cities than in the balance of states, except South Australia, where in Adelaide the unemployment rate was higher than in the balance of South Australia.

In 2010-11, there were 12.0 million people in the Australian labour force, of whom over a quarter

8.6 LABOUR FORCE STATUS(a), By state and territory—2010–11

<i>Capital city/balance of state</i>	<i>Employed</i>	<i>Total</i>	<i>Unemployed</i>	<i>Labour force</i>	<i>Civilian population</i>	<i>Unemployment rate</i>	<i>Participation rate</i>
	<i>full-time</i>	<i>employed</i>			<i>aged 15 and over</i>		
	'000	'000	'000	'000	'000	%	%
Sydney	1 691.4	2 332.8	119.1	2 451.9	3 735.8	4.9	65.6
Balance of New South Wales	843.8	1 255.1	72.1	1 327.2	2 186.8	5.4	60.7
<i>New South Wales</i>	2 535.2	3 587.9	191.2	3 779.1	5 922.6	5.1	63.8
Melbourne	1 501.3	2 137.6	107.7	2 245.3	3 365.2	4.8	66.7
Balance of Victoria	487.3	726.5	45.2	771.7	1 215.8	5.9	63.5
<i>Victoria</i>	1 988.5	2 864.1	152.9	3 017.0	4 580.9	5.1	65.9
Brisbane	771.1	1 068.2	55.1	1 123.3	1 629.0	4.9	69.0
Balance of Queensland	886.6	1 258.2	79.5	1 337.7	2 018.5	5.9	66.3
<i>Queensland</i>	1 657.7	2 326.4	134.6	2 461.0	3 647.5	5.5	67.5
Adelaide	407.2	604.8	35.5	640.3	1 001.7	5.5	63.9
Balance of South Australia	146.1	211.9	11.6	223.5	357.5	5.2	62.5
<i>South Australia</i>	553.3	816.7	47.1	863.8	1 359.2	5.5	63.6
Perth	644.6	919.5	41.0	960.4	1 395.6	4.3	68.8
Balance of Western Australia	229.2	307.7	15.0	322.6	479.4	4.6	67.3
<i>Western Australia</i>	873.8	1 227.2	55.9	1 283.1	1 875.0	4.4	68.4
Hobart	66.9	103.0	5.0	108.0	174.1	4.7	62.0
Balance of Tasmania	88.1	134.7	9.2	143.9	238.1	6.4	60.5
<i>Tasmania</i>	155.0	237.7	14.2	251.9	412.2	5.6	61.1
<i>Northern Territory</i>	98.4	122.3	3.6	125.9	173.0	2.9	72.8
<i>Australian Capital Territory</i>	152.7	204.6	7.3	211.9	290.2	3.5	73.0
Australia	8 014.5	11 386.9	606.9	11 993.8	18 260.6	5.1	65.7

(a) Annual averages.

Source: Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001).

8.7 LABOUR FORCE STATUS(a), By country of birth—2010–11

	<i>Employed</i>	<i>Total</i>	<i>Un-</i>	<i>Labour</i>	<i>Not in the</i>	<i>Unemploy-</i>	<i>Participation</i>
	<i>full time</i>	<i>employed</i>	<i>employed</i>	<i>force</i>	<i>labour force</i>	<i>ment rate</i>	<i>rate</i>
	'000	'000	'000	'000	'000	%	%
Born in Australia	5 780.7	8 272.5	437.0	8 709.5	3 983.3	5.0	68.6
Born overseas	2 231.2	3 111.1	169.7	3 280.8	2 021.7	5.2	61.9
Oceania and Antarctica	330.6	433.3	27.6	460.9	139.2	6.0	76.8
North-West Europe	622.5	866.6	33.2	899.7	585.2	3.7	60.6
Southern and Eastern Europe	208.9	294.5	12.8	307.3	441.3	4.2	41.0
North Africa and the Middle East	88.5	128.0	13.3	141.3	162.1	9.4	46.6
South-East Asia	306.6	416.8	25.1	441.9	236.9	5.7	65.1
North-East Asia	208.1	304.8	19.1	323.9	202.7	5.9	61.5
Southern and Central Asia	229.3	338.9	21.9	360.8	123.2	6.1	74.5
Americas	104.0	148.7	7.1	155.8	66.8	4.6	70.0
Sub-Saharan Africa	132.7	179.5	9.6	189.1	64.2	5.1	74.7
Total(b)	8 014.5	11 386.9	606.9	11 993.8	6 266.8	5.1	65.7

(a) Annual averages.

(b) Includes persons in institutions and persons whose country of birth was not specified or was unable to be classified by the Standard Australian Classification of Countries (SACC), Australia (1269.0).

Source: Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001).

(27%) were born overseas (table 8.7). The labour force participation rate of people born overseas was 62% compared with 69% for people born in Australia. This, in part, reflects the older age distribution of the overseas born population in Australia.

Table 8.8 provides an overview of the labour force status of people in 2010–11, according to the family relationship within the household. For partners in couple families with dependants present, husbands (or male partners) had a higher participation rate (93%) and lower unemployment

8.8 LABOUR FORCE STATUS(a), By relationship in household—2010–11

	Employed full-time '000	Total employed '000	Un- employed '000	Labour force '000	Not in the labour force '000	Civilian population aged 15 and over '000	Unemploy- ment rate %	Partici- pation rate %
MALES								
Family member	4 371.4	5 195.9	245.7	5 441.7	1 819.6	7 261.3	4.5	74.9
Husband or partner	3 569.4	4 001.8	97.0	4 098.8	1 222.9	5 321.8	2.4	77.0
With dependants	1 987.8	2 141.3	52.5	2 193.8	155.3	2 349.1	2.4	93.4
Without dependants	1 581.6	1 860.5	44.6	1 905.0	1 067.7	2 972.7	2.3	64.1
Lone parent	101.2	117.2	8.1	125.3	51.1	176.3	6.4	71.0
With dependants	62.3	73.6	6.4	80.1	20.6	100.7	8.0	79.5
Without dependants	38.9	43.6	1.6	45.2	30.4	75.6	3.6	59.7
Dependent student	21.6	229.5	42.9	272.4	326.1	598.5	15.8	45.5
Non-dependent child(b)	577.8	713.1	86.2	799.4	150.7	950.1	10.8	84.1
Other family person	101.5	134.3	11.4	145.8	68.8	214.5	7.9	68.0
Non-family member	769.2	936.5	57.3	993.8	460.4	1 454.2	5.8	68.3
Lone person	471.2	551.7	33.3	585.0	348.6	933.6	5.7	62.7
Not living alone	298.0	384.8	24.0	408.8	111.8	520.7	5.9	78.5
Relationship in household not determined	68.6	88.4	11.4	99.8	194.5	294.4	11.5	33.9
Total	5 209.2	6 220.8	314.5	6 535.3	2 474.5	9 009.9	4.8	72.5
FEMALES								
Family member	2 275.5	4 404.8	252.7	4 657.5	2 783.8	7 441.3	5.4	62.6
Wife or partner	1 668.5	3 141.0	109.8	3 250.8	1 953.8	5 204.6	3.4	62.5
With dependants	652.3	1 526.3	59.2	1 585.5	709.9	2 295.4	3.7	69.1
Without dependants	1 016.2	1 614.7	50.6	1 665.3	1 243.9	2 909.1	3.0	57.2
Lone parent	214.5	412.4	41.7	454.1	327.9	782.0	9.2	58.1
With dependants	155.6	324.4	36.9	361.4	196.4	557.8	10.2	64.8
Without dependants	58.9	88.0	4.7	92.7	131.4	224.2	5.1	41.4
Dependent student	16.1	294.5	44.7	339.1	277.2	616.3	13.2	55.0
Non-dependent child(b)	306.6	450.2	46.9	497.0	97.3	594.3	9.4	83.6
Other family person	69.8	106.8	9.7	116.5	127.6	244.1	8.3	47.7
Non-family member	489.8	693.0	32.8	725.8	735.5	1 461.3	4.5	49.7
Lone person	321.3	449.7	18.7	468.4	638.4	1 106.8	4.0	42.3
Not living alone	168.5	243.3	14.0	257.3	97.1	354.5	5.5	72.6
Relationship in household not determined	40.1	68.3	6.9	75.2	272.9	348.1	9.2	21.6
Total	2 805.4	5 166.0	292.4	5 458.5	3 792.2	9 250.7	5.4	59.0
PERSONS								
Family member	6 646.9	9 600.7	498.5	10 099.2	4 603.4	14 702.6	4.9	68.7
Husband, wife or partner	5 237.9	7 142.7	206.9	7 349.6	3 176.8	10 526.4	2.8	69.8
With dependants	2 640.1	3 667.6	111.7	3 779.3	865.2	4 644.5	3.0	81.4
Without dependants	2 597.8	3 475.1	95.2	3 570.3	2 311.5	5 881.8	2.7	60.7
Lone parent	315.6	529.6	49.7	579.4	378.9	958.3	8.6	60.5
With dependants	217.8	398.1	43.4	441.5	217.0	658.5	9.8	67.0
Without dependants	97.8	131.5	6.4	137.9	161.9	299.8	4.6	46.0
Dependent student	37.7	523.9	87.6	611.6	603.3	1 214.9	14.3	50.3
Non-dependent child(b)	884.3	1 163.3	133.1	1 296.4	248.0	1 544.4	10.3	83.9
Other family person	171.4	241.1	21.2	262.3	196.3	458.6	8.1	57.2
Non-family member	1 259.0	1 629.5	90.1	1 719.6	1 196.0	2 915.5	5.2	59.0
Lone person	792.5	1 001.4	52.0	1 053.4	987.0	2 040.4	4.9	51.6
Not living alone	466.5	628.1	38.1	666.2	209.0	875.1	5.7	76.1
Relationship in household not determined	108.7	156.6	18.4	175.0	467.5	642.5	10.5	27.2
Total	8 014.5	11 386.9	606.9	11 993.8	6 266.8	18 260.6	5.1	65.7

(a) Annual averages.

(b) Aged 15 years and over.

Source: Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001).

rate (2.4%) than wives (or female partners) (69% and 3.7% respectively). Of the partners who were employed, a higher proportion of males were employed full-time (89%) than females (53%). For lone parents with dependants, the participation rate of male parents (80%) was higher and the unemployment rate lower (8%) than female parents (65% and 10% respectively).

On average, parents in a couple relationship with dependent children have higher participation and unemployment rates than those without dependent children (81% participation compared with 61% and 3.0% unemployment compared to 2.7%), mostly due to the younger ages of

parents with dependants. Lone parents with dependent children also had higher participation and unemployment rates than those without dependent children (67% participation compared with 46% and 10% unemployment compared to 4.6%), again mainly attributable to the younger ages of parents with dependants.

Non-dependent children had high participation and unemployment rates (84% and 10% respectively), whereas dependent students had a higher unemployment rate (14%) and a much lower participation rate (50%), reflecting their student status, with almost half of this population (50%) not in the labour force.

Fifty years of Labour Force: now and then

Information on people's experience in the labour market – when and whether they work, in what sort of jobs and for how many hours a week – is a window into Australia. It highlights changes in both our economy and society and the interactions between them. The ABS collects this information through its Labour Force Survey (LFS).

The LFS is the longest running ABS household survey and provides the basis for an extensive program of labour and social surveys of the Australian population. The LFS provides official statistics on the number of employed and unemployed Australians and their working arrangements. Labour statistics assist in the development, monitoring and evaluation of policy; they are used by government and business analysts, academics, employee and employer organisations, and the broader community.

November 2011 marked the 50th anniversary of the ABS Labour Force and Supplementary Survey Program (a Labour Force Supplementary Survey is a series of questions asked on a particular topic or of a particular group of people). A lot has changed since the LFS first started, not only in the way the data are collected and disseminated, but – more importantly – in the numbers themselves. Australia in 2011 is a very different place to the Australia of 1961. This article looks at a number of important trends over the past half century or so: the increase of women working, the

rise of part-time employment, and workforce changes within industry and occupation.

A note on data comparability over time

Although LFS data are available as far back as November 1960, the majority of historical comparisons in the article between now and then are from 1966. This is mainly because, prior to 1964, the LFS was run only in six state capital cities and data detail between 1960 and 1965 is fairly limited. For example, there is no breakdown between full-time or part-time work, age groupings are very broad and there are no data on industry or occupation. Although there have been some key changes to the LFS in these areas, it is important to note that the Labour Force Framework, on which the LFS is based, has conceptually remained the same since it was first developed (although there have been some minor amendments made in accordance with International Labour Organization guidelines). Any changes made to the LFS since 1966 have had minimal impact on the time series.

The average Australian workplace was very different 50 years ago

1960s – The tea lady, smoking and the introduction of the Pill.....

In the 1960s, tea ladies did the rounds, smoking in the workplace was the norm and the standard working week was Monday to Friday, nine to five. Three weeks annual leave became the

standard across Australia in 1963, and it was not until 1999 that all Australian workers had access to personal carer's leave, maternity/paternity/adoption leave and equal pay.¹

The labour force was characterised by a marked division of the sexes and their expected roles in society. For men, the traditional role was to be the breadwinner and support a wife and family. Consequentially, part-time work was uncommon and child care was rare, leaving women the option of either starting a family, or working full-time (although there were some restrictions on married women in the workforce, for example, before 1966, married women could not work in the Commonwealth public service). In 1961, it was common for women to marry young, with the median age for first brides 21 years.² It was also common for women to have their first baby in their early 20s and the fertility rate was higher than today at 3.5 babies per woman.³

In the late 1960s, Australian women began to question the restrictive roles society had placed on them. Many women felt that there was more to life than raising children and 'keeping house'. Women marched, protested and pressured governments in a bid to gain equal rights in all aspects of life including the workplace, education, politics and sport. The introduction of the contraceptive pill in the 1960s granted women greater sexual freedom, and gave them greater control over whether and when they had children.

2011 – Flexible hours, access to family friendly leave and adequate child care.....

By August 2011, the tea lady had largely been replaced by handwritten notes at the coffee point warning staff to clean up after themselves, and smoking is no longer permitted in workplaces. Many women are starting a family much later in life, having fewer children (the fertility rate has fallen to 1.9 births per woman) and often having children without marrying first. In 2009, 35% of the babies born were to unmarried parents.⁴ The crude marriage rate was 5.5 marriages per 1,000 estimated resident population in 2009,⁵ compared with 9.2 marriages per 1,000 estimated resident population in 1969.³

The nature of the labour force has changed remarkably over the last 50 years. Today, people are working an increasingly diverse range of hours and patterns, often related to their stage of life or family circumstances. Flexible hours of work is important, as are access to family friendly leave provisions and affordable child care. As women's labour force participation has increased, there has been a corresponding increase in the demand for child care places.⁶

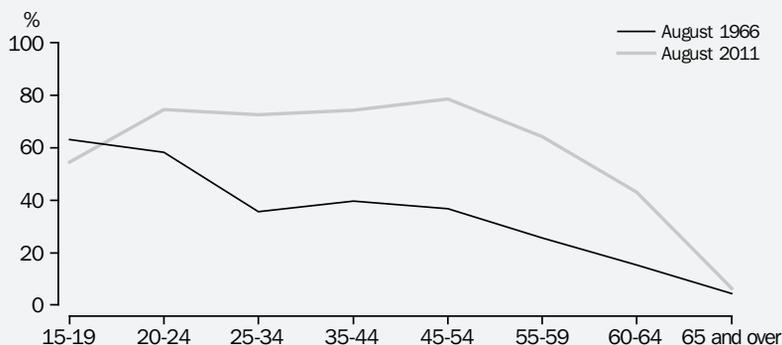
There has been significant growth in employment, and increased participation in the labour force, particularly for women.⁶ This is largely due to the increased proportion of women returning to work after having children. There is also considerable diversity in how families participate in the labour force. The traditional male breadwinner arrangements have declined since the 1960s and now both partners of couple families are likely to be employed. People have access to more paid leave entitlements and types of leave than 50 years ago; personal carer's leave and maternity/paternity/adoption leave all form part of the family-friendly leave provisions that help parents juggle paid work and family responsibilities. Changes to legislation include the national Paid Parental Leave scheme, introduced in January 2011 and the *Fair Work Act, 2009* (Cwlth), which effectively gives parents and other people caring for young children the right to make formal requests for flexible work arrangements.⁷

Changing role of women

There has been significant growth in employment, and increased participation in the labour force over the last 50 years, particularly for women. Women's participation in the labour force in August 2011 is 59%, almost double that of August 1961 (34%). Changing social attitudes, the availability of safe contraception and planned parenting, as well as adequate child care facilities have all helped to allow women to continue their careers. The growth in availability of part-time work has helped too.

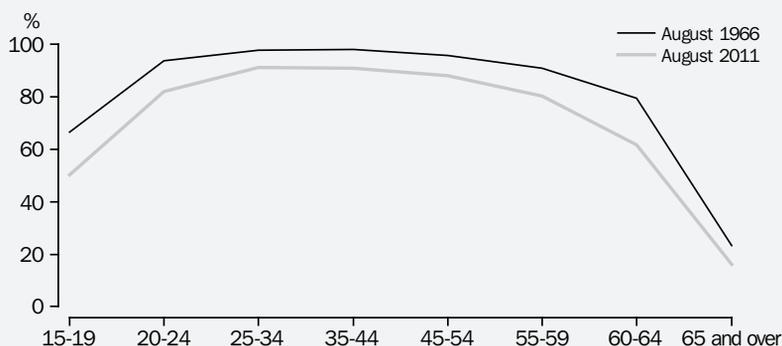
In August 1966, labour force participation for women reduced slightly for the 20–24 year age

8.9 AGE SPECIFIC LABOUR FORCE PARTICIPATION RATES, Females



Source: *Labour Force Historical Timeseries, Australia* (6204.0.55.001);
Labour Force, Australia, Detailed - Electronic Delivery (6291.0.55.001).

8.10 AGE SPECIFIC LABOUR FORCE PARTICIPATION RATES, Males



Source: *Labour Force Historical Timeseries, Australia* (6204.0.55.001);
Labour Force, Australia, Detailed - Electronic Delivery (6291.0.55.001).

group and then dramatically for the 25–34 year age group, with many women never returning to the labour force. In contrast, although a relatively slight ‘nappy valley’ effect can be seen between the ages of 25 to 44, labour force participation in August 2011 is still a lot higher than it was in 1966 and remains relatively unaffected by age from 20 to 54 (graph 8.9). While women’s participation in the labour force has increased, there has been a noticeable decline in the labour force participation of men, from 82% in August 1961 to 72% in August 2011. This fall has affected all age groups (graph 8.10); it may be due to greater retention in school and further education, as well as earlier retirement.

Although the participation rate only tells part of the story, it is important to note that the proportion of men employed on a full-time basis has declined substantially in recent decades. In August 1966, 80% of men aged over 15 were employed full-time but by August 2011, this proportion had fallen to 57%. A 2009 working paper from the Melbourne Institute of Applied Economic and Social Research suggests that the decline in male employment may be attributable to a combination of factors including population ageing, increased educational attainment, decreased incidence of partnering and dependent children, and increased employment of partners.⁸ However, while the participation rates for women have

experienced large gains over the last 50 years and those of men have fallen, participation rates for men still remain higher than for women, except in the 15–19 year age group.

Part-time trends for women

One of the most noticeable developments in the labour market over the past 50 years has been

the substantial growth in part-time work, which is defined by the ABS as employed people who usually work fewer than 35 hours per week in all jobs (and did so in the survey's reference week). Part-time work enables people to combine work with other activities and commitments. This can be especially important for women with young children and those, primarily young people, who are studying.

A brief history of the Labour Force Survey (LFS)

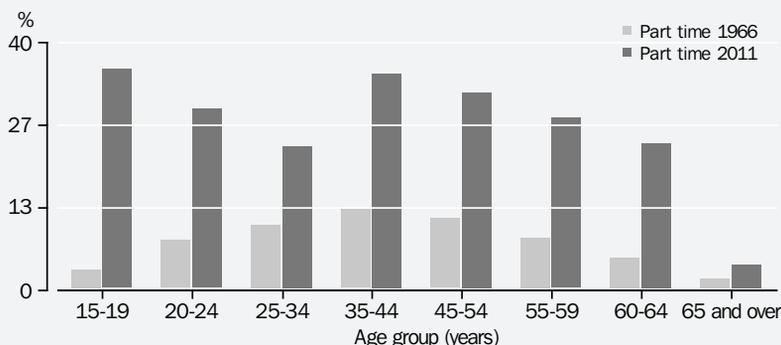
The first Labour Force Survey was run in November 1960, with the first supplementary survey in November 1961. Initially, it was known as the Survey of Employment and Unemployment or the Work Force Survey, and was the first household survey ever run by the ABS. It was made possible by the integration of the state and federal statistical agencies into a single bureau and major advances in survey methods and computer technology. It was driven by keen interest from the Commonwealth Treasury for a reliable economic indicator of the health of the labour force. The survey was originally run quarterly, and until 1966, only covered the six state capital cities and excluded Aboriginal and Torres Strait Islander peoples.

The original survey form was a card about half the size of an A4 sheet, and contained only 23 questions. It was not long before the value of interviewing 38,000 households four times a year captured the imagination and the survey began to expand. In November 1961, the first supplementary survey, topic 'Internal Migration', was included. By the end of the 1960s, 25 different supplementary surveys had been run, tagged onto the back of the Labour Force Survey form. They covered a broad range of economic and social topics, including education, work experience, travel, chronic illness, superannuation, child care, income and ex-servicemen. One of the most unusual was run on behalf of the Victorian Egg Board on the number of hens kept, and eggs produced, at home. Additional questions were also added to the main Labour Force Survey, including family relationship, which led to the first issue of family-based labour statistics in 1974. As the survey expanded and more data were collected, interviewers in the 1960s and 70s had to cope with more and more questions being squeezed onto the form, so font sizes became increasingly small. By 1978, the size of the form was doubled to A4.

In February 1978, the survey frequency changed from quarterly to monthly and was adopted as the official source of national measures of employment and unemployment. The ABS has carefully maintained the monthly series from this point onwards, managing the introduction of new classifications and survey changes with a minimum of disruption to the consistency of data. The content has also expanded, including the introduction of regional estimates in October 1982 and annual Aboriginal and Torres Strait Islander estimates in 1994. In November 1989, the survey form was updated to make use of new optical scanning technology – very much like that used for the current census form today. Telephone interviewing was introduced in 1996 and computer-assisted interviewing in 2003. Such developments have greatly reduced the time taken to conduct and process the survey – in the 1960s, it took about three years to publish the first survey results but now the time between the last interview of the month and the published results is less than three weeks. Recent developments in technology and data manipulation have also enabled new ways of viewing LFS data, such as the Aggregate monthly hours worked series released in 2009.

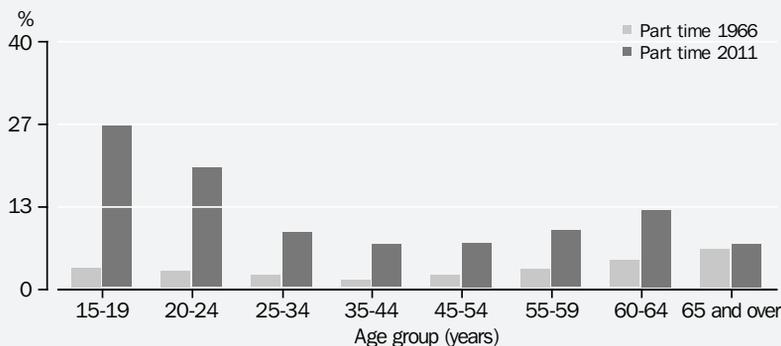
The data are now also much easier and cheaper to access. Output has progressed from priced paper publications, to diskettes and CD-ROMs and the 0055-dial-a-statistic services, to use of the World Wide Web to provide free electronic publications, spreadsheets, and datacubes.

8.11 EMPLOYED PERSONS AS A PERCENTAGE OF THE POPULATION, Females



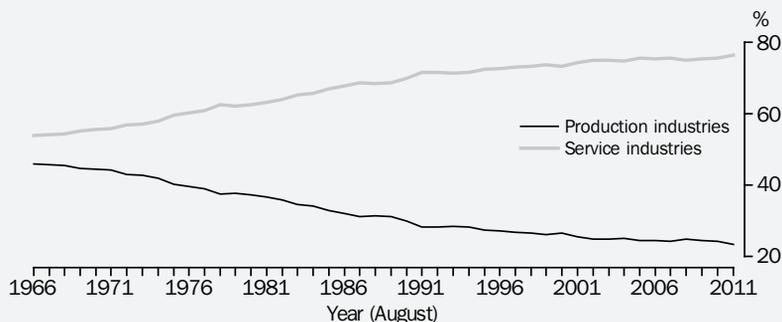
Source: Labour Force Historical Timeseries, Australia (6204.0.55.001);
Labour Force, Australia, Detailed - Electronic Delivery (6291.0.55.001).

8.12 EMPLOYED PERSONS AS A PERCENTAGE OF THE POPULATION, Males



Source: Labour Force Historical Timeseries, Australia (6204.0.55.001);
Labour Force, Australia, Detailed - Electronic Delivery (6291.0.55.001).

8.13 PROPORTION OF ALL EMPLOYED PEOPLE IN THE PRODUCTION AND SERVICE INDUSTRIES—1966 to 2011



Source: Labour Force Historical Timeseries, Australia (6204.0.55.001);
Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

Having young children has a large influence on women's labour force participation. Nowadays, many women reduce their working hours while their children are young, rather than leave the labour force altogether as was previously more often the case. In August 2011, the proportion of women working part-time in the 25–34 year age group (24%), although lower than women in the younger or older age groups, was still twice as high as it was in August 1966 (11%) (graph 8.11).

Part-time work has always been dominated by women: close to three-quarters of all part-timers in August 2011 were women. However, in recent years there has been an increase in the proportion of men working part-time. There is a clear U shaped graph: men at the start or end of their working lives are more likely to be part-time than those in their prime working years (graph 8.12). Many younger men combine work with study, while those in their late 50s or older may be in transition to retirement. In 2008–09, a quarter of all men in the 55–59 age bracket intended to retire from working full-time and were working part-time.⁹

Change in industries

In August 1966, the industries which employed most people were Manufacturing (26%) and Wholesale and retail trade (21%). Manufacturing is now a relatively small component of the economy, accounting for just 8% of employed people. In August 2011, the Health care and

social assistance industry employed more people than any other (12%), followed by Retail trade (11%) and Construction (9%). Agriculture and Mining accounted for only 3% and 2% (respectively) of all employed people. The growth in some service industries also reflects a changing Australia; 77% more people now work in the child care industry compared to just 10 years ago.

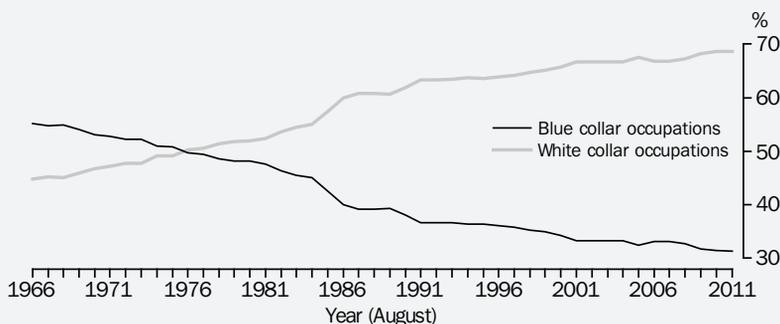
Production and service industries

In August 1966, 46% of all employed people in Australia worked in production industries (graph 8.13).¹⁰ By 2011, that proportion had halved to 23%. During that 45-year period, almost all employment growth was in the service sector, with a tripling of the workforce from 2.6 million to 8.7 million – a relative rise from 54% of all employed people in August 1966, to 77% in August 2011.¹¹ During the same period, the number of people working in production industries has remained fairly steady at between 2.2 and 2.7 million.

Change in jobs

The type of jobs occupied in the 1960s reflected the more manual work predominantly associated with trades and lower skilled jobs, often referred to as 'blue collar' work.¹² The most common occupations in August 1966 were Tradesmen, production process workers and labourers (44%), Farmers, fishermen, timber getters (12%) and Clerical (9%) (graph 8.14).

8.14 PROPORTION OF ALL EMPLOYED PEOPLE IN THE BLUE AND WHITE COLLAR OCCUPATIONS—1966 to 2011



Source: *Labour Force Historical Timeseries, Australia* (6204.0.55.001); *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

The broad patterns of industrial change over the last 45 years can be seen in the occupations in which Australians work today. The shift away from production to service industries has reduced the opportunities for blue collar workers and increased the opportunities for

‘white collar’ workers.^{13, 14} The most common occupations in August 2011 were Professionals (22%), Clerical and administrative workers (15%) and Technicians and trades workers (14%).

Endnotes

1. Australian Council of Trade Unions, About Trade Unions, viewed 28 September, 2011, <www.actu.org.au>.
2. Australian Bureau of Statistics, *Marriages, Australia, 1977* (3306.0).
3. Australian Bureau of Statistics, *Australian Historical Population Statistics, 2008* (3105.0.65.001).
4. Australian Bureau of Statistics, *Births, Australia, 2009* (3301.0).
5. Australian Bureau of Statistics, *Marriages and Divorces, Australia, 2009* (3310.0).
6. Department of the Prime Minister and Cabinet, *Families in Australia Report: 2008*, chapter 7: Balancing Work and Family, DPMC, Canberra, <www.dpmmc.gov.au>.
7. Australian Bureau of Statistics 2009, “Work, Life and Family Balance”, *Australian Social Trends* (4102.0).
8. Black, D, Tseng, Y and Wilkins, R 2009, “Examining the Role of Demographic Change in the Decline in Male Employment in Australia: A Propensity Score Re-weighting Decomposition Approach”, Melbourne Institute Working Paper Series No. 24/09, Melbourne Institute of Applied Economic and Social Research, Melbourne, <www.melbourneinstitute.com>.
9. Australian Bureau of Statistics, *Retirement and Retirement Intentions, 2008–09* (6238.0).
10. Production industries in graph 8.13 refer to production industries as defined within the official industrial classifications pertaining at the time and vary slightly between periods. For the latest period, they include: Agriculture, forestry and fishing; Mining; Manufacturing; Electricity, gas, water and waste services; and Construction.
11. Service industries in graph 8.13 refer to service industries as defined within the official industrial classifications pertaining at the time and vary slightly between periods. For the latest period, they include: Wholesale trade; Retail trade; Accommodation and food services; Transport, postal and warehousing; Information media and telecommunications; Financial and insurance services; Rental, hiring and real estate services; Professional, scientific and technical services; Administrative and support services; Public administration and safety; Education and training; Health care and social assistance; Arts and recreation services; and Other services.
12. The descriptions of blue collar occupations come from the official classifications of occupations pertaining at the time and vary slightly between periods. For the latest period, they include: Technicians and trades workers; Machinery operators and drivers; and Labourers.
13. The descriptions of white collar occupations come from the official classifications of occupations pertaining at the time and vary slightly between periods. For the latest period, they include: Managers; Professionals; Community and personal service workers; Clerical and administrative workers; and Sales workers.
14. Australian Bureau of Statistics, 1997, “Paid Work: Changing industries, changing jobs”, *Australian Social Trends* (4102.0).

Employed people

People are considered to be employed if they were in paid work or worked without pay in a family business, for one hour or more in the reference week of the ABS monthly Labour Force Survey (LFS). People who were absent from work in the reference week of the survey were also considered to be employed, unless they had been on unpaid leave for more than four weeks. This section contains information on people who are employed, including whether they worked full-time or part-time, their industry and occupation, and the characteristics of their employment arrangements.

Measuring changes between employment levels and population levels enables evaluation of the strength of employment growth compared with population growth. The measure relating these two levels is the employment to population ratio. This ratio reflects net changes in the number of people employed, relative to changes in the size of the population, whereas movements in the employment level reflect net changes in the number of people holding jobs.

The employment to population ratio rose from 59% in 2001–02 to 62% in 2010–11 (table 8.15). As in previous years, in 2010–11, the employment to population ratio was higher for males than for females (69% compared with 56%), which reflects the higher participation of males in the labour force.

Full-time and part-time employment

Employed people are regarded as either full-time or part-time workers depending on the number of hours worked. Full-time workers are those who:

- usually work 35 hours or more per week in all jobs or
- usually work less than 35 hours a week but

actually worked 35 hours or more during the reference week of the LFS.

Part-time workers are those who usually work less than 35 hours a week and either did so during the reference week, or were not at work during the reference week.

Graph 8.16 shows annual percentage changes in part-time and full-time employment from 1990–91 to 2010–11. The number of both full-time and part-time employed persons increased each year throughout the period except between 1990–91 and 1992–93 and in 2001–02 and 2009–10, when full-time employment decreased. Part-time employment has generally increased at a faster rate than full-time employment over the period. However, in recent periods and financial years (2003–05, 2006–08 and 2010–11), full-time employment grew at a faster rate.

The proportion of employed people who were working part-time was affected by these different rates of change, rising from 22% in 1990–91 to 30% in 2010–11.

Employment growth fluctuates during strong economic growth periods and economic downturns, with different patterns present for full-time and part-time employment. During periods of economic downturn, demand for labour changes, with full-time employment tending to fall and part-time employment tending to grow. This pattern of a decrease in full-time employment being accompanied by growth in part-time employment is shown in graph 8.16 in the early 1990s, 2001–02, and again in the period 2008–10.

In 2010–11, there were 11.4 million employed people, with almost three-quarters (70%) working full-time (table 8.17). Males were more likely than females to work full-time (84% compared with 54%). Part-time work was most prevalent among the younger (15–19 years) and older (65 years and over) age groups (69% and 53% respectively).

8.15 EMPLOYED PERSONS, Employment to population ratio(a)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
	%	%	%	%	%	%	%	%	%	%
Males	67.0	67.2	67.6	68.1	68.6	69.3	69.8	68.9	68.3	69.0
Females	51.5	52.4	52.3	53.3	54.3	55.1	55.8	55.9	55.4	55.8
Persons	59.1	59.7	59.8	60.6	61.4	62.1	62.7	62.3	61.8	62.4

(a) The employment to population ratio for any group is the annual average number of employed persons expressed as a percentage of the annual average civilian population aged 15 years and over in the same group.

Source: *Labour Force, Australia* (6202.0).

8.16 EMPLOYED PERSONS, Change in annual average employment



Source: Labour Force, Australia (6202.0)

8.17 EMPLOYED PERSONS(a), Full-time and part-time workers—2010-11

		AGE GROUP (YEARS)							65 and over	Total
		15-19	20-24	25-34	35-44	45-54	55-59	60-64		
MALES										
Full-time workers	'000	141.6	466.3	1 280.0	1 288.0	1 181.2	451.8	281.0	119.4	5 209.2
Part-time workers	'000	207.2	177.7	150.3	106.9	120.3	66.7	85.0	97.5	1 011.6
Total	'000	348.8	644.0	1 430.3	1 394.9	1 301.5	518.5	366.0	216.9	6 220.8
Proportion of part-time workers	%	59.4	27.6	10.5	7.7	9.2	12.9	23.2	45.0	16.3
FEMALES										
Full-time workers	'000	74.1	329.4	742.5	598.4	675.7	232.8	117.9	34.5	2 805.4
Part-time workers	'000	279.1	244.0	381.0	549.4	490.4	192.2	145.4	79.0	2 360.7
Total	'000	353.3	573.5	1 123.5	1 147.8	1 166.1	424.9	263.4	113.5	5 166.0
Proportion of part-time workers	%	79.0	42.6	33.9	47.9	42.1	45.2	55.2	69.6	45.7
PERSONS										
Full-time workers	'000	215.7	795.8	2 022.5	1 886.4	1 856.8	684.5	398.9	153.9	8 014.5
Part-time workers	'000	486.3	421.7	531.3	656.4	610.7	258.9	230.5	176.5	3 372.3
Total	'000	702.1	1 217.5	2 553.9	2 542.7	2 467.6	943.4	629.3	330.4	11 386.9
Proportion of part-time workers	%	69.3	34.6	20.8	25.8	24.8	27.4	36.6	53.4	29.6

(a) Annual averages.

Source: Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001).

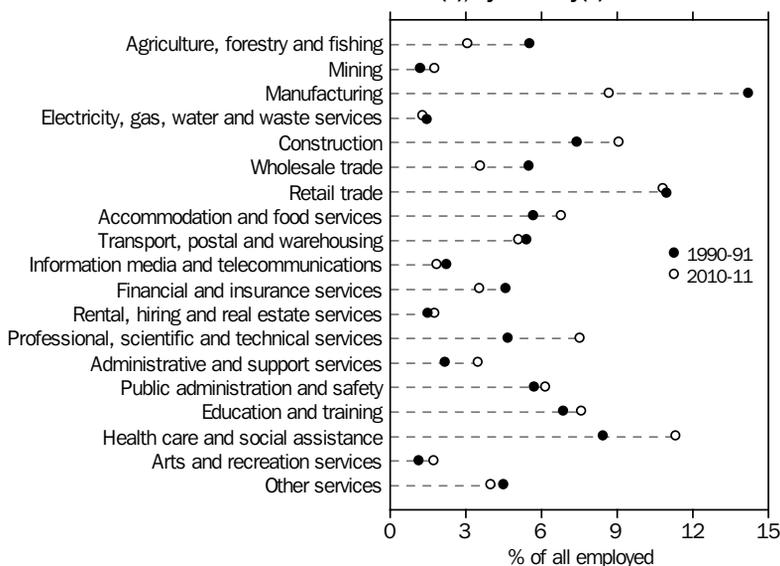
Employment by industry and occupation

The distribution of employed people across industries and occupations, and the changes in these over time, provide an important insight into the structure of the labour market. Graph 8.18 shows the proportion of employed people by industry, for the years 1990-91 and 2010-11.

The industry composition of the labour market has changed considerably over time. Historically, the Manufacturing industry has been the largest

employing industry, but its contribution to the number of employed people has been declining. Over the past two decades, Manufacturing employment fell from 14% of all employed people in 1990-91 to 9% in 2010-11. The share of people employed in the Agriculture, forestry and fishing industry also fell over this period, from 6% to 3%. During the same period, the greatest increase in the share of employed people was in the Professional, scientific and technical services industry (from 5% to 8%), and the Health care and social assistance industry (8% to 11%).

8.18 EMPLOYED PERSONS(a), By industry(b)



(a) Annual average of quarterly data.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) (1292.0).

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

Table 8.19 shows the distribution of employed people across each broad occupation group by age group for 2010–11. The occupation groups with the highest share of employed people were Professionals (22%), with Technicians and trade workers and Clerical and administration workers both 15%. The occupation group with the lowest share of employed people was Machinery operators and drivers (6%).

There is a correlation between age and occupation, with a higher proportion of younger workers employed in the lower-skilled occupations, and a higher proportion of older workers employed in the more highly skilled occupations. For example, only 1% of 15–19 year old workers were employed as Managers and only 2% as Professionals, while at the other end of the age spectrum, for those aged 65 years and over, 26% were employed as Managers and 20% as Professionals. In the 15–19 year age group, 37% of employed people were employed as Sales workers and a further 21% as Labourers. The proportion of 20–24 year olds employed as Sales workers (16%) was considerably lower than the

proportion of 15–19 year olds employed in this occupation group. In contrast, there was a much higher proportion of 20–24 year olds than 15–19 year olds employed as Clerical and administration workers (14% compared with 7%).

The occupation distribution in 2010–11 was markedly different for males and females. Females were more likely than males to be employed as Clerical and administration workers, Community and personal service workers and Sales workers. In contrast, males were more likely than females to be employed as Technicians and trades workers, Labourers and Machinery operators and drivers (graph 8.20). For example, in 2010–11, 24% of males were employed as Technicians and trades workers compared with 4% of females, while 24% of females were employed as Clerical and administrative workers compared with 7% of males. In the more highly skilled occupations, proportionally more males were employed as Managers (15% compared with 10% of females), while proportionally more females were employed as Professionals (25% compared with 19% of males).

8.19 EMPLOYED PERSONS(a), By occupation—2010–11

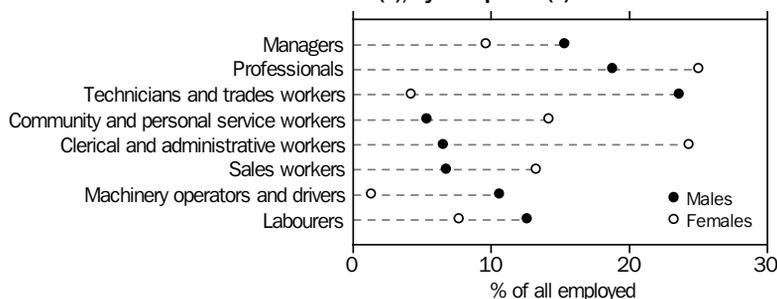
Occupation Group(b)	AGE GROUP (YEARS)								Total
	15–19	20–24	25–34	35–44	45–54	55–59	60–64	65 and over	
Managers	% 1.3	5.0	10.3	15.2	16.0	15.9	16.5	26.1	12.8
Professionals	% 1.9	14.0	26.9	24.4	22.1	22.6	23.0	20.4	21.6
Technicians and trades workers	% 15.2	19.3	16.7	14.7	13.1	13.0	11.4	10.6	14.9
Community and personal service workers	% 13.3	14.7	8.6	8.5	9.2	7.8	7.6	4.8	9.4
Clerical and administrative workers	% 7.4	14.0	14.2	15.3	16.0	16.8	15.0	14.0	14.6
Sales workers	% 37.1	16.5	8.3	6.7	6.2	6.0	6.7	5.6	9.8
Machinery operators and drivers	% 2.6	4.5	6.2	6.3	7.6	8.1	8.6	6.5	6.4
Labourers	% 21.3	12.0	8.8	8.8	9.8	9.7	11.2	12.0	10.4
Persons	'000 692.9	1 205.6	2 552.2	2 538.0	2 465.6	943.0	627.9	329.4	11 354.5
Total	% 100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Annual average of quarterly data.

(b) Classified according to ANZSCO – Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1, 2009 (1220.0).

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

8.20 EMPLOYED PERSONS(a), By occupation(b)—2010–11



(a) Annual average of quarterly data.

(b) Classified according to ANZSCO – Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1, 2009 (1220.0).

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

Characteristics of employment

Working life in Australia continues to change. There are more diverse employment arrangements, greater flexibility in work patterns, and more people working part-time. This section looks at the types of arrangements under which people are employed and the hours they work.

Employment type

Employed people are classified to one of five employment categories on the basis of their main job, that is, the job in which they usually work the most hours. When classifying people by employment type, owner managers of incorporated enterprises are distinguished from other employees. The employment types are:

- employees (excluding owner managers of incorporated enterprises) with paid leave entitlements
- employees (excluding owner managers of incorporated enterprises) without paid leave entitlements (a proxy for casual employment)
- owner managers of incorporated enterprises
- owner managers of unincorporated enterprises and
- contributing family workers.

For more details see the article *Employment classifications* in *Australian Labour Market Statistics, July 2011* (6105.0).

Table 8.21 shows the proportion of employed people (excluding contributing family workers) by employment type. Of the 11.3 million employed people at November 2010, over three-fifths (62%) were employees with paid leave entitlements and 20% were employees without paid leave entitlements. A further 11% were owner managers of unincorporated enterprises and 7% were owner managers of incorporated enterprises.

The proportion of employed people who worked as employees with paid leave entitlements was similar for males and females (61% and 63% respectively). However, a higher proportion of females were employees without paid leave entitlements than males (24% and 16% respectively) reflecting the fact that females are more likely to work part-time than males, and

that part-time work is more closely associated with casual employment. A higher proportion of males were owner managers compared with females (23% and 13% respectively).

The proportion of employees with paid leave entitlements remained relatively stable between 1996 and 2010, at between 60% to 62% of all employed persons (graph 8.22). The proportion of employees without paid leave entitlements also remained stable between 1996 and 2010, at around 20% of all employed persons. As a proportion of total employment, owner managers remained fairly stable between 1996 and 2010. However, the proportion of all owner managers who were working in an incorporated business increased, from 30% of all owner managers in 1996 to 38% in 2010.

8.21 EMPLOYED PERSONS(a), By employment type—November 2010

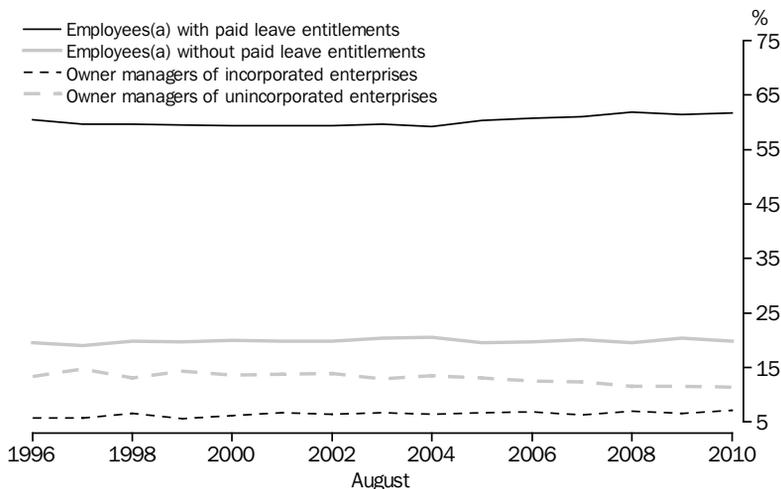
	Employees(b) with paid leave entitlements %	Employees(b) without paid leave entitlements %	Owner managers of incorporated enterprises %	Owner managers of unincorporated enterprises %	Total '000
Males	60.8	16.2	9.3	13.7	6 192.4
Females	62.7	24.2	4.5	8.6	5 130.9
Persons	61.7	19.8	7.1	11.4	11 323.2

(a) Excludes persons who were contributing family workers in their main job.

(b) Excluding owner managers of incorporated enterprises.

Source: *Forms of Employment, Australia, November 2010* (6359.0).

8.22 TYPES OF EMPLOYMENT, Proportion of employed



(a) Excluding owner managers of incorporated enterprises.

Source: *Australian Labour Market Statistics, Datacubes, Employment Type 1992-2010* (6105.0).

Hours worked

Hours worked statistics have a wide range of uses, including the calculation of labour productivity and monitoring of working conditions.

Information on hours worked allows the ABS to classify employed people as full-time or part-time, and also to identify underemployed people (in conjunction with information about wanting to work more hours).

The LFS collects weekly hours worked data for employed people on three different bases:

- Actual hours worked in all jobs – hours actually worked in the survey reference week, including overtime hours and excluding time off
- Actual hours worked in main job – hours actually worked in the survey reference week (including overtime hours and excluding any time off) in the job in which the most hours are usually worked
- Usual hours worked in all jobs – hours usually worked per week by an employed person.

Data for the last two measures are available from April 2001, while the first measure has been collected since the LFS began in the 1960s.

In addition to the three reference week measures outlined above, the ABS also produces an aggregate monthly hours worked series, which estimates the total number of actual hours worked by employed persons in a calendar month.

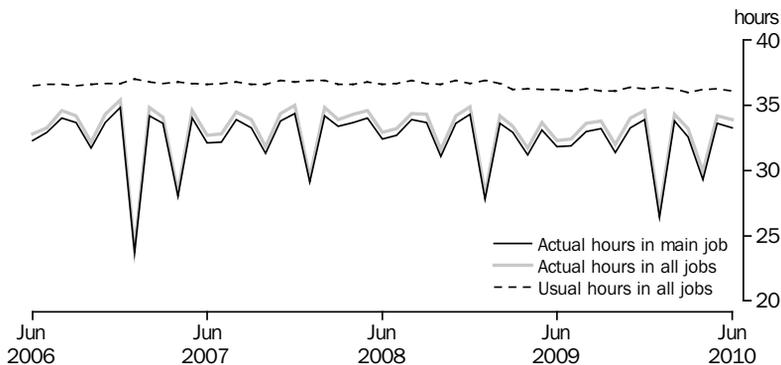
Graph 8.23 shows average weekly hours worked for employed people for each of the three measures. Average weekly hours worked is the hours worked by employed people during the reference week divided by the number of employed people.

The two ‘average weekly hours actually worked’ measures are influenced by seasonal factors (e.g. leave being taken at particular times of the year), economic factors (e.g. cuts to hours due to decreased demand), and other absences from work due to public holidays, sickness, irregular shifts, etc. Large movements occur around the months of January, April and October. The ‘average weekly hours worked in main job’ series closely follows the ‘average weekly hours worked in all jobs’ series, but at a slightly lower level. This indicates that the number of hours worked in second and subsequent jobs, averaged across all employed people, is relatively small.

Average weekly hours usually worked in all jobs exhibits much lower levels of variability. This is because the usual hours worked series is less affected by seasonal factors and not affected by absences from work that lead to fluctuations in the actual hours worked series.

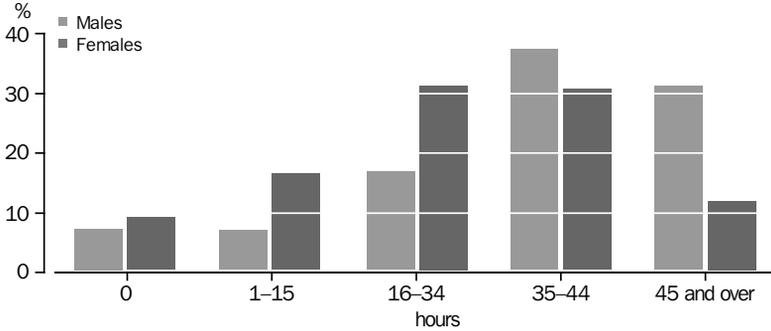
In 2010–11, more than a third (37%) of employed males worked between 35 and 44 hours per week, and a further 31% worked 45 hours or more per week (graph 8.24). Females were most likely to have worked between 35 and 44 hours per week or between 16 and 34 hours (at 31% each). Females who worked 45 hours or more per week made up 12% of all employed females.

8.23 EMPLOYED PERSONS, Average weekly hours worked



Source: Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001).

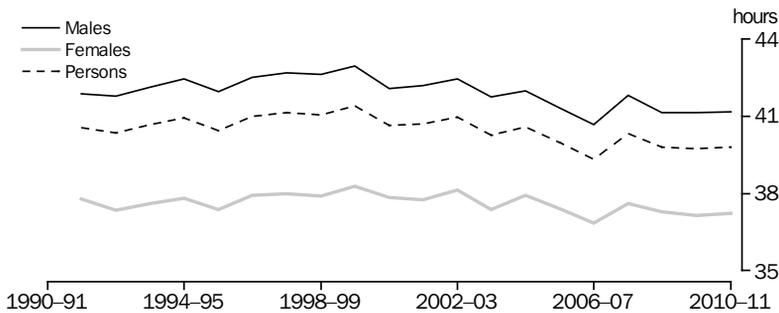
8.24 EMPLOYED PERSONS(a), Actual hours worked in all jobs—2010–11



(a) Includes employed persons who were away from work during the survey reference week.

Source: *Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001)*.

8.25 AVERAGE WEEKLY ACTUAL HOURS WORKED(a), Full-time employed persons(b)



(a) Annual averages.

(b) Includes employed persons who were away from work during the survey reference week.

Source: *Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001)*.

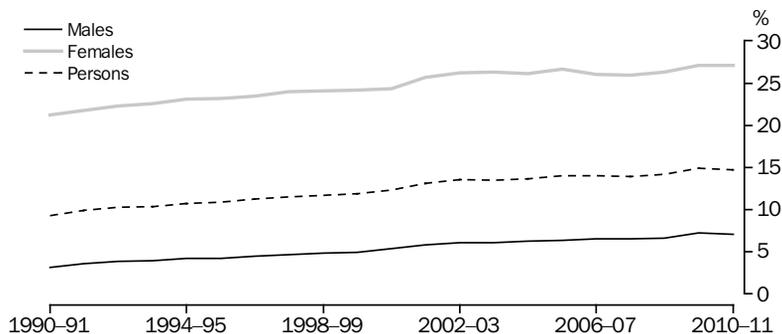
Average weekly hours actually worked by full-time employed people rose from 40.6 hours in 1991–92 to a peak of 41.4 hours in 1999–2000, an increase of 2% (graph 8.25). Since 2008–09, full-time employed people worked an average of 39.8 hours per week. Full-time employed males worked an average of 41.2 hours per week in 2010–11, while full-time employed females worked an average of 37.2 hours per week.

From 1990–91 to 2010–11, there was a steady increase in the number of hours actually worked by part-time workers as a proportion of the total number of hours actually worked (graph 8.26). In 1990–91, 9% of all hours actually worked were by those in part-time employment; by 2010–11 this proportion had risen to 15%. For males, 7% of

the total number of hours actually worked were by those in part-time employment in 2010–11, whereas for females, the proportion was 27%.

Graph 8.27 shows average weekly hours usually worked in all jobs, by occupation, for full-time employed people. In 2010–11, Managers had the highest average weekly usual hours worked for full-time employed people (50.2 hours per week for males and 45.5 hours per week for females), followed by Machinery operators and drivers (46.2 hours and 41.6 hours respectively). The occupation with the lowest average weekly hours usually worked for full-time employed people was Clerical and administrative workers (42.1 hours per week for males and 39.6 hours per week for females).

8.26 PART-TIME HOURS AS A PROPORTION OF TOTAL ACTUAL HOURS WORKED(a)



(a) Annual averages.

Source: *Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001)*.

In 2009, the ABS released a new hours worked series, ‘aggregate monthly hours worked’, which estimates the total number of actual hours worked by all employed persons in a calendar month. This series differs from the actual and usual hours worked series above since those series relate only to the hours worked in the reference week whereas aggregate monthly hours worked aims to account for the entire calendar month. Aggregate monthly hours worked is available as both seasonally adjusted and trend series. This allows for comparison between months, with the estimates having been adjusted for seasonality and the effects of holidays.

Actual and usual hours worked cannot be aggregated across time to produce either quarterly or annual estimates as they related to only a single week in the month. Therefore, the annual data presented in graphs 8.25 to 8.27 are annual averages. In contrast, aggregate monthly hours worked estimates represent the full calendar month, which can be aggregated across time to produce annual estimates.

The annual trend estimate of aggregate hours worked has generally increased since 1988–89. The only exception has been in the economic downturn in the early 1990s. Aggregate hours

8.27 AVERAGE WEEKLY HOURS USUALLY WORKED(a), Full-time employed persons by occupation(b)—2010-11

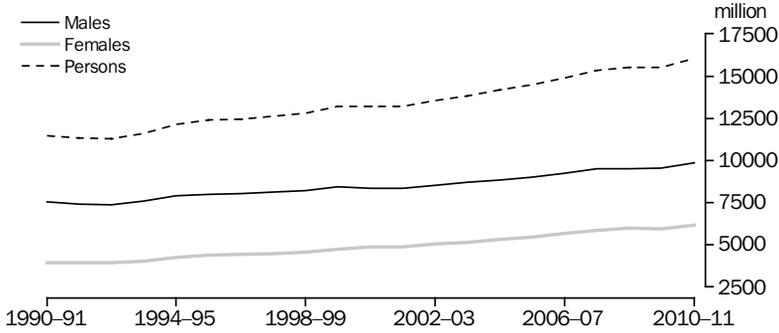


(a) Annual average of quarterly data.

(b) Classified according to ANZSCO – Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1, 2009 (1220.0).

Source: *ABS data available on request, Labour Force Survey*.

8.28 AGGREGATE HOURS WORKED(a)



(a) Calculated from trend estimates of aggregate monthly hours worked.

Source: *Labour Force, Australia* (6202.0).

worked increased from 11,305 million hours in 1992–93 to 16,023 million hours in 2010–11. In 2010–11, males worked 9,867 million hours (62% of all hours worked), while females worked 6,149 million hours (graph 8.28).

Unemployed people

In the monthly Labour Force Survey (LFS), people aged 15 years and over are classified as unemployed if they satisfy three criteria: they are not employed, they are available to start work and they are taking active steps to find work.

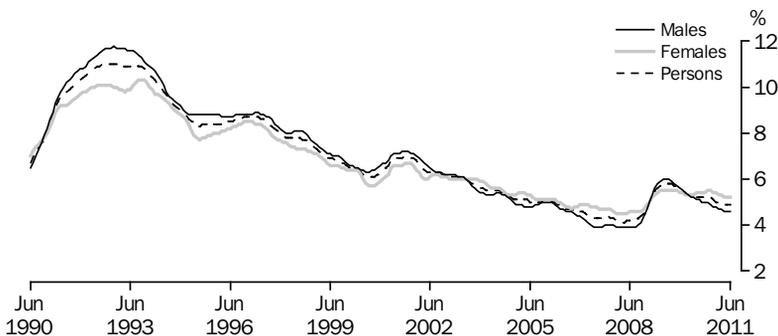
Two important measures of unemployment are the number of people unemployed and the unemployment rate. The unemployment rate, defined as the number of unemployed people

expressed as a percentage of the labour force, offers an insight into the level of unutilised labour resources within the economy.

Movements in the unemployment rate over the last 20 years have been dominated by the economic downturn of the early 1990s, the subsequent period of economic recovery and the more recent global financial crisis. In trend terms, the unemployment rate peaked at 11% in October 1992, before generally falling from the mid 1990s to 4.1% in March 2008. Since then, the unemployment rate had a steady increase to 5.8% in July 2009 followed by a steady decrease to 4.9% in March 2011 (graph 8.29).

For much of the period from June 1990 to June 2011, the male unemployment rate was higher than the female unemployment rate. However,

8.29 UNEMPLOYMENT RATE(a)



(a) Trend estimates.

Source: *Labour Force, Australia* (6202.0).

from August 2003 to December 2008, the female rate was higher than the male rate. In January 2009 and March 2010, the rates were the same for both males and females.

In conjunction with the decline in the unemployment rate, the number of unemployed people has generally fallen from the levels recorded in the early 1990s.

Over the past five years, the proportion of unemployed people who have been in long-term unemployment (i.e. lasting 52 weeks or more) has increased, from 17% in 2006–07 to 19% in 2010–11 and was lowest at 14% in 2008–09 (table 8.30). In contrast, the proportion of unemployed people who have been in relatively short-term unemployment (i.e. lasting less than 26 weeks) increased from 71% in 2006–07 to 74% in 2008–09, then decreased to 67% in 2010–11.

Educational qualifications can have a significant bearing on labour market prospects. Table 8.31

shows the relationship between the level of highest non-school qualifications and the duration of unemployment. At July 2010, the proportion of unemployed people who had been unemployed for a year or more was highest among those whose highest non-school qualification was a Certificate I/ II (26%) and lowest among those with a Bachelor degree or higher (13%).

Unemployed people encounter a variety of difficulties in finding work. Among both males and females, the most commonly reported main difficulty in finding work was 'Too many applicants' (16% for both). Females were more likely than males to report 'Unsuitable hours' as their main difficulty (10% compared with 3%) and 'Difficulties with child care/family' (3% compared with 1%) (graph 8.32). Males were more likely than females to report their main difficulty as 'No vacancies in line of work' (11% compared with 6%), 'Too far to travel/transport problems' (9% compared with 7%) and 'Own ill health or disability' (9% compared with 8%).

8.30 UNEMPLOYED PERSONS(a), By duration of unemployment

Weeks		2006-07	2007-08	2008-09	2009-10	2010-11
Under 26	%	70.8	73.3	73.7	66.9	67.4
Under 13	%	55.3	57.9	56.2	50.0	51.1
13 to under 26	%	15.5	15.5	17.5	16.9	16.2
26 to under 52	%	12.4	11.7	12.4	16.1	13.4
52 and over	%	16.8	15.0	13.9	16.9	19.2
52 to under 104	%	7.7	7.4	7.4	9.8	10.5
104 and over	%	9.1	7.6	6.5	7.1	8.7
Persons	'000	493.8	475.5	570.5	640.9	606.9

(a) Annual averages.

Source: *Labour Force, Australia, Detailed – Electronic Delivery* (6291.0.55.001).

8.31 UNEMPLOYED PERSONS, Level of highest non-school qualification and duration of unemployment—July 2010

	DURATION OF CURRENT PERIOD OF UNEMPLOYMENT (WEEKS)					Total	'000
	Under 8	8 to 26		52 and over	%		
		under 26	under 52				
Level of highest non-school qualification(a)	%	%	%	%	%		
Bachelor degree or above	41.2	32.2	13.6	13.0	100.0	76.2	
Advanced diploma / Diploma	47.5	28.6	8.1	15.8	100.0	38.4	
Certificate III / IV	34.1	34.0	14.6	17.4	100.0	90.3	
Certificate I / II(b)	21.4	29.9	23.0	25.7	100.0	43.4	
Without non-school qualification	36.8	28.8	15.4	19.0	100.0	323.8	
Total(c)	36.7	30.0	14.9	18.4	100.0	578.7	

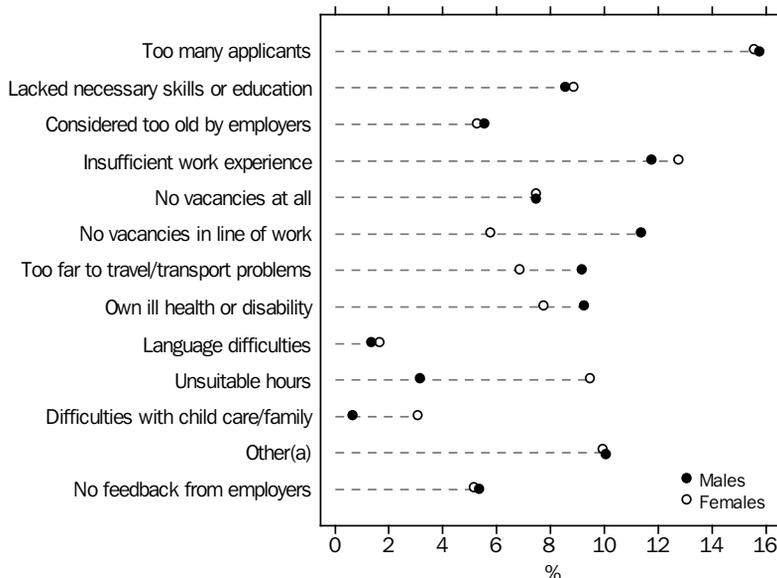
(a) For further details on how level of highest non-school qualification is determined, see Education and Work, Australia (6227.0).

(b) Includes 'Certificate not further defined'.

(c) Includes 'Level not determined'.

Source: *Job Search Experience, Australia* (6222.0).

8.32 UNEMPLOYED PERSONS, Main difficulty in finding work—July 2010



(a) Other includes considered too young by employer, difficulties because of ethnic background and other difficulties.

Source: *Job Search Experience, Australia (6222.0)*.

Underutilised labour

The extent to which the available supply of labour is utilised is an important social and economic issue. From a social viewpoint, concern centres around the number of people whose aspirations for work are not being met. From an economic perspective, there is interest in measuring the amount of spare capacity in the labour force for future labour supply and its potential to contribute to the production of goods and services.

Measures such as the unemployment rate and long-term unemployment rate do not reflect the full extent of labour underutilisation. As a result, the ABS also produces labour underutilisation measures based on the number of people whose labour is underutilised (headcount measures), and the number of hours of available labour that are underutilised (volume measures). These measures take into account groups of people such as underemployed workers and discouraged jobseekers.

Headcount measures of labour underutilisation

The ABS has produced three supplementary measures of labour underutilisation, in addition to the unemployment rate:

Underemployment rate – the number of underemployed workers as a proportion of the labour force. Underemployed people comprise part-time workers who would prefer more hours, and are available to work more hours, and full-time workers who worked part-time hours in the reference week for economic reasons. This rate is produced quarterly.

Labour force underutilisation rate – the sum of the unemployed and the underemployed (the underutilised population), expressed as a proportion of the labour force. This rate is also produced quarterly.

Extended labour force underutilisation rate – the sum of the unemployed, the underemployed, and two groups of people marginally attached to the labour force, as a proportion of the labour force

augmented by those two groups. The two groups of marginally attached people are: people actively looking for work, not available to start work in the reference week, but available to start within four weeks; and discouraged jobseekers. This is the broadest of the ABS measures of underutilised labour. This rate can only be produced annually.

Table 8.33 shows that there were 810,900 underemployed people in August 2011. The underemployment rate was higher for females than males (9% and 5% respectively). This in part reflects the higher proportion of females who are in part-time employment.

In August 2010, the extended labour force underutilisation rate was 13%. The extended labour force underutilisation rate was higher for females than males (16% compared with 11%),

not only because females had a higher rate of underemployment, but also because females were more likely to be in the marginally attached populations that contribute to this rate.

Historically, movements in unemployment have been the primary drivers of movement in headcount measures, reflecting additional labour supply. However, underemployment has been steadily increasing in relative importance to the available resources that are not being utilised in the economy. Graph 8.34 shows that the underemployment rate has been consistently higher than the unemployment rate since 2000. Historically, the largest difference between the rates was in 1993, with underemployment at 6.8% and unemployment at 10.7%. More recently, the largest difference between the rates was in 2010, with underemployment at 7.2%

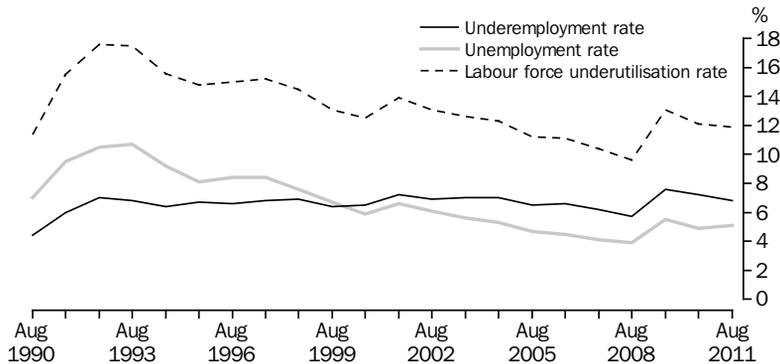
8.33 LABOUR UNDERUTILISATION

		Period	Males	Females	Persons
Unemployed	'000	Aug 11	329.7	280.0	609.7
Long-term unemployed	'000	Aug 11	68.4	56.7	125.1
Underemployed	'000	Aug 11	331.3	479.6	810.9
Marginally attached to the labour force(a)	'000	Aug 10	66.3	91.7	157.9
Labour underutilisation rates					
Unemployment rate	%	Aug 11	5.1	5.1	5.1
Long-term unemployment rate	%	Aug 11	1.1	1.0	1.0
Underemployment rate	%	Aug 11	5.1	8.8	6.8
Labour force underutilisation rate	%	Aug 11	10.2	13.9	11.9
Extended labour force underutilisation rate	%	Aug 10	11.3	15.6	13.2

(a) Includes only a subset of marginally attached groups (those who wanted to work but were not actively looking for work and were available to start work within four weeks).

Source: Australian Labour Market Statistics (6105.0); Labour Force, Australia (6202.0); Labour Force, Australia, Detailed – Electronic Delivery (6291.0.55.001).

8.34 LABOUR UNDERUTILISATION RATES



Source: Labour Force, Australia (6202.0)

and unemployment at 4.9%. The labour force underutilisation rate was highest in 1992 (17.6%) and lowest in 2008 (9.6%).

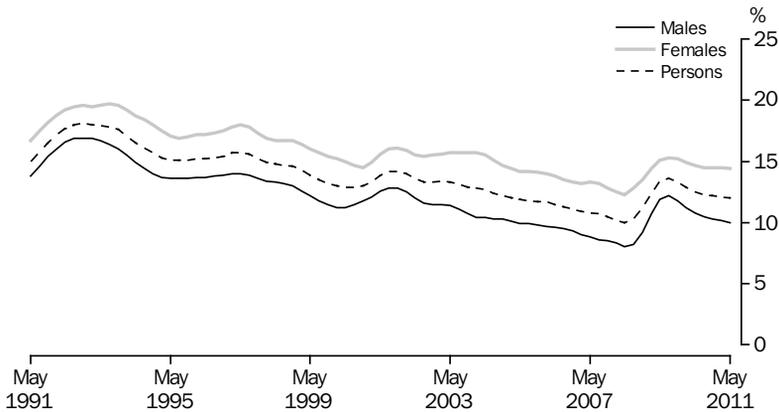
The trend historical labour force underutilisation rate shows a number of periods in which underutilisation has been an increasing or decreasing concern for the labour market, and these closely align with the peaks and troughs of the economic cycle. Graph 8.35 shows the relatively steep increase in the early 1990s, and a sharp increase from May 2008 to May 2009.

Since May 1991, the underutilisation rate for females has been consistently higher than for males. The difference was most pronounced

in the February quarter 2004, with a difference of 5.3 percentage points (16% for females and 10% for males), and least pronounced in August 1992 and February 1993, with a difference of 2.6 percentage points for these quarters.

The labour force underutilisation rate decreases with age. As seen in graph 8.36, in August 2010, 15–19 year olds had the highest underutilisation rate (29% for males and 34% for females), followed by 20–24 year olds (18% and 19%). The lowest rate was for people aged 65 and over (5% for both males and females), a pattern reflected in both the unemployment rate and the underemployment rate. The underutilisation rate was higher for females than for males in all age groups.

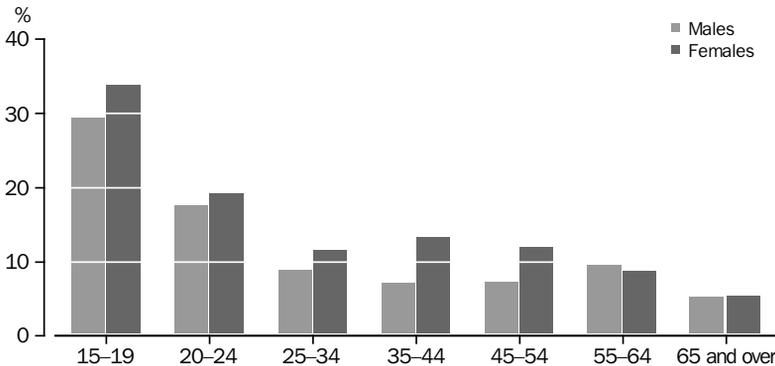
8.35 LABOUR FORCE UNDERUTILISATION RATE(a), By sex



(a) Trend estimates. Series break at May 2001.

Source: *Labour Force, Australia* (6202.0).

8.36 LABOUR FORCE UNDERUTILISATION RATE, By age and sex—August 2010



Source: *Australian Labour Market Statistics* (6105.0).

Volume measures of labour force underutilisation

Labour underutilisation can also be measured in terms of the number of potential hours of labour that are not used. The volume of underutilised labour in the labour force is defined as the number of hours sought by unemployed people plus the preferred number of additional hours of work of underemployed workers. The volume labour force underutilisation rate is the ratio of unutilised hours to the total number of utilised and unutilised hours in the labour force. This rate is produced annually.

Table 8.37 shows volume measures of labour force underutilisation for August 2010. For all three underutilisation measures (i.e. unemployment, underemployment and labour force underutilisation), the volume measures are usually lower than headcount measures, as the average number of potential extra hours of unemployed or underemployed people is generally less than the average hours actually worked by employed people.

In August 2010, the hours sought by unemployed people (18.4 million hours) formed the largest component of the volume of underutilised labour in the labour force (60%), while additional hours preferred by the underemployed formed the remainder (12.3 million hours or 40% of the volume of underutilised labour).

Persons not in the labour force

Persons not in the labour force represent that group of the population who, during the reference week of the ABS monthly Labour Force Survey (LFS), are neither employed nor unemployed (see diagram 8.2). Interest in this group from a labour market perspective centres primarily on their potential to participate in the labour force, and their reasons for not being in the labour force at a given point in time.

There were 5.9 million people aged 15 years and over not in the labour force at September 2010 (table 8.38). Nearly one-sixth (16%) of people outside the labour force (925,900) were marginally attached to the labour force. These people wanted to work and were either actively looking for work but were not available to start work in the reference week, or were not actively looking, but available to start work (in the reference week or within four weeks). Of people not in the labour force, a similar proportion of females were marginally attached compared with males (16% and 15% respectively). Of those marginally attached, a higher proportion of males were actively looking for work compared with females (9% and 7%).

In September 2010, there were 102,100 discouraged jobseekers. Discouraged jobseekers are people who are marginally attached to the labour force, want to work and are available to

8.37 VOLUME MEASURES OF LABOUR UNDERUTILISATION(a)—August 2010

		Males	Females	Persons
Volume of potential labour in the labour force				
Unemployed persons (hours of work sought)	million hours	10.3	8.0	18.4
Underemployed workers (additional hours of work preferred)	million hours	6.0	6.2	12.3
Employed persons (usual hours of work)(b)	million hours	250.9	157.4	408.3
Total(c)	million hours	267.3	171.7	438.9
Volume measures of labour force underutilisation				
Volume unemployment rate	%	3.9	4.7	4.2
Volume underemployment rate	%	2.3	3.6	2.8
Volume labour force underutilisation rate	%	6.1	8.3	7.0

(a) Volume measures estimates, based on the number of hours of work sought.

(b) Actual hours worked in the reference week for underemployed full-time workers and usual hours worked for all other employed persons.

(c) The volume of potential labour in the labour force is equal to the hours of labour sought by unemployed persons, plus the hours of labour preferred by underemployed workers (both utilised and unutilised), plus the hours of labour usually provided by employed persons who are not underemployed.

Source: Australian Labour Market Statistics (6105.0).

start work, but are not actively looking for work as they believe they will not find a job for labour market related reasons, such as 'No jobs in locality or line of work', 'Considered too old by employers' or 'Lacked the necessary schooling, training, skills or experience'. Of those males and females who were marginally attached to the labour force, 11% were discouraged jobseekers.

For those persons not in the labour force in September 2010, males were more likely to cite 'Personal reasons' as their main reason for not actively looking for work (61% of males compared to 34% of females), while females were more likely to cite 'Family reasons' (42% of females compared to 6% of males) (table 8.39). The most commonly reported main reason for not actively looking

8.38 LABOUR FORCE STATUS(a)—September 2010

	Males '000	Females '000	Persons '000
Civilian population aged 15 years and over	8 865.5	9 022.2	17 887.7
Persons in the labour force	6 546.7	5 460.3	12 007.0
Employed	6 220.9	5 176.9	11 397.7
Unemployed	325.8	283.4	609.2
Persons not in the labour force	2 318.8	3 561.9	5 880.7
With marginal attachment to the labour force	349.4	576.4	925.9
Wanted to work and were actively looking for work	32.9	41.9	74.9
Were available to start work within four weeks	23.1	30.2	53.2
Were not available to start work within four weeks	9.9	11.8	21.7
Wanted to work but were not actively looking for work and were available to start work within four weeks	316.5	534.5	851.0
Discouraged jobseekers	39.9	62.3	102.1
Other	276.6	472.3	748.9
Without marginal attachment to the labour force	1 969.3	2 985.5	4 954.8
Wanted to work but were not actively looking for work and were not available to start work within four weeks	126.6	239.9	366.5
Did not want to work	1 637.5	2 562.0	4 199.5
Permanently unable to work	205.3	183.5	388.8

(a) Civilian population aged 15 years and over.

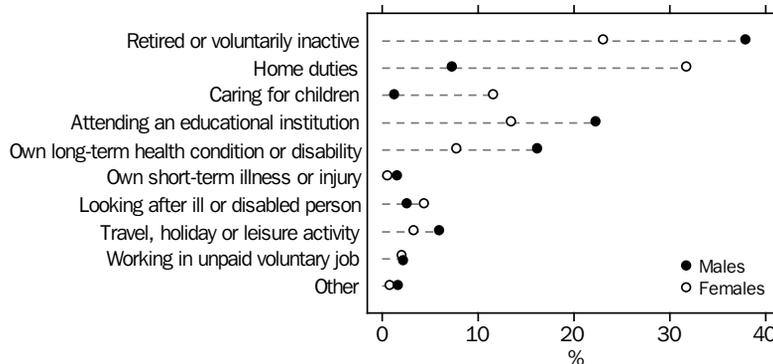
Source: *Persons Not in the Labour Force, Australia (6220.0)*.

8.39 SELECTED MAIN REASON NOT ACTIVELY LOOKING FOR WORK—September 2010

	Males %	Females %	Persons %
Wanted to work but were not actively looking for work and were available to start work within four weeks			
Discouraged jobseekers	12.6	11.6	12.0
Lacked the necessary schooling, training, skills or experience	1.4	2.6	2.1
No jobs in locality or line of work	2.1	1.9	2.0
Considered too old by employers	6.2	3.6	4.6
Other reasons	87.4	88.4	88.0
Personal reasons	60.6	34.0	43.9
Own short-term illness or injury	3.9	2.6	3.1
Own long-term health condition or disability	15.5	5.2	9.0
Attending an educational institution	32.6	17.9	23.4
Other personal reasons	8.6	7.8	8.1
Had no need to work	5.7	4.3	4.8
Moved house or holidays	2.4	2.1	2.2
Family reasons	5.6	42.1	28.5
Ill health of other than self	1.5	3.7	2.9
Caring for children	2.7	29.8	19.7
Other family considerations	1.4	8.5	5.8
Other reasons	10.7	5.6	7.5
Had a job to go to	9.3	5.7	7.0

Source: *Persons Not in the Labour Force, Australia (6220.0)*.

8.40 MAIN ACTIVITY WHEN NOT IN THE LABOUR FORCE—September 2010



Source: *Persons Not in the Labour Force, Australia (6220.0)*

for work for males was 'Attending an educational institution' (33% compared to 18% of females), followed by 'Own long-term health condition or disability' (16%). The most commonly reported main reason for not actively looking for work for females was 'Caring for children' (30% compared to 3% of males), followed by 'Attending an educational institution' (18%).

The main activity for people when not in the labour force also differed between males and females. The most commonly reported main activity for males was 'Retired or voluntarily inactive' and 'Attending an educational institution' (38% and 22% respectively), whereas for females the main activity when not in the labour force was 'Home duties' and 'Retired or voluntarily inactive' (32% and 23% respectively) (graph 8.40).

Earnings

Information on earnings is used to help evaluate the standard of living of employees and to make policy decisions regarding income redistribution, social welfare, taxation and wage setting. Such information also provides indicators of overall economic performance.

The ABS concept of earnings is based on the definition adopted by the twelfth International Conference of Labour Statisticians in 1973. Earnings refers to remuneration to employees for time worked or work done, as well as remuneration for time not worked (e.g. paid annual leave).

The ABS produces a range of statistics on earnings paid to employees. The regular Survey of Average Weekly Earnings (AWE) and the two-yearly Survey of Employee Earnings and Hours (EEH), both business surveys, provide a number of statistical measures of the remuneration paid to employees. The EEH survey also provides estimates of earnings for employees covered by each of the pay-setting methods (i.e. awards, collective agreements and individual arrangements). Information regarding pay-setting methods is available in the Workplace relations section of this chapter. The household Survey of Employee Earnings, Benefits and Trade Union Membership (EEBTUM), which is conducted each August as a supplement to the monthly Labour Force Survey, also provides information about the earnings of employees.

The quarterly labour price index (LPI) measures changes in wages and salaries, and other 'non-wage' components that contribute to the cost of employing labour (i.e. annual leave, superannuation, payroll tax and workers' compensation). Unlike earnings measures produced from the AWE or EEH surveys, the LPI measures changes in the price of labour and is unaffected by changes in the quality or quantity of work performed, that is, it is unaffected by changes in the composition of the labour force, hours worked, or changes in characteristics of employees (e.g. work performance). The LPI consists of two components: a wage price index, published quarterly and a non-wage price index, which is available for each financial year. Information regarding the LPI is available in chapter 29 *Prices*.

Level of earnings

Data on the level of earnings reflect the variations between population groups, and across industries and occupations. Changes in the level of earnings are also of interest in reflecting the strength of labour demand and supply.

The AWE survey provides an estimate of the average gross weekly earnings paid to employees by measuring earnings during a one-week reference period in the middle month of a quarter (excluding irregular payments not related to the reference period). Data are collected from the payroll records of a sample of employers.

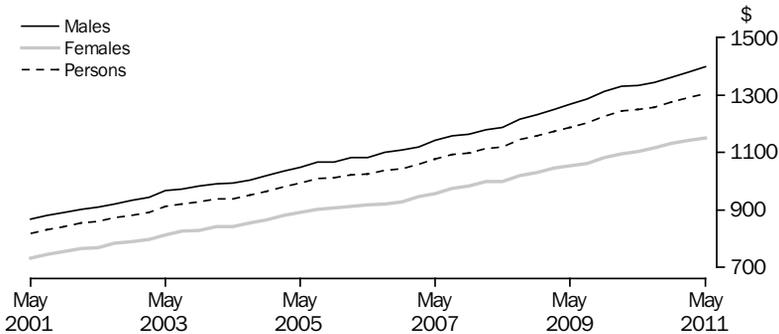
The AWE survey provides four types of earnings measures. The first is average weekly ordinary time earnings (commonly referred to as AWOTE) for full-time adult employees, which relates to that part of total earnings attributable to award, standard or agreed hours of work. A second measure is full-time adult total earnings, which includes both ordinary time and overtime pay. A third measure is total earnings for all employees (including full-time and part-time, adult and junior). A fourth measure, which was

introduced in August 2011 for the reference periods from May 2010 onward, is the average weekly cash earnings series, which is a series of earnings inclusive of amounts salary-sacrificed. For more information on the AWE survey, see *Labour Statistics: Concepts, Sources and Methods* (6102.0.55.001).

Graph 8.41 shows AWOTE from May 2001 to May 2011. Over the 10-year period, AWOTE for full-time adult male employees increased from \$867 to \$1,398 (or 61%), while for full-time adult female employees it increased from \$733 to \$1,150 (or 57%).

In May 2011, male average weekly ordinary time earnings for full-time adult employees (AWOTE) was \$1,398 and for females was \$1,150. For all employee total earnings, males earned \$1,237 and females earned \$796 (table 8.42). The difference between male and females total earnings reflects the inclusion of part-time employees (a higher proportion of female employees work part-time) and the inclusion of overtime pay (of which males earn more than females). In May 2011, 46% of female employees worked part-time compared with 16% of male employees.

8.41 AVERAGE WEEKLY ORDINARY TIME EARNINGS(a)



(a) For full-time adult employees.

Source: Average Weekly Earnings, Australia (6302.0).

8.42 AVERAGE WEEKLY EARNINGS—May 2011

	Males	Females	Persons
	\$	\$	\$
Full-time adult ordinary time earnings	1 397.70	1 150.20	1 304.70
Full-time adult total earnings	1 472.80	1 167.10	1 357.90
All employees total earnings	1 236.50	795.90	1 015.20

Source: Average Weekly Earnings, Australia (6302.0).

Table 8.43 presents AWOTE for full-time adult males and females by states and territories in May 2011. The highest weekly earnings were in Western Australia for males (\$1,633) and in the Australian Capital Territory for females (\$1,394). The lowest weekly earnings were in Tasmania for males (\$1,194) and in South Australia for females (\$1,051).

In May 2011, the Mining industry recorded the highest AWOTE for full-time adults (\$2,181 for males and \$1,723 for females) (graph 8.44). The

industries with the lowest AWOTE for full-time males were Retail trade and Accommodation and food services (\$964 and \$979 respectively) and Accommodation and food services and Retail trade (\$858 and \$907 respectively) for females.

AWOTE for full-time adult females was less than for males in all industries. The largest difference between the earnings of full-time adult males and females occurred in Financial and insurance services and the smallest in Retail trade.

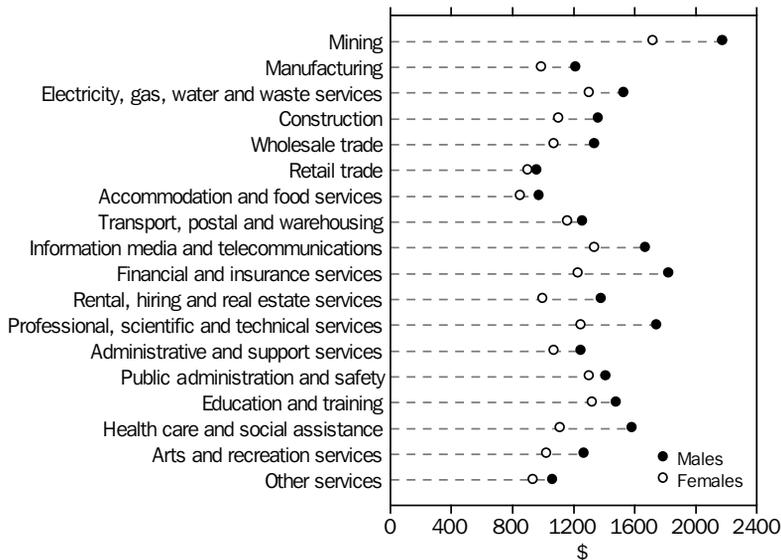
8.43 AVERAGE WEEKLY EARNINGS(a), By state and territory—May 2011

	Males	Females	Persons
	\$	\$	\$
New South Wales	1 400.10	1 195.10	1 322.20
Victoria	1 342.30	1 113.70	1 255.60
Queensland	1 370.30	1 117.20	1 274.40
South Australia	1 261.50	1 051.00	1 184.20
Western Australia	1 632.60	1 171.70	1 474.10
Tasmania	1 193.80	1 060.50	1 149.80
Northern Territory	1 385.10	1 166.90	1 289.30
Australian Capital Territory	1 570.00	1 393.90	1 494.30
Australia	1 397.70	1 150.20	1 304.70

(a) Full-time adult ordinary time earnings.

Source: *Average Weekly Earnings, Australia* (6302.0).

8.44 AVERAGE WEEKLY ORDINARY TIME EARNINGS(a), By industry(b)—May 2011



(a) For full-time adult employees.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) (1292.0).

Source: *Average Weekly Earnings, Australia* (6302.0).

Data on earnings are also available from the EEH survey. This survey provides additional information on employee characteristics such as occupation. Average weekly ordinary time cash earnings (including amounts salary sacrificed) for full-time adult employees by occupation for May 2010 are shown in graph 8.45. For both males and females, Labourers recorded the lowest average weekly ordinary time cash earnings of all the occupation groups (\$934 for males and \$773 for females). The occupation group with the highest weekly earnings was Managers (\$2,026 for males and \$1,705 for females).

Males had higher average weekly ordinary time cash earnings than females in each major occupation group. For full-time adult employees, the proportional difference between average weekly ordinary time cash earnings for males and females was smallest for Machinery operators and drivers (average earnings of females were 88% of those of males) and greatest for Technicians and trade workers (female average earnings 79% of male).

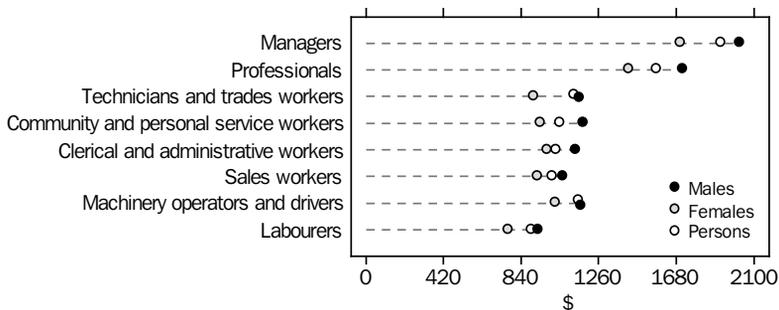
In addition to data on earnings, the EEH survey collects information on hours worked. This enables the calculation of hourly measures of earnings, which are more informative for making gender comparisons. Hourly earnings measures are not influenced by differences in the weekly hours worked by males and females. The EEH

survey provides estimates of earnings and hours worked for a sample of employees. This makes it possible to examine the distribution of hourly earnings as well as estimate the median, which is a useful measure of 'typical' hourly earnings. The median non-managerial adult hourly ordinary time cash earnings in May 2010 was \$25.50. Median hourly earnings for females was 93% of the male figure (\$24.70 compared to \$26.70, respectively). From May 2008 to May 2010, female median hourly earnings increased by 7.0%, whereas male median hourly earnings increased by 4.6% over the same period.

The Survey of Employee Earnings, Benefits and Trade Union Membership also provides data on average weekly earnings, and as it is a household survey, a range of socio-demographic characteristics are also available.

In August 2010, average weekly earnings of full-time workers were more than double that of part-time workers across all age groups. Full-time workers earned, on average, \$1,267 per week in all jobs, compared with \$468 for part-time workers. Workers with the lowest average weekly earnings were those aged 15–19 years (\$559 for full-time workers and \$172 for part-time workers) while those with the highest average weekly earnings were aged 35–44 years (\$1,440 for full-time workers and \$594 for part-time workers) (graph 8.46).

8.45 AVERAGE WEEKLY ORDINARY TIME CASH EARNINGS(a), By occupation(b)—May 2010

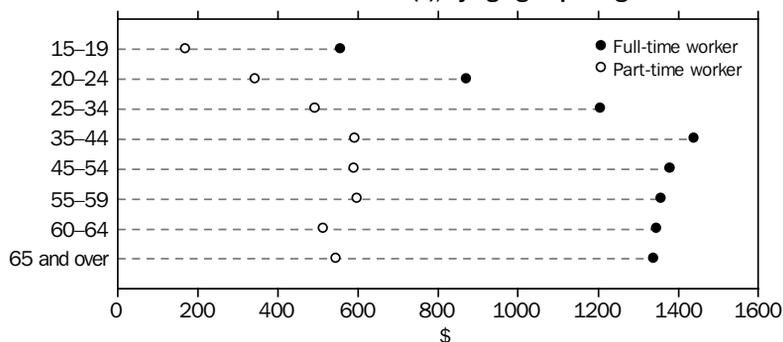


(a) For full-time adult employees.

(b) Classified according to ANZSCO – Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1, 2009 (1220.0).

Source: ABS data available on request, Survey of Employee Earnings and Hours.

8.46 AVERAGE WEEKLY EARNINGS(a), By age group—August 2010



(a) In all jobs.

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia (6310.0)*.

Workplace relations

Workplace relations can be regarded as the relationships and interactions in the labour market between employers and employees (and their representatives), and the intervention in these relations by governments, government agencies and tribunals (e.g. Fair Work Australia).

Historically, governments have regulated the Australian labour market to varying degrees. Changes to the structure or processes underpinning the workplace relations environment have generally followed changes in governments, and periods of social or economic change. For most of the last century, employee-employer relationships were shaped by highly centralised Commonwealth and state tribunal-based systems of conciliation and arbitration. However, since the late 1980s, the workplace relations environment in Australia has undergone significant change and is now characterised by more decentralised arrangements.

The field of workplace relations is complex and diverse and, for statistical purposes, is not easily measured. The ABS collects information on a number of topics to provide an insight into the state of the workplace relations environment, including the methods used for setting pay (i.e. awards, collective agreements and individual arrangements), industrial disputes and trade union membership.

How pay is set

Information on the methods of setting the main part of employees' pay is collected in the

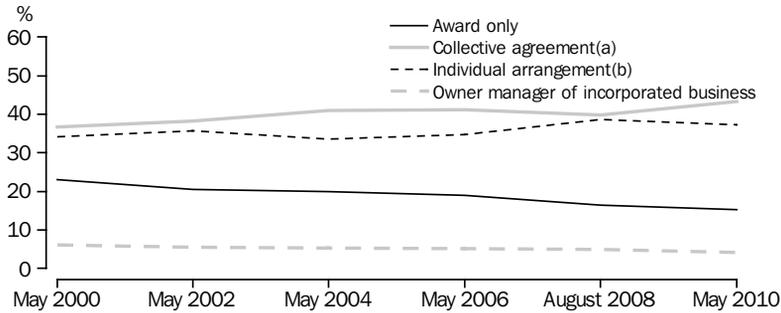
Employee Earnings and Hours (EEH) Survey. Three different methods of setting pay are identified – awards, collective agreements and individual arrangements.

Awards only. Awards are legally enforceable determinations, made by federal or state industrial tribunals that set the terms of employment (pay and/or conditions), usually in a particular industry or occupation. An award may be the sole mechanism used to set the pay and/or conditions for an employee or group of employees, or alternatively may be used in conjunction with an individual or collective agreement. Employees are classified to the Award only category if they were paid at the rate of pay specified in the award pay scale. If an employee was paid more than the rate of pay specified in the award, they are included in the individual arrangement or collective agreement category as appropriate.

Collective agreements include enterprise and workplace agreements and are agreements between an employer (or group of employers) and a group of employees (or one or more unions or employee associations representing employees). Collective agreements set the terms of employment (pay and/or conditions) for a group of employees, and are usually registered with a federal or state industrial tribunal or authority. Employees are classified to the Collective agreement category if they had the main part of their pay set by a registered or unregistered collective agreement or enterprise award.

Individual arrangements are arrangements between an employer and an individual

8.47 METHODS OF SETTING PAY



(a) Includes registered and unregistered collective agreements.
 (b) Includes registered and unregistered individual agreements.

Source: *Employee Earnings and Hours, Australia* (6306.0).

employee on the terms of employment (pay and/or conditions) for the employee. Common types of individual arrangements are individual contracts, letters of offer and common law contracts. An individual contract (or letter of offer) may specify all terms of employment, or alternatively may reference an award for some conditions and/or in the setting of pay (e.g. over award payments). Individual contracts may also be registered with a federal or state industrial tribunal or authority, for example, as an Australian Workplace Agreement (AWA). However, the *Workplace Relations Amendment (Transition to Forward with Fairness) Act 2008* (Cwlth) ceased the registration of individual agreements from 28 March 2008. Employees are classified to the Individual arrangement category if they have the main part of their pay set by an individual contract, registered individual agreement (e.g. AWA), common law contract or if they receive over award payments by individual agreement.

In May 2010, 43% of employees had their pay set by collective agreement, 37% by an individual arrangement and 15% of employees had their pay set by award only. Owner managers of incorporated businesses accounted for 4% of employees (graph 8.47).

Collective agreements have been the most common method of setting pay for the past decade, with the proportion of employees whose pay was set by this method increasing by 7 percentage points from May 2000 (37%) to May 2010 (43%). The proportion of employees with their pay set by an individual arrangement has increased by 3 percentage points in the 10

years to May 2010, from 34% to 37%. In a sign of the shift away from centralised pay setting arrangements, the proportion of employees whose pay was set by award only has decreased 8 percentage points from 23% in May 2000 to 15% in May 2010.

In May 2010, nearly half (46%) of all employees in the private sector had their pay set by an individual arrangement and a further 30% of employees in the private sector had their pay set by a collective agreement. In contrast, almost all (97%) public sector employees had their pay set by a collective agreement (table 8.48).

The proportion of female employees who had their pay set by award only was 18%, compared with 13% of male employees. Collective agreements were a more common method of setting pay for female employees (48%) than individual arrangements (32%), while individual arrangements were more common amongst male employees (42%) than collective agreements (39%). Male employees were more likely (6%) to be owner managers of incorporated enterprises than female employees (2%).

The use of the various methods of setting pay differs between occupation groups (table 8.49). Professionals (57%) recorded the highest proportion of employees paid by collective agreement, while Managers (26%) recorded the lowest proportion. Individual arrangements were the most common method of setting pay for Managers (55%), Clerical and administrative workers (48%) and Technicians and trades workers (44%). Community and personal service workers (31%), Labourers (28%), and Sales

workers (23%) recorded the highest proportions of employees paid by award only.

The industries with the highest proportion of employees with their pay set by collective agreements were Public administration and safety (92%) and Education and training (84%) (table 8.50). This is consistent with the high proportion

of employees in the public sector who had their pay set by collective agreements (97%). The Accommodation and food services industry had the highest proportion of employees (45%) with their pay set by award only. Individual arrangements were most common in the Professional, scientific and technical services (71%) and Wholesale trade (70%) industries.

8.48 METHODS OF SETTING PAY, Proportion of employees, By sector—May 2010

Sector	Award only %	Collective agreement(a) %	Individual arrangement(b) %	Owner manager of incorporated Enterprise %	All methods of setting pay %
MALES					
Private Sector	15.0	28.2	49.8	7.0	100.0
Public Sector	np	96.0	np	..	100.0
All Sectors	12.6	39.2	42.3	5.9	100.0
FEMALES					
Private Sector	23.5	31.3	42.1	3.1	100.0
Public Sector	**—	98.1	1.9	..	100.0
All Sectors	17.8	47.6	32.3	2.3	100.0
PERSONS					
Private Sector	19.0	29.7	46.1	5.2	100.0
Public Sector	**—	97.2	2.7	..	100.0
All Sectors	15.2	43.4	37.3	4.1	100.0

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

np not available for publication but included in totals where applicable, unless otherwise indicated

— nil or rounded to zero (including null cells)

.. not applicable

(a) Includes registered and unregistered collective agreements.

(b) Includes registered and unregistered individual arrangements.

Source: *Employee Earnings and Hours, Australia* (6306.0).

8.49 METHODS OF SETTING PAY, Proportion of employees, By occupation(a)—May 2010

Occupation Group	Award only %	Collective agreement(b) %	Individual arrangement(c) %	Owner manager of incorporated enterprise %	All methods of setting pay %
Managers	2.2	25.5	55.0	17.3	100.0
Professionals	3.3	57.4	35.4	3.9	100.0
Technicians and trades workers	19.5	30.5	44.3	5.7	100.0
Community and personal service workers	31.0	51.8	16.7	*0.4	100.0
Clerical and administrative workers	9.3	39.1	48.3	3.3	100.0
Sales workers	23.5	43.3	31.4	1.8	100.0
Machinery operators and drivers	11.6	45.9	39.9	2.5	100.0
Labourers	27.9	42.8	28.5	*0.9	100.0
Total all occupations	15.2	43.4	37.3	4.1	100.0

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Classified according to ANZSCO – Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1, 2009 (1220.0).

(b) Includes registered and unregistered collective agreements.

(c) Includes registered and unregistered individual arrangements.

Source: *Employee Earnings and Hours, Australia* (6306.0).

8.50 METHODS OF SETTING PAY, Proportion of employees, By industry(a)—May 2010

Industry Division	Award only	Collective	Individual	Owner manager of	All methods of setting pay
		agreement(b)	arrangement(c)	incorporated enterprise	
	%	%	%	%	%
Mining	**1.9	41.5	55.7	*0.9	100.0
Manufacturing	14.6	26.3	55.8	3.2	100.0
Electricity, gas, water and waste services	*3.0	67.0	28.6	1.4	100.0
Construction	10.0	23.1	55.4	11.5	100.0
Wholesale trade	10.9	12.3	70.2	6.6	100.0
Retail trade	22.3	41.0	33.1	3.6	100.0
Accommodation and food services	45.2	30.1	23.1	1.7	100.0
Transport, postal and warehousing	8.0	52.2	33.9	5.9	100.0
Information media and telecommunications	5.8	31.3	59.2	3.8	100.0
Financial and insurance services	2.1	42.6	50.5	4.8	100.0
Rental, hiring and real estate services	22.8	9.5	59.6	8.1	100.0
Professional, scientific and technical services	4.2	11.9	71.4	12.5	100.0
Administrative and support services	31.4	27.2	39.3	2.2	100.0
Public administration and safety	*1.9	92.3	5.4	*0.4	100.0
Education and training	5.1	84.1	10.4	*0.4	100.0
Health care and social assistance	17.1	64.1	17.3	1.5	100.0
Arts and recreation services	15.1	46.0	36.4	*2.5	100.0
Other services	27.2	9.8	55.2	7.9	100.0
Total all industries	15.2	43.4	37.3	4.1	100.0

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) (1292.0).

(b) Includes registered and unregistered collective agreements.

(c) Includes registered and unregistered individual arrangements.

Source: *Employee Earnings and Hours, Australia* (6306.0).

Industrial disputes

The ABS defines an industrial dispute as a disagreement over an issue or group of issues between an employer and its employees, which results in employees ceasing work. Industrial disputes comprise: strikes, which are a withdrawal from work by a group of employees; and lockouts, which are a refusal by an employer or group of employers to permit some or all of their employees to work.

This section presents statistics on industrial disputes involving work stoppages of ten or more working days lost. 'Working days lost' refers to all working days lost by employees directly and indirectly involved in the dispute. Directly involved employees are those who actually participated in the dispute. Indirectly involved employees are those who were stood down at the location where the stoppage occurred, but who were not themselves parties to the dispute.

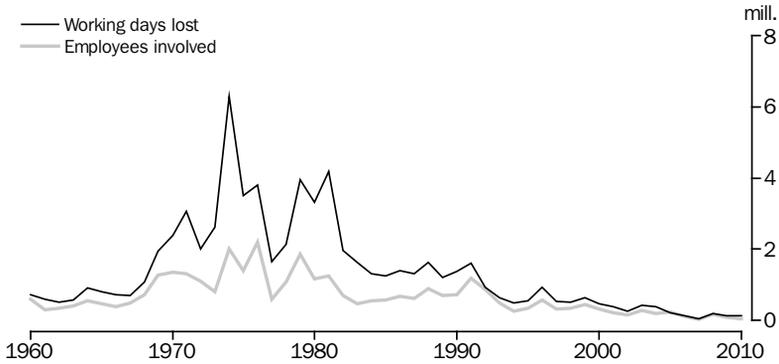
Graph 8.51 shows that the number of working days lost per year, and the number of employees

involved, fluctuate from year to year, but have steadily decreased over the last three decades and are currently at historically low levels.

From 2008 to 2010, the average number of working days lost per dispute decreased from 1,110 to 558 (table 8.52). However, there were more disputes in 2010 than in 2008 (227 compared with 177). The number of employees involved in industrial disputes decreased from 172,900 in 2008 to 54,800 in 2010. There was also a decrease in the total number of working days lost due to industrial disputes from 196,500 working days lost in 2008 to 126,600 working days lost in 2010.

Table 8.53 shows that from 2009 to 2010, the number of working days lost per thousand employees in all industries decreased from 14 to 13. The Mining, Manufacturing and Construction industries recorded increases between 2009 and 2010. The Coal mining industry recorded the largest increase in working days lost per thousand employees between 2009 and 2010

8.51 INDUSTRIAL DISPUTES



Source: ABS data available on request, Industrial Disputes collection.

8.52 INDUSTRIAL DISPUTES

	Working days lost per dispute no.	Disputes no.	Employees involved '000	Working days lost '000
2006	656	202	122.7	132.6
2007	368	135	36.0	49.7
2008	1 110	177	172.9	196.5
2009	562	236	89.3	132.7
2010	558	227	54.8	126.6

Source: Industrial Disputes, Australia, Mar 2011 (6321.0.55.001).

8.53 WORKING DAYS LOST PER THOUSAND EMPLOYEES, By selected industries(a)

Industry	2009 no.	2010 no.
Mining		
Coal	23.0	509.1
Other	2.1	6.2
Manufacturing		
Metal products etc	32.0	68.3
Other	15.7	20.7
Construction	34.0	42.4
Transport, postal and warehousing	33.5	16.3
Education and training; Health care and social assistance	24.2	6.0
Other industries(b)	2.7	2.1
All industries	14.0	12.8

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) (1292.0).

(b) Includes: Electricity, gas, water and waste services; Wholesale trade; Retail trade; Professional, scientific and technical services; Accommodation and food services; Financial and insurance services; Rental, hiring and real estate services; Information media and telecommunications; Administrative and support services; Public administration and safety; Arts and recreation services, and Other services.

Source: ABS data available on request, Industrial Disputes collection.

(from 23 to 509) and the Education and training and Health care and social assistance industries recorded the largest decrease in working days lost per thousand employees (from 24 to 6).

Trade union membership

A trade union is defined as an organisation, consisting predominantly of employees, whose principal activities include the negotiation of rates of pay and conditions of employment for its members. In August 2010, there were 1.8 million employees who were trade union members in their main job. This represented 18% of all employees. Table 8.54 shows that in 2010 the public sector had a higher proportion of employees with trade union membership in their main job than the private sector (41% compared with 14%).

8.54 TRADE UNION MEMBERSHIP, In main job— August 2010

Sector	Males	Females	Persons
	%	%	%
Public	41.5	41.5	41.5
Private(a)	14.5	12.8	13.8
All sectors	17.9	18.7	18.3

(a) Includes employees for whom sector of main job could not be determined.

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia* (6310.0).

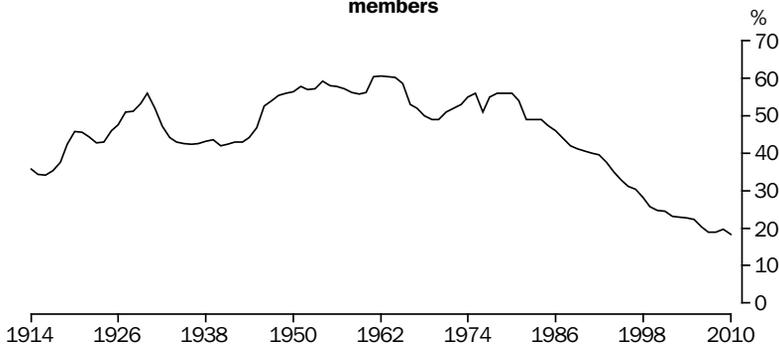
Graph 8.55 shows that the rate of trade union membership peaked at 61% in 1962, before declining rapidly between 1962 and 1970. This period was followed by increasing membership during the 1970s. Since then, the proportion of employees who are trade union members has steadily declined.

Some of the factors contributing to the decline in trade union membership include the changing workplace relations environment and the changing industry composition of the workforce, for example, the emergence of industries that are not highly unionised. Another factor in the decline in trade union membership is the increase in part-time and casual employment. These types of employment have historically been less unionised than full-time employment.

Graph 8.56 shows that the level of trade union membership varied considerably across industries, with the Education and training (39%) and Electricity, gas, water and waste services (37%) industries having the highest levels of trade union membership in 2010. The industries with the lowest levels were Agriculture, forestry and fishing (2%), Professional, scientific and technical services (3%), Rental, hiring and real estate services and Accommodation and food services (both at 4%).

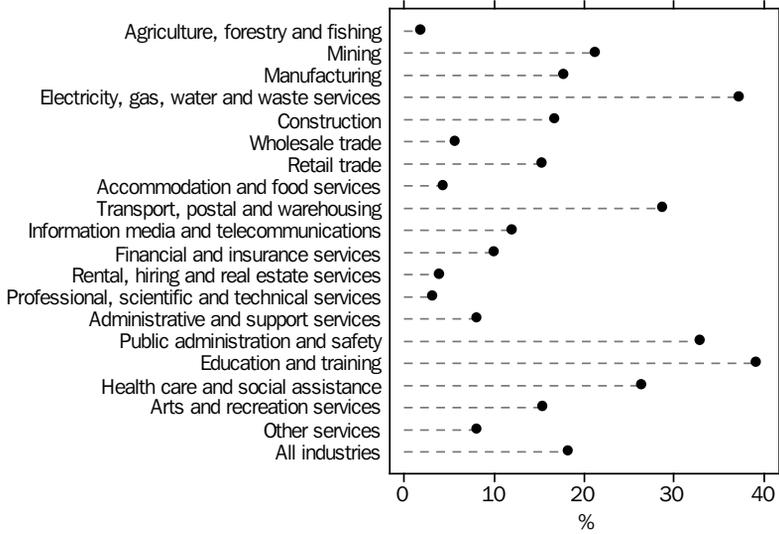
Graph 8.57 shows that the level of trade union membership also varied considerably across occupation groups, with Machinery operators and

8.55 TRADE UNION MEMBERSHIP, Proportion of employees who were trade union members



Source: *Employee Earnings, Benefits and Trade Union Membership, Australia* (6310.0); *Trade Union Members, Australia* (6325.0); *Labour Report, 1912–1958* (microfiche no. 61–002).

**8.56 EMPLOYEES WHO WERE TRADE UNION MEMBERS,
By industry(a)—August 2010**



(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) (1292.0).

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, Aug 2010, Spreadsheets* (6310.0).

**8.57 EMPLOYEES WHO WERE TRADE UNION MEMBERS,
By occupation(a)—August 2010**



(a) Classified according to ANZSCO – Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1, 2009 (1220.0).

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2010, Spreadsheets* (6310.0).

drivers (27%) and Professionals (25%) having the highest proportions of trade union members in 2010. The occupation group with the lowest level of trade union membership was Managers (9%).

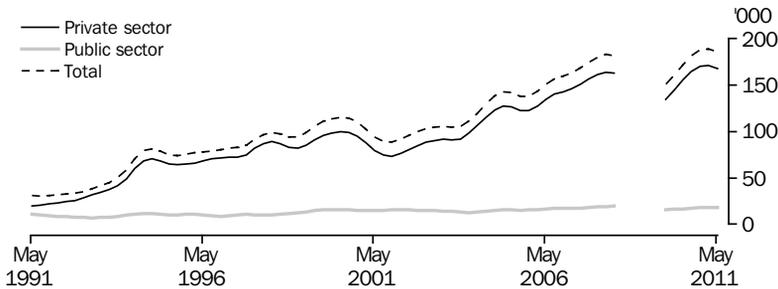
Job vacancies

Job vacancy statistics can be used to assess changes in the demand for labour, and are considered to be a leading indicator of employment. The ABS defines a job vacancy as an employee job available

for immediate filling on the survey reference date and for which recruitment action has been taken by the employer.

Graph 8.58 presents quarterly trend estimates of job vacancies for the period May 1991 to May 2011. It shows that the number of job vacancies decreased to 30,300 in August 1991, reflecting the labour market downturn in the early 1990s. The number of job vacancies then trended upwards to a high of 115,100 in May 2000, before falling to 88,900 in November 2001. Job vacancies then

8.58 JOB VACANCIES(a)(b)



(a) Trend estimates.

(b) Break in series between August 2008 and August 2009, see paragraph 3 of the explanatory notes in Job Vacancies, Australia (6354.0).

Source: Job Vacancies, Australia (6354.0).

8.59 JOB VACANCIES, By industry(a)—May 2011

	'000	%
Mining	9.5	5.2
Manufacturing	10.7	5.9
Electricity, gas, water and waste services	1.0	0.6
Construction	19.4	10.7
Wholesale trade	*12.8	*7.1
Retail trade	11.0	6.1
Accommodation and food services	11.9	6.6
Transport, postal and warehousing	*5.5	*3.0
Information media and telecommunications	2.7	1.5
Financial and insurance services	8.6	4.8
Rental, hiring and real estate services	*3.2	*1.8
Professional, scientific and technical services	25.0	13.8
Administrative and support services	24.0	13.3
Public administration and safety	10.3	5.7
Education and training	3.0	1.7
Health care and social assistance	16.6	9.2
Arts and recreation services	1.5	0.8
Other services	*4.5	*2.5
All industries	181.0	100.0

* estimate has a relative standard error between 25% and 50% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1.0) (1292.0).

Source: Job Vacancies, Australia (6354.0).

increased again, reaching a new record high of 182,900 in February 2008. There was a drop in the number of job vacancies, which became apparent after the survey was reinstated in November 2009. Since then, job vacancies have trended upwards from 150,600 in November 2009 to a peak of 189,200 in February 2011. In May 2011, there were 186,200 job vacancies.

The number of job vacancies in May 2011 (table 8.59) was highest in the Professional, scientific and technical services industry (25,000 or 14% of all job vacancies) followed by Administrative and support services (24,000), Construction (19,400) and Health care and social assistance (16,600) industries (13%, 11% and 9% respectively).

International comparisons

Labour force participation data presented for international comparisons are from the International Labour Organization (ILO) labour force statistics database. Some of the differences observed between participation rates for

Australia and other countries reflect differences in statistical treatment between countries, rather than actual differences in workforce participation. Hong Kong (SAR of China) and Singapore do not have participation rates available from the ILO.

In 2010, Australia's labour force participation rate for those aged 15–64 years was 66% – above that of most of the selected countries shown in Table 8.60, but below some countries, including Sweden (71%), New Zealand and Indonesia (both 68%) and Canada (67%). The lowest participation rates observed were in Italy (48%), Greece (54%) and France (57%).

Table 8.60 shows that Australia's unemployment rate in 2010 was 5.2%, much lower than Greece (12.5%), France (9.8%) and the United States of America (9.6%). Singapore (2.1%), Malaysia (3.3%) and Korea, Republic of (South) (3.7%) had the lowest unemployment rates of the selected countries, with Hong Kong (SAR of China) and Japan also having lower unemployment rates than Australia (4.3% and 5.1% respectively).

8.60 INTERNATIONAL COMPARISONS, Employment and unemployment(a)—2010

Selected Countries	ECONOMICALLY ACTIVE PARTICIPATION							
	POPULATION(b)			RATE		EMPLOYMENT	UNEMPLOYMENT	
	Persons '000	Males %	Females(c) %	Persons %	Persons '000	Persons '000	Rate %	
Australia	11 867.7	72.5	58.7	65.5	11 247.0	620.8	5.2	
Canada	18 525.1	71.7	62.4	67.0	17 041.0	1 484.1	8.0	
France	28 378.5	62.2	51.9	56.8	25 735.8	2 847.2	9.8	
Greece	5 017.4	64.2	44.1	53.9	4 388.6	628.7	12.5	
Hong Kong (SAR of China)	3 675.9	na	na	na	3 518.3	157.6	4.3	
Indonesia	116 262.8	na	na	67.8	107 806.7	8 456.1	7.3	
Italy	24 974.7	59.4	38.2	48.4	22 872.3	2 102.4	8.4	
Japan	65 898.3	71.6	48.5	59.6	62 563.3	3 335.0	5.1	
Korea, Republic of (South)	24 746.9	73.0	49.4	61.0	23 828.8	918.1	3.7	
Malaysia	11 679.1	na	na	62.9	11 291.4	387.7	3.3	
New Zealand	2 332.5	74.4	62.1	68.1	2 180.3	152.2	6.5	
Singapore	3 128.2	na	na	na	3 063.3	64.8	2.1	
Sweden	4 960.6	73.9	67.3	70.7	4 545.3	415.3	8.4	
United Kingdom	31 381.8	69.1	56.0	62.4	28 941.5	2 440.2	7.8	
United States of America	153 888.7	71.2	58.6	64.7	139 063.9	14 824.8	9.6	

na not available

- (a) For most countries, the age range for each of the populations in the table is 15 years and over. However, the age range varies for some countries as follows: Malaysia – 15–64 years; Sweden – 16–64 years; UK and USA – 16 years and over. Definitions also vary in terms of the inclusion or exclusion of certain other segments of the population such as the armed forces.
- (b) The 'economically active population' comprises all persons who supplied labour for the production of goods and services during a specified time period. Two common measures of the economically active population are the 'usually active population', measured in relation to a long reference period such as a year, and the 'currently active population' (often referred to as 'the labour force'), measured in relation to a short reference period such as one day or one week.
- (c) Participation rates for women are frequently not comparable internationally since, in many countries, relatively large numbers of women assist on farms or in other family enterprises without pay.

Source: International Labour Organization, LABORSTA database: <<http://laborsta.ilo.org>>.

Labour force and other characteristics of farmers

In 2012, Australia celebrates the Australian Year of the Farmer. This special article recognises the year by comparing the labour force and other characteristics of farmers with those of the broader employed population.

Farmers and farming communities are an economically and culturally important part of Australia as a nation. In 2009–10, approximately 52% of Australia's total land area was used for agriculture and there were 134,000 businesses undertaking agricultural activity, as categorised by the industry of main activity.¹ Farming is a significant economic activity in Australia and in 2009–10, the gross value of total Australian agricultural production was \$39.6 billion.² In the June quarter 2011, almost 2.2% of gross domestic product (GDP) arose from farm production in agriculture.³

Farmers and farm managers

In this article, the term 'farmer' refers to those persons who reported that their main occupation was a farmer or farm manager.⁴ The number of farmers in Australia has declined over time – falling from 246,000 in 1996–97 to 192,600 in 2010–11 (graph S8.1). Farmers represented 1.7% of all employed persons in 2010–11, a decrease from 2.9% in 1996–97. An additional 128,300 persons were employed as Farm, forestry and garden

workers⁵ in 2010–11, representing a further 1.1% of the employed population.

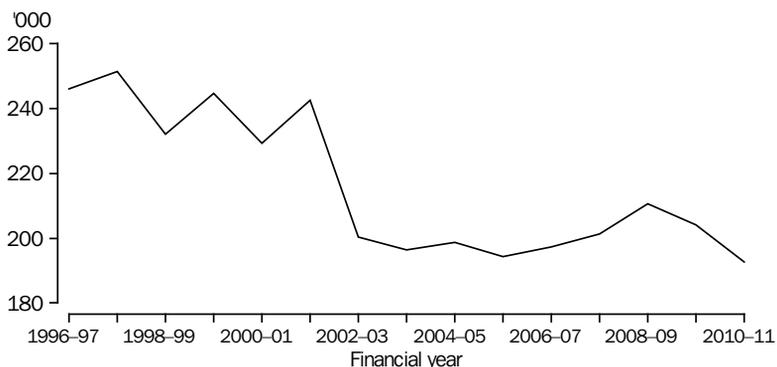
Farming in Australia is predominantly a land-based activity. In 2010–11, 48% of farmers were livestock farmers, 24% were crop farmers, 20% were mixed crop and livestock farmers, while just 1% were aquaculture farmers. The remaining farmers and farm managers were not further defined.

The personal characteristics of farmers

Farmers were more likely to be male – 139,500 or 72% of all farmers were male, compared to 55% of all employed persons in 2010–11.

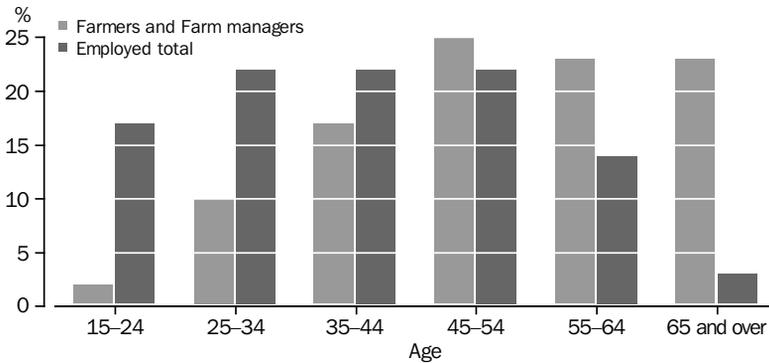
The age profile of farmers differs from that of all employed persons. In 2010–11, the median age of farmers was 53, compared to 39 for all employed persons. Seven out of ten (71%) farmers were 45 or over compared to four out of ten (39%) employed persons. The largest differences in the age distribution were apparent in the younger and older age groups. While 23% of farmers were aged 65 and over,

S8.1 FARMERS AND FARM MANAGERS, Employed total



Source: ABS data available on request: Labour Force Survey.

S8.2 FARMERS AND FARM MANAGERS, Age—2010–11



Source: ABS data available on request: Labour Force Survey.

only 3% of all employed persons were in this age group (graph S8.2). Conversely, only 2% of farmers were aged between 15 and 24, while 17% of all employed persons were in this age group. In 2010–11, farmers comprised a significant proportion of older workers – 14% of all employed persons aged 65 years and over. However, they made up a smaller proportion of younger workers – less than 1% of all employed persons aged between 15 and 34.

The employment characteristics of farmers

In 2010–11, the majority of farmers (53%) were own account workers, nearly a third (32%) were employees and only 14% were employers. This is in contrast to all employed persons, where the vast majority (88%) were employees.

Farmers, on average, faced a much longer working week than the rest of the employed population. In 2010–11, farmers usually worked an average of 49 hours in all jobs compared to 36 hours for all employed persons. While the average hours usually worked in all jobs was similar for part-time farmers and all persons employed part-time (18 and 19 hours respectively), the average hours usually worked by full-time farmers were longer than those of all persons employed full-time (57 hours compared to 44 hours). More than half (54%) of all farmers worked 50 or more hours per week, compared to 16% of all employed persons (graph S8.3). In contrast, 43% of all employed persons usually worked between 35 and 40 hours per week, while only 15% of farmers worked these hours.

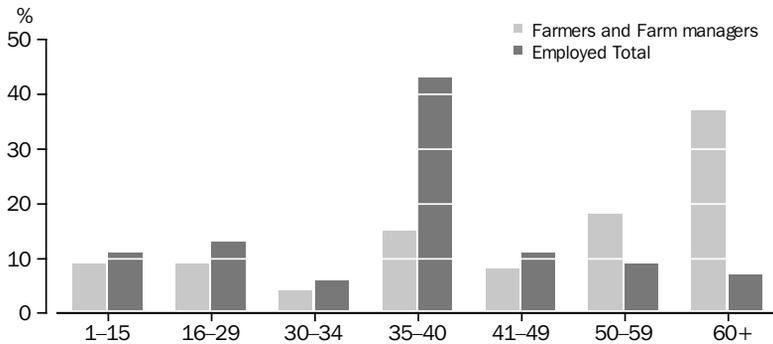
Farmers generally stayed in their job longer than the rest of the employed population. In November 2010, one in two farmers (50%) had been in their current job for 20 years or more, compared to just 10% of all employed persons. One-fifth (20%) of farmers had a duration of employment, or time in their own business, between 10 and 20 years, compared to 15% of all employed persons. While one in five (20%) employed persons had been in their current job for 12 months or less, only 2% of farmers had such a short duration of employment. The vast majority (97%) of farmers in 2010–11 expected to be working in their current job in the next 12 months compared to 91% of all employed persons.

The geographic characteristics of farmers

In 2010–11, almost all farmers (92%) worked outside of a capital city, compared to a little over a third (37%) of all employed persons. Farmers were geographically distributed throughout the states and territories in a pattern similar to that of all employed persons – for example, 31% of all farmers worked in New South Wales (while 32% of all employed persons did so), 25% of all farmers (and 25% of all employed persons) worked in Victoria, 19% of all farmers worked in Queensland (20% of all employed persons worked there) and 13% of all farmers worked in Western Australia (as did 11% of all employed persons).

When looking at the geographical distribution of farmers by regions within states, farmers

S8.3 FARMERS AND FARM MANAGERS, Hours usually worked in all jobs—2010–11



Source: ABS data available on request: Labour Force Survey.

were more concentrated in some areas than others. About 10% of all farmers in 2010–11 were located in the Northern, North Western and Central West statistical region of New South Wales; 7% in the balance of Western Australia (excluding metropolitan areas and lower Western Australian region) statistical region; 7% in the Gippsland statistical region of Victoria; 7% in the Murray-Murrumbidgee statistical region of New South Wales; and 6% in the Darling Downs-South West statistical region of Queensland.

In some of these regions, farmers also comprised a relatively larger proportion of the employed population, indicating a greater reliance on agricultural activities within communities in these areas. For example, in 2010–11, 10% of all employed persons in the Gippsland region of Victoria were farmers, similarly for the balance

of Western Australia statistical region, and 9% of all employed persons were farmers in the Darling Downs-South West statistical region of Queensland and in the Murray-Murrumbidgee statistical region of New South Wales.

Other characteristics of farmers

In 2010–11, 90% of farmers were family members (compared to 84% of all employed persons) and were more likely to be married (83% compared to 64% of all employed persons). Reflecting their older average age, nearly two-thirds of farmers (62%) did not have any dependent children, compared with 48% of all employed persons. A relatively high proportion of farmers (91%) were born in Australia compared to 73% of all employed persons.

Endnotes

1. *Agricultural Commodities, Australia, 2009–10* (7121.0) and the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 1)* (1292.0).
2. *Value of Agricultural Commodities Produced, Australia, 2009–10* (7503.0).
3. *Australian National Accounts: National Income, Expenditure and Product, Jun 2011* (5206.0).
4. According to ANZSCO – *Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1*, Farmers and farm managers plan, organise, control, coordinate and perform farming operations in agricultural establishments to grow crops, and breed and raise livestock, and fish and other aquatic life. Farmers and Farm managers are referred to as farmers in this article.
5. According to ANZSCO, Farm, forestry and garden workers perform a variety of routine tasks in cultivating and harvesting crops, plants and forests, breeding and raising of livestock and aquatic stock, and the management of pests and weeds. They include farm labourers.

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National Farmers Federation 2011, *Farm Facts 2011, Modern farming's economic, environmental and social contribution to Australia*, 15 August, Canberra <<http://www.nff.org.au/farm-facts.html>>

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- Australian Labour Market Statistics* (6105.0)
- Average Weekly Earnings, Australia* (6302.0)
- Employee Earnings and Hours, Australia* (6306.0)
- Employee Earnings, Benefits and Trade Union Membership, Australia* (6310.0)
- Forms of Employment, Australia* (6359.0)
- Industrial Disputes, Australia* (6321.0.55.001)
- Job Search Experience, Australia* (6222.0)
- Job Vacancies, Australia* (6354.0)
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- Labour Force, Australia, Detailed – Electronic Delivery* (6291.0.55.001)
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<<http://laborsta.ilo.org>>

INCOME AND WELFARE

The economic wellbeing or material standard of living of individuals is reflected in their access to economic resources to support their consumption of goods and services, such as food, clothing, housing, transport, medical care, leisure activities and so on. Such economic resources may be in the form of income received from wages and salaries, own businesses, investments and income support from government. However, income does not always accurately indicate command over goods and services, particularly when income is variable or expenditure can be financed through running down assets or acquiring debts. Other resources can also contribute to the level of consumption of goods and services, including the resources of government and welfare organisations that provide services such as aged care, respite care and child care, and the resources of family and friends who may provide assistance when needed.

Government programs aim to support Australians to achieve social and economic outcomes and to participate in society. Such programs provide income support for the retired, people with disabilities, carers, unemployed people, war veterans, students, and families with children. Other programs provide compensation payments for special groups, such as war veterans, and war widow(er)s and their families. In addition to providing income security, government programs help people to meet specific needs. For example, assistance is provided for a range of goods and services through pensioner concession and health care cards, and other types of programs such as those that aim to provide assistance with employment, and advocacy for people with disabilities.

This chapter provides information from the Australian Bureau of Statistics (ABS) on the levels and sources of income of Australia's population, on their expenditure on goods and services, and on household wealth.

Information is also provided on the major income and community support programs of the Australian Government, describing the eligibility requirements, number of beneficiaries and government expenditure on these programs.

A special article is included in the chapter, *The 2010–11 summer of natural disasters*.

Related information can be found in chapters 7 *Population*, 8 *Labour*, 10 *Housing* and 11 *Health*.

Household income, expenditure and wealth

Income

This section provides measures of the level and distribution of after-tax (disposable) household income, after adjusting for household size and composition. The estimates of disposable income are derived from the gross income data collected by the ABS in the 2009–10 Survey of Income and Housing, with deductions for estimated income tax liability, the Medicare levy and the Medicare levy surcharge.

Gross income includes:

- wages and salaries, and other receipts from employment, including income provided as part of salary sacrifice and/or salary packaging arrangements
- profit or loss from own unincorporated business (including partnerships)
- net investment income (in the form of interest, rent, dividends, royalties)
- government pensions and allowances and
- private transfers in the form of superannuation, child support, workers' compensation and financial support from family members not living in the household.

While income is usually received by individuals, it is normally shared between partners in a couple relationship and with dependent children. To a lesser degree, there may be sharing with other members of the household. Even when there is no transfer of income between members of a household, nor provision of free or cheap accommodation, members are still likely to benefit from the economies of scale that arise from the sharing of dwellings. The income measures shown in this section therefore relate to household income.

However, larger households normally require a greater level of income to maintain the same material standard of living as smaller households, and the needs of adults are normally greater than the needs of children. The household income estimates are therefore adjusted by equivalence factors to standardise the income estimates with respect to household size and composition, while taking into account the economies of

scale that arise from the sharing of dwellings. The equivalised disposable household income estimate represents the amount of disposable income that a single person household would require to maintain the same standard of living as the household in question, regardless of the size or composition of that household.

To calculate the equivalised disposable income of a household, each member of the household is allocated 'equivalence points'. Taking the first adult in the household as having a weight of 1 point, each additional person aged 15 years or older is allocated 0.5 of a point, and each child under the age of 15 years is allocated 0.3 of a point. Equivalised disposable household income is then derived by dividing disposable household income by a factor equal to the sum of the 'equivalence points' allocated to the household members. The equivalised disposable income of a single person household is the same as its unequivalised disposable income. When disposable household income is negative, equivalised disposable income is set to zero.

In this chapter, estimates in 'real' terms have been adjusted to 2009–10 dollars using changes in the Consumer Price Index (CPI).

In 2009–10, mean (i.e. average) equivalised disposable household income (i.e. the income that a single person household would require to maintain the same standard of living as the average person) for all persons living in private dwellings was \$848 per week. There were approximately 21.6 million people living in private dwellings.

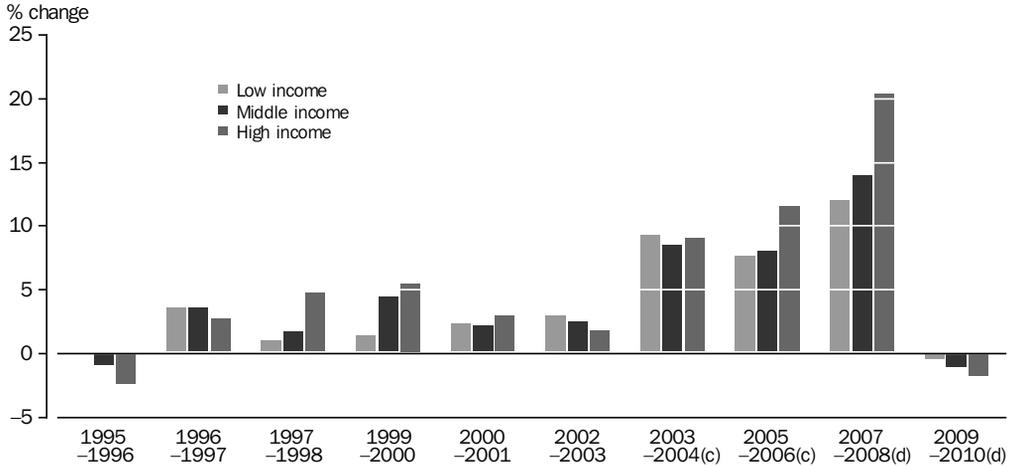
Mean equivalised disposable household income did not show any significant change in real terms between 2007–08 (\$859) and 2009–10 (\$848). In real terms, there was also no significant change for low, middle or high income households (graph 9.1).

In 2007–08, there was a break in series due to improvements in measuring income introduced in this survey cycle. Adjusting for this break in series, the net increase between 1994–95 and 2009–10 was 48%.

Household characteristics

Households with different characteristics tend to have different income levels, as shown in table 9.2. In 2009–10, wages and salaries were the main source of income for 80% of households with

9.1 CHANGES IN MEAN REAL EQUIVALISED DISPOSABLE HOUSEHOLD INCOME(a)(b)



(a) Change from previous survey year.

(b) The 'Low income' group are persons in the second and third deciles; the 'Middle income' group are persons in the middle income quintile; and the 'High income' group are persons in the highest income quintile.

(c) 2003-04 and 2005-06 data have been recomputed to reflect new treatments of income, where data are available to support this calculation.

(d) Estimates for 2007-08 and 2009-10 are not directly comparable with estimates for previous cycles due to the improvements made to measuring income introduced in the 2007-08 cycle.

Source: *Household Income and Income Distribution, Australia (6523.0)*.

9.2 HOUSEHOLD CHARACTERISTICS, By income group—2009-10

		Low income(a)	Middle income(b)	High income(c)	All households
Mean equivalised disposable household income per week	\$	429	721	1704	848
Has main source of income of wages and salaries	%	26.1	80.1	86.0	60.8
Has main source of income of government pensions and allowances	%	64.4	4.0	—	25.2
Owns home without a mortgage	%	45.1	28.2	23.3	32.6
Owns home with a mortgage	%	17.8	42.4	52.4	36.2
Rents from state/territory housing authority	%	7.2	1.3	*0.3	3.9
Rents from private landlord	%	25.5	25.1	20.9	23.9
Average number of persons in household	no.	2.4	2.8	2.5	2.6
Average number of employed persons in household	no.	0.6	1.6	1.9	1.3
Average age of household reference person	years	58	47	45	50

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

(a) Persons in the second and third income deciles.

(b) Persons in the middle income quintile.

(c) Persons in the highest income quintile.

Source: *Household Income and Income Distribution, Australia, 2009-10 (6523.0)*.

middle income level and 86% of those with high income level. In contrast, government pensions and allowances were the main source of income for low income households (64%). However, low income households had the highest incidence of full ownership of their home (45%), reflecting the high proportion of older people in the low income category.

Middle income households contained more people on average than high income households (2.8 compared with 2.5) but contained fewer employed persons (1.6 compared with 1.9). In part, this reflects the different age profiles of the two groups, with middle income households containing more persons under 18 years of age on average, compared to high income

households (0.8 compared with 0.4). Low income households had an average of 0.6 employed persons and housed an average of 2.4 persons.

Life cycle stages

Income levels across the population partly reflect the different life cycle stages that people have reached. A typical life cycle includes childhood, early adulthood, and the forming and maturing of families. Table 9.3 compares households in selected life cycle groups.

Of the groups included in table 9.3, younger couples without children had the highest mean equivalised disposable household income of \$1,162 per week, with an average of 1.8 employed persons in the household. For couples with dependent children only, and with the eldest child being under five years, mean equivalised disposable household income was \$822 per week (71% of that of young couples without children). This lower income principally reflects the lower average number of employed persons in these households (1.5) and the larger average number of persons in these households (3.4) over which incomes are shared. Mean equivalised disposable household incomes were higher for households with only non-dependent children (\$995) than those with any dependent children. People living

in lone person households where the reference person was aged 65 years and over had the lowest average incomes at \$473 per week. This was lower than for couple only households where the reference person was aged 65 years and over (\$594 per week). Older lone persons were more likely than older couples to have government pensions and allowances as their main source of household income (76% compared with 65%), while older couples were more likely to fully own their home (84% compared to 72% for older lone persons).

Households comprising one parent with dependent children had an average income of \$547 per week. Only 12% fully owned their home and, therefore, a substantially greater proportion were making mortgage or rental payments from their income. An estimated 50% of one parent households had government pensions and allowances as their main source of household income. On average, there were 0.9 employed persons in the household.

States and territories

There were differences in the average levels of income between the states and territories (table 9.4). Tasmania's mean equivalised disposable household weekly income was 83% of the

9.3 INCOME AND HOUSEHOLD CHARACTERISTICS FOR SELECTED LIFE CYCLE GROUPS—2009–10

Selected life cycle group	Number of households '000	Average number of persons in household no.	Average number of employed persons in household no.	Average number of dependent children in household no.	Proportion with	Mean	Proportion owning home without a mortgage %
					pensions and allowances as main source of income %	equivalised disposable household income per week \$	
Lone person, under 35	330.5	1.0	0.9	0.0	9.1	938	*3.5
Couple only, reference person under 35	469.1	2.0	1.8	0.0	*1.0	1 162	*1.7
Couple with dependent children only							
Eldest child under 5	446.2	3.4	1.5	1.4	7.4	822	5.9
Eldest child 5–14	846.8	4.2	1.6	2.2	7.5	865	10.6
Eldest child 15–24	551.7	4.1	2.3	2.1	6.7	912	23.3
Couple with							
Dependent and non-dependent children only	283.3	4.7	3.0	1.4	*5.9	896	22.8
Non-dependent children only	473.3	3.3	2.2	0.0	10.9	995	50.4
Couple only, reference person 55–64	542.4	2.0	1.1	0.0	19.8	925	57.4
Couple only, reference person 65 and over	741.6	2.0	0.3	0.0	64.6	594	84.0
Lone person aged 65 and over	742.0	1.0	0.1	0.0	76.1	473	71.8
One parent, one family households with dependent children	535.2	3.1	0.9	1.8	50.0	547	11.7
All households	8 398.5	2.6	1.3	0.6	25.2	848	32.6

* estimate has relative standard error of 25% to 50% and should be used with caution

Source: Household Income and Income Distribution, Australia, 2009–10 (6523.0).

9.4 HOUSEHOLD INCOME PER WEEK, By state and territory—2009–10

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	\$	\$	\$	\$	\$	\$	\$	\$	\$
CAPITAL CITY(a)									
Gross household income per week									
Mean income	1 887	1 782	1 832	1 586	1 935	1 385	1 964	2 325	1 832
Median income	1 491	1 422	1 533	1 259	1 468	1 120	1 838	2 008	1 458
Equivalised disposable household income per week									
Mean income	909	860	893	837	979	755	943	1 101	898
Median income	779	732	783	726	780	668	895	1 009	765
BALANCE OF STATE(b)									
Gross household income per week									
Mean income	1 473	1 272	1 468	1 233	1 850	1 245	na	na	1 437
Median income	1 092	964	1 178	939	1 456	943	na	na	1 094
Equivalised disposable household income per week									
Mean income	775	701	756	685	925	673	na	na	757
Median income	652	610	670	605	743	593	na	na	650
ALL HOUSEHOLDS									
Gross household income per week									
Mean income	1 729	1 637	1 629	1 492	1 915	1 305	1 924	2 325	1 688
Median income	1 319	1 300	1 326	1 158	1 466	1 026	1 759	2 008	1 320
Equivalised disposable household income per week									
Mean income	859	818	817	798	966	708	938	1 101	848
Median income	718	695	705	685	770	613	885	1 009	715

na not available

(a) Capital city estimates for the Australian Capital Territory relate to total ACT.

(b) Northern Territory households are included in Australian total for balance of state. NT estimates are not shown separately since estimates for the NT other than Darwin are not considered reliable. Households in areas defined as very remote were excluded, accounting for about 23% of the population in the NT.

Source: *Household Income and Income Distribution, Australia, 2009–10* (6523.0).

national average and South Australia's was 94%. The Australian Capital Territory, Western Australia and the Northern Territory have the highest mean equivalised disposable household incomes (30%, 14%, and 11% above the national average respectively). The high income levels reflect, in part, the younger age profile of the Australian Capital Territory and the Northern Territory, and the greater number of employed persons per household. The results for the Northern Territory also reflect the exclusion of households in collection districts defined as very remote which, if included, would be likely to reduce the mean income. This potential for an overestimated mean income in the NT is based on the large relative size of the very remote population for that territory.

There are also differences between the equivalised disposable household incomes recorded in capital cities compared to those earned elsewhere in Australia. At the national level, mean incomes in the capital cities were 19% above those in the balance of state, with all states recording capital city mean incomes above those

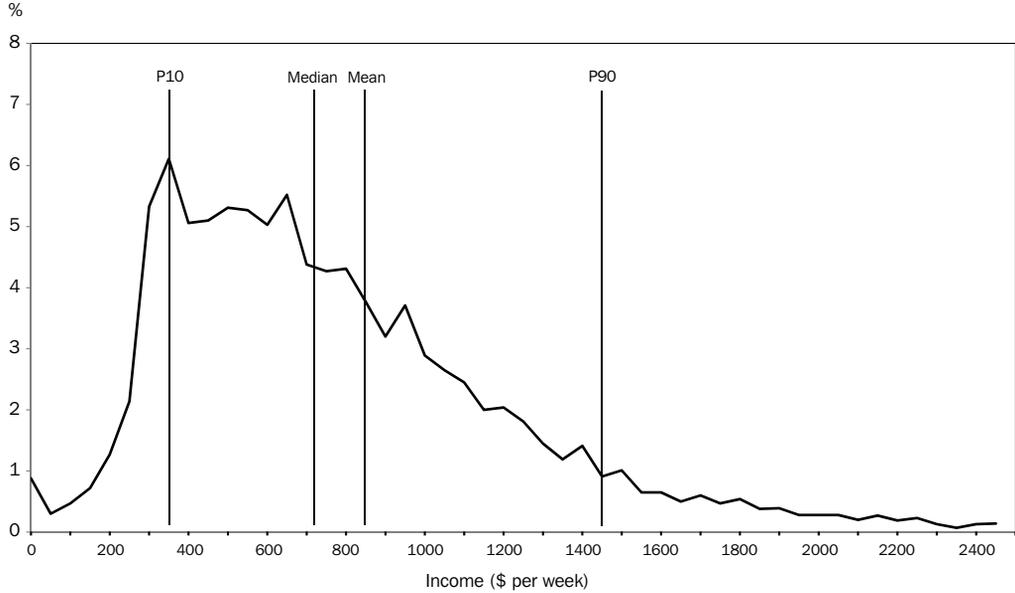
in the balance of state except in WA where the mean income differences were not statistically significant. The largest differences recorded were for Victoria and South Australia, where the capital city incomes were 23% and 22% respectively, above the mean incomes across the rest of the state.

Income distribution

While the mean equivalised disposable household income of all households in Australia in 2009–10 was \$848 per week, the median (i.e. the midpoint when all people are ranked in order of income) was lower at \$715 per week. This difference reflects the typically asymmetric distribution of income where a relatively small number of people have relatively high household incomes, and a large number of people have relatively lower household incomes (graph 9.5).

Percentile ratios are one measure of the spread of incomes across the population. P90 (i.e. the income level dividing the bottom 90% of the population from the top 10%) and P10 (i.e. dividing the bottom 10% of the population from

9.5 DISTRIBUTION OF EQUIVALISED DISPOSABLE HOUSEHOLD INCOME—2009–10



Source: *Household Income and Income Distribution, Australia (6523.0)*.

9.6 SELECTED INCOME DISTRIBUTION INDICATORS, Equivalised disposable household income

		1994–95	1995–96	1996–97	1997–98	1999–2000	2000–01	2002–03	2003–04	2005–06	2007–08(a)	2009–10
Ratio of incomes of households at top of selected income percentiles												
P90/P10	ratio	3.78	3.74	3.66	3.77	3.89	3.97	4.00	3.87	4.05	4.35	4.21
P80/P20	ratio	2.56	2.58	2.54	2.56	2.64	2.63	2.63	2.55	2.58	2.66	2.70
P80/P50	ratio	1.55	1.57	1.56	1.56	1.57	1.56	1.57	1.53	1.55	1.58	1.60
P20/P50	ratio	0.61	0.61	0.61	0.61	0.59	0.59	0.60	0.60	0.60	0.59	0.59
Percentage share of total income received by persons with												
Low income(b)	%	10.8	11.0	11.0	10.8	10.5	10.5	10.6	10.6	10.4	10.0	10.1
Middle income(c)	%	17.7	17.7	17.8	17.7	17.7	17.6	17.6	17.6	17.4	16.9	17.0
High income(d)	%	37.8	37.3	37.1	37.9	38.4	38.5	38.3	38.4	39.2	41.0	40.2
Gini coefficient	no.	0.302	0.296	0.292	0.303	0.310	0.311	0.309	0.306	0.314	0.336	0.328

(a) Some of the changes in the income distribution measures between 2005–06 and 2007–08 reflect the improvements made to measuring income in the 2007–08 cycle.

(b) Persons in the second and third income deciles.

(c) Persons in the middle income quintile.

(d) Persons in the highest income quintile.

Source: *Household Income and Income Distribution, Australia, 2009–10 (6523.0)*.

the rest) are shown in graph 9.5. In 2009–10, P90 was \$1,448 per week and P10 was \$344 per week, giving a P90/P10 ratio of 4.21. Various percentile ratios for selected years are shown in table 9.6, and the changes in these ratios can provide a picture of changing income distribution over time. Note that the lower the ratio, the smaller the difference between high and low incomes, and the lower the inequality.

Another measure of income distribution is provided by the income shares going to groups of people at different points in the income distribution. Table 9.6 shows that, in 2009–10, 10% of total equivalised disposable household income went to people in the ‘low income’ group (i.e. the 20% of the population in the second and third income deciles), with 40% going to the ‘high income’ group (represented by the 20% of the population in the highest income quintile).

The Gini coefficient is a single statistic that lies between 0 and 1 and is a summary indicator of the degree of income inequality. Values closer to 0 represent a lesser degree of inequality (if 0, then all household incomes would be equal) and values closer to 1 represent greater inequality (if 1, a single household would have all the income). For 2009–10, the Gini coefficient was 0.328.

Household expenditure

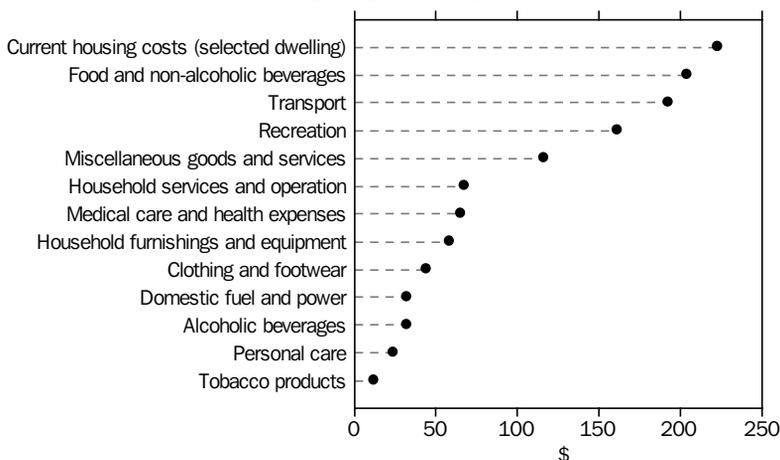
This section presents estimates of household expenditure compiled from the 2009–10 Household Expenditure Survey (HES) conducted by the ABS. HES collected detailed information on the expenditure, income, net worth, and characteristics of households in Australia.

The household is the usual unit of analysis for expenditure because it is assumed that sharing of the use of goods and services occurs at this level. If smaller units are adopted, for example, persons, then it is difficult to attribute the use of shared items such as accommodation and household goods, and of expenditure on items consumed by others, such as food.

In 2009–10, Australian households spent an average of \$1,236 per week on goods and services (graph 9.7 and table 9.8). The broad categories with the highest household expenditures were:

- current housing costs, with average household expenditure of \$223 per week, representing 18% of total household expenditure on goods and services
- food and non-alcoholic beverages, \$204 per week, 17% of the total

9.7 MEAN WEEKLY HOUSEHOLD EXPENDITURE ON GOODS AND SERVICES—2009–10



Source: Household Expenditure Survey, Australia: Summary of Results (6530.0).

9.8 HOUSEHOLD EXPENDITURE AND CHARACTERISTICS, By equivalised disposable household income quintile groups—2009–10

		Lowest quintile	Second quintile	Third quintile	Fourth quintile	Highest quintile	All house- holds	Second and third deciles
Mean gross household income per week	\$	464	980	1 476	2 057	3 581	1 688	704
Mean equivalised disposable household income per week	\$	314	524	721	975	1 704	848	429
Average age of household reference person	years	59	52	47	45	45	50	58
Average number of persons in the household	no.	2.1	2.8	2.9	2.8	2.5	2.6	2.4
Average number of employed persons in the household	no.	0.4	1.0	1.6	1.9	1.9	1.3	0.6
Mean household net worth	\$'000	423.5	520.1	557.6	674.3	1 464.1	729.4	433.6
Family composition of households(a)								
Couple family with dependent children	%	14.8	28.0	35.0	32.4	24.5	26.1	19.5
One parent family with dependent children	%	9.5	10.7	7.2	2.2	1.0	6.2	11.3
Couple only	%	25.8	25.2	19.0	25.2	35.2	26.3	30.4
Other one family households	%	5.8	12.1	14.5	14.6	14.3	11.9	9.0
Multiple family households	%	0.6	2.9	2.3	3.2	0.7	1.8	0.9
Lone person household	%	42.3	18.4	18.9	18.1	19.6	24.5	26.9
Group household	%	1.3	2.7	3.2	4.4	4.6	3.2	1.9
Expenditure(b)								
Current housing costs [selected dwelling]	%	20.4	18.2	18.6	18.1	16.7	18.0	19.0
Domestic fuel and power	%	3.9	3.2	2.8	2.4	2.0	2.6	3.7
Food and non-alcoholic beverages	%	19.4	18.4	17.6	15.7	14.5	16.5	19.5
Alcoholic beverages	%	1.9	2.3	2.9	2.9	2.7	2.6	2.2
Tobacco products	%	1.6	1.4	1.2	1.0	0.5	1.0	1.6
Clothing and footwear	%	2.9	3.5	3.5	3.4	4.1	3.6	3.4
Household furnishings and equipment	%	4.6	4.3	4.6	4.7	5.1	4.7	4.7
Household services and operation	%	6.6	5.9	5.7	5.4	4.8	5.5	6.6
Medical care and health expenses	%	5.7	6.6	5.0	4.8	5.1	5.3	5.2
Transport	%	12.8	14.5	14.8	15.9	17.4	15.6	13.6
Recreation	%	11.6	12.4	13.1	12.7	14.2	13.1	12.2
Personal care	%	1.8	1.9	2.0	1.9	2.0	1.9	2.0
Miscellaneous goods and services	%	6.8	7.6	8.3	11.0	10.8	9.4	6.4
Mean expenditure on all goods and services per week	\$	657	979	1 210	1 482	1 938	1 236	760
Number of households	'000	2 030.0	1 556.3	1 496.0	1 560.3	1 755.9	8 398.5	1 778.2

(a) As a proportion of all households.

(b) As a proportion of total mean expenditure on goods and services.

Source: Household Expenditure Survey, Australia: Summary of Results (6530.0).

- transport, \$193 per week, 16% of the total, and
- recreation, \$161 per week, 13% of the total.

The level and pattern of expenditure differ between households, reflecting characteristics such as income, household composition, household size and location.

The level and pattern of expenditure also differed between households with differing income levels (table 9.8). In 2009–10, low income households (represented by the 20% of people in the second and third income deciles) spent \$760 per week on goods and services, compared with \$1,938 spent by high income

households (those in the highest income quintile). Low and high income households had average gross weekly incomes of \$704 and \$3,581 respectively.

The composition of a household's weekly expenditure is also affected by the level of household income. For example, food and non-alcoholic drinks accounted for 20% of the expenditure on goods and services of low income households, compared with 15% for high income households. In general, the proportion spent on household services, domestic fuel and power, and tobacco products also declined as household income rose, while the proportion spent on recreation and alcoholic beverages increased.

Wealth

Wealth is a net concept measuring the extent to which the value of household assets exceeds the value of liabilities. The 2003–04, 2005–06 and 2009–10 Surveys of Income and Housing collected a comprehensive range of information on household assets and liabilities to enable the production of statistics on net worth (or wealth). In 2009–10, the mean value of household assets was \$839,000 (table 9.9). The mean value of household liabilities was \$120,000, resulting in average household net worth of \$720,000.

Owner occupied dwellings were the main form of asset held by households. An estimated 69% of all households own their home outright or with a mortgage, with an average home value of \$531,000. When averaged across all households, that is, across both owner occupiers and non-owner occupiers, the average was \$365,000 and represented 43% of all household assets. Just over 20% of households owned property other than their own home, including holiday homes, and residential and non-residential property for rent. These accounted for 16% of all household assets. Balances in superannuation funds were

9.9 HOUSEHOLD ASSETS, LIABILITIES AND CHARACTERISTICS, By household net worth quintile groups—2009–10

		Lowest quintile	Second quintile	Third quintile	Fourth quintile	Highest quintile	All house- holds
ASSETS (MEAN VALUES)							
Financial assets							
Value of accounts held with financial institutions	\$'000	4.6	14.7	19.8	35.3	90.1	32.9
Value of shares (excl. own incorporated business)	\$'000	0.4	2.2	3.7	11.8	93.5	22.3
Value of public unit trusts	\$'000	*0.1	0.7	1.9	2.9	13.0	3.7
Value of debentures and bonds	\$'000	—	*0.3	*0.1	*0.4	*1.4	0.4
Value of own incorporated business (net of liabilities)	\$'000	—	*1.0	2.0	5.6	188.9	39.5
Superannuation							
Balance of accounts with government superannuation funds	\$'000	2.0	10.4	17.6	33.9	70.0	26.8
Balance of accounts with non-government superannuation funds	\$'000	7.4	27.7	36.2	74.0	300.3	89.1
<i>Total superannuation</i>	\$'000	9.4	38.1	53.8	107.9	370.3	115.9
Total financial assets(a)	\$'000	14.7	58.0	82.9	169.2	848.9	234.7
Non-financial assets							
Property assets							
Value of owner occupied dwelling	\$'000	9.5	175.1	340.3	487.2	812.5	364.9
Value of other property	\$'000	*5.6	29.1	49.7	89.6	508.0	136.4
<i>Total property assets</i>	\$'000	15.1	204.3	390.0	576.8	1 320.5	501.3
Value of own unincorporated business (net of liabilities)	\$'000	0.3	1.7	4.1	7.5	100.2	22.7
Value of contents of dwelling	\$'000	18.9	48.3	60.1	76.5	100.0	60.8
Value of vehicles	\$'000	7.2	16.9	18.7	22.9	36.5	20.5
Value of assets n.e.c.	\$'000	*0.1	*0.2	*0.3	*0.4	*2.2	0.6
Total non-financial assets	\$'000	41.5	271.3	472.8	683.7	1 554.3	604.7
Total assets	\$'000	56.2	329.3	555.6	852.9	2 403.3	839.4
LIABILITIES (MEAN VALUES)							
Property loans							
Principal outstanding on loans for owner occupied dwelling	\$'000	9.7	103.3	90.7	77.6	60.5	68.4
Principal outstanding on other property loans	\$'000	*6.0	18.9	28.0	42.7	87.5	36.6
<i>Total property loans</i>	\$'000	15.7	122.2	118.7	120.3	148.0	105.0
Other liabilities							
Debt outstanding on study loans	\$'000	3.2	2.2	1.4	1.4	1.8	2.0
Amount owing on credit cards	\$'000	1.8	2.9	2.5	2.4	3.5	2.6
Principal outstanding on loans for vehicle purchases (excl. business and investment loans)	\$'000	2.3	3.5	2.3	1.9	1.5	2.3
Principal outstanding on investment loans (excl. business and rental property loans)	\$'000	**0.2	*1.4	2.4	5.8	*24.6	6.9
Principal outstanding on loans for other purposes (excl. business and investment loans)	\$'000	1.1	1.4	1.1	*0.6	0.9	1.0
Total liabilities	\$'000	24.4	133.6	128.5	132.4	180.3	119.8

For footnotes see end of table.

...continued

**9.9 HOUSEHOLD ASSETS, LIABILITIES AND CHARACTERISTICS,
By household net worth quintile groups—2009–10 — continued**

	Lowest quintile	Second quintile	Third quintile	Fourth quintile	Highest quintile	All house- holds
NET WORTH (MEAN VALUES)						
Net worth of household	\$'000	31.8	195.7	427.2	720.5	2 223.00
CHARACTERISTICS						
Average number of persons in the household	no.	2.4	2.5	2.5	2.7	2.8
Average number of employed in the household	no.	0.9	1.4	1.2	1.4	1.6
Average age of household reference person	years	41	43	53	56	57
Mean equivalised disposable household income per week	\$	314	524	721	975	1 704
Has wages and salaries as main source of income	%	50.6	70.8	61.3	61.9	59.4
Has government pensions and allowances as main source of income	%	42.4	20.8	30.7	25.0	7.2
Owns home without a mortgage	%	*0.4	11.8	39.4	50.1	61.1
Owns home with a mortgage	%	3.8	45.9	51.7	45.4	34.2
Rents from state/territory housing authority	%	17.4	1.8	**0.1	**0.1	**0.1
Rents from private landlord	%	70.2	35.0	7.4	3.1	3.0

— nil or rounded to zero (including null cells)

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Includes value of other financial investments, children's assets and loans to persons not in the same household.

Source: *Household Wealth and Wealth Distribution, Australia, 2009–10* (6554.0).

the largest financial asset held by households, averaging \$116,000 per household across all households and accounting for 14% of all household assets. Around 75% of households had some superannuation assets.

Loans outstanding on owner occupied dwellings were the largest household liability. They averaged \$188,000 for owner occupier households with a mortgage, giving them an average net value in their dwellings of \$333,000. Across all households, the average value of loans outstanding on owner occupied dwellings was \$68,000, or 57% of all household liabilities. Loans outstanding for other property averaged \$37,000 and accounted for 31% of all household liabilities

The distribution of wealth (net worth) across households is very unequal, partly reflecting the common pattern of people gradually accumulating wealth throughout their working life. In 2009–10, the 20% of households with the lowest net worth accounted for only 1% of the net worth of all households, with an average net worth of \$32,000 per household. The share of net worth increases with each higher net worth quintile, with 5% for the second quintile, 12% for the third quintile, 20% for the fourth quintile, while the wealthiest 20% of households in Australia accounted for 62% of total household net worth, with an average net worth of \$2.2 million per household.

The distributional pattern of net worth is also marked when considered in terms of sources of income. Households where the main source of household income is 'other' income (principally investment income) had average household net worth of \$1.8 million, while those where the main source of income was government pensions and allowances had average household net worth of \$370,000. Net worth in renter households was on average about 13% of the net worth for owner households without a mortgage, and about 21% of the net worth for owner households with a mortgage.

Income and community support

Information in this section was contributed by the Australian Government departments of Families, Housing, Community Services and Indigenous Affairs; Veterans' Affairs; Health and Ageing; Education, Employment and Workplace Relations and the Attorney-General's Department.

The websites listed at the end of this chapter contain additional information about programs provided by the Australian Government.

Overview

Australian governments, at all levels, provide support payments that reduce social exclusion and, through a range of programs, provide

opportunities for people to contribute to economic growth and the community. Programs have changed over time to meet ongoing changes in family structures, the labour market and the structural ageing of the population. Policies aim to encourage active social and economic participation by members of society within an individual's capacity, redress disadvantage by boosting self-reliance, and provide assistance to those who are unable to support themselves.

Early intervention, prevention and capacity building strengthen individuals, families and communities, increase workforce participation and economic productivity, and ultimately boost retirement incomes.

The Australian Government and the state and territory governments have in place a range of reforms with the aim of closing the gap in life outcomes between Aboriginal and Torres Strait Islander and non-Indigenous Australians. Different strategies are often needed for individual communities in urban, rural and remote areas. The Indigenous Economic Development Strategy is a national policy framework which guides Government decision-making and investment.

For people of working age, policies aim to find new ways to address disadvantage, remove barriers to workforce participation, increase opportunities, build capacity and ensure that services are accessible and provide effective support for all. Education, training and workforce participation are fundamental to the Australian Government's goal of building a productive and fairer Australia.

For families, social and economic participation is facilitated by early intervention services, a strong child care sector and assistance with the cost of child care. Family policies promote healthy relationships, protection of at-risk children and parenting self-efficacy. Reforms, including those relating to child support and family breakdown, identify the responsibilities of both parents. Children and young people are encouraged to reach their potential and to participate with their families and community. Women's social and economic participation is supported by initiatives to improve safety, eliminate violence and encourage leadership.

For older Australians, social and economic participation is facilitated by adequate income in

retirement. Australia's retirement income system comprises a combination of government income support payments, mainly the Age Pension, and related non-cash benefits, compulsory superannuation and other private savings, including voluntary superannuation and home ownership. The introduction of an Age Pension Work Bonus and other tax and superannuation changes create incentives for older people to continue participating in the workforce.

Frail older Australians and people with disability, including mental illness and autism, are encouraged to participate in community life and to access available community and residential care services appropriate to their assessed needs. For carers, there is government and community support available and recognition that caring can be emotionally and physically challenging.

For the veteran community, service is acknowledged through provision of income support, compensation and rehabilitation, care and commemoration programs.

For communities, engagement is encouraged through partnerships between individuals, families, business, government and welfare and charitable organisations. A strong community sector and high levels of volunteering provide opportunities for individuals to participate in their communities and to engage and support others.

A number of organisations are involved in service delivery. Centrelink delivers services to over 6.5 million recipients on behalf of 25 policy agencies. The Family Assistance Office enables families to obtain their family payments in one place. The Department of Veterans' Affairs (DVA) delivers services to the veteran community. The tax system delivers a range of tax benefits, including income tax offsets and rebates. State and territory governments provide both ongoing services, such as legal aid, and emergency support services, such as assistance during the 2011 Queensland and Victorian floods. Non-government organisations deliver many services with Commonwealth funding, including family relationship services, financial literacy programs and support for people with disability.

Australia's responses to economic and social change occur within the context of a federal system that has significant redistributive elements and is underpinned by access to core services

including health, education and community services, as well as a strong safety net of income support payments. Responses occur in a complex global environment, where individuals may live, work and accrue entitlements in more than one country and international social security agreements share responsibility to close gaps in their social security coverage.

Income support

The largest component of welfare is the income support provided by the Australian Government. As at June 2010, over 4.9 million people, or more than one in five individuals, were direct beneficiaries of income support payments (excluding family tax benefit and child care support payments).

Australia's income support system has undergone significant reform in recent years, including responding to the 2008–09 global economic

recession and significant reforms to reduce welfare dependency and promote workforce participation. Broadly, the reforms aim to deliver payments to those who are most disadvantaged while encouraging those who can work to do so.

Pension reforms introduced from 20 September 2009 increased the pension rate, introduced a new pension indexation system, simplified and increased the flexibility of payments and introduced an age pensioner Work Bonus, while ensuring that the pension system remains sustainable now and into the future.

A package of reforms to student income support has been progressively implemented from April 2010 in response to the recommendations of the Bradley Review of Australian Higher Education. The reforms are consistent with the Government's goals of ensuring that students from low socio-economic backgrounds make up 20% of undergraduate enrolments by 2020 and

9.10 EXPENDITURE ON MAJOR INCOME SUPPORT PAYMENTS AND BENEFITS(a)

	2006–07	2007–08	2008–09	2009–10	2010–11
	\$'000	\$'000	\$'000	\$'000	\$'000
FAMILIES AND CHILDREN					
Family assistance					
Family Tax Benefit – Centrelink payments(b)	14 042 785	14 143 858	17 258 654	18 021 143	18 032 512
Family Assistance Scheme	2 310	..	..	..	..
Maternity Immunisation Allowance	56 234	61 290	50 411	34 954	35 813
Baby Bonus	1 161 616	1 213 174	1 399 926	1 398 431	1 176 973
Paid Parental Leave(c)	..	..	..	..	604 200
Double Orphan Pension	2 835	3 038	3 225	3 303	3 341
Child care(d)					
Child Care Benefit	1 452 379	1 723 839	1 621 515	1 819 218	nya
Jobs Education and Training (JET) Child Care fee assistance	43 035	15 604	27 356	44 724	nya
Child Care Rebate (previously Child Care Tax Rebate)	521 336	561 418	1 262 225	1 297 011	nya
CARERS					
Carer Payment(e)	1 408 052	1 690 889	1 938 825	2 269 422	2 729 643
Carer Allowance	1 349 030	1 591 330	1 801 012	1 477 650	1 604 734
SENIORS					
Age Pension	22 598 475	24 577 319	28 098 263	29 384 503	32 151 505
Aged Persons Savings Bonus(f)	2	..	..	..	..
Self-Funded Retirees' Supplementary Bonus(f)	21	..	..	..	..
Seniors Bonus(g)	..	1 400 000	..	..	..
Telephone Allowance for Commonwealth Seniors					
Health Card Holders(h)	11 867	16 538	18 185	..	..
Seniors Concession Allowance(h)	225 781	235 232	465 352	..	..
Seniors Supplement(h)				128 920	179 170
Utilities Allowance	146 821	630 261	1 172 662	28 247(i)	21 218(i)
Widow Class B Pension	3 689	5 805	7 204	6 966	6 993
Wife Pension (Age)	160 810	165 664	157 611	144 358	134 353
Wife Pension (DSP)	233 633	224 861	209 135	176 796	160 550

For footnotes see end of table.

...continued

9.10 EXPENDITURE ON MAJOR INCOME SUPPORT PAYMENTS AND BENEFITS(a) — *continued*

	2006–07	2007–08	2008–09	2009–10	2010–11
	\$'000	\$'000	\$'000	\$'000	\$'000
SPECIAL BENEFIT AND BEREAVEMENT					
Special Benefit	67 153	64 091	65 251	67 882	73 250
Bereavement Allowance	1 421	1 978	2 885	nya	nya
WORKING AGE					
Working age payments					
Newstart Allowance	4 493 978	4 180 817	4 885 930	6 136 811	6 148 714
Parenting Payment	5 913 090	5 392 742	5 296 419	5 467 123	5 579 521
Mature Age Allowance	87 831	28 939	840	..	..
Partner Allowance	522 075	431 064	375 971	280 651	216 422
Widow Allowance	505 342	480 081	508 317	441 134	405 975
Pensioner Education Supplement	73 489	69 795	69 562	79 350	85 877
Disability Support Pension	8 651 399	9 370 000	10 918 088	11 859 670	13 355 744
Mobility Allowance	106 371	114 070	118 546	123 983	129 999
Sickness Allowance	85 191	83 363	92 580	83 662	85 159
YOUTH AND STUDENTS					
Youth Allowance(j)	2 073 725	2 036 141	2 500 764	2 789 369	3 263 251
Austudy	217 540	227 894	353 500	343 385	418 819
ABSTUDY	155 603	157 934	191 026	199 149	210 846
VETERANS					
Income Support Program					
Service Pension	2 573 523	2 592 861	2 848 721	2 541 729	2 507 898
Income Support Supplement	336 747	356 299	350 299	402 084	414 487
ALL MAJOR INCOME SUPPORT PAYMENTS AND BENEFITS					
Total(k)	69 285 189	73 848 189	84 070 260	87 051 628	89 736 967

.. not applicable

nya not yet available

(a) Outlays on pensions, allowances and Family Tax Benefits include expenditure on Commonwealth Rent Assistance. Details of rent assistance are included in the *Housing* chapter.

(b) Does not include payments made by the Australian Taxation Office.

(c) Paid Parental Leave commenced 1 January 2011.

(d) 2007–08 child care data are a combination of part year data from the Department of Families, Housing, Community Services and Indigenous Affairs and the Department of Education, Employment and Workplace Relations. Previously published amounts prior to 2009–10 have been amended.

(e) Includes 'one-off' bonus payments in 2006–07 and 2007–08.

(f) Payments were introduced to compensate for the introduction of the GST in 2000.

(g) A one-off lump-sum bonus payment of \$500 paid to all income support recipients of age or veteran pension age, recipients of Seniors Concession Allowance and all recipients of Mature Age Allowance, Widow Allowance, Partner Allowance, Wife Pension and Widow B Pension.

(h) Seniors Supplement was introduced on 20 September 2009 to replace the former Seniors Concession Allowance and Telephone Allowance for eligible Commonwealth Seniors Health Card holders.

(i) Includes only Department of Education, Employment and Workplace Relations expenditure.

(j) Youth Allowance is composed of an allowance for full-time or part-time students aged 16–24 (Youth Allowance (students)) and unemployed young people aged under 21 (Youth Allowance (other)). Both are administered by the Department of Education, Employment and Workplace Relations.

(k) Total is for the above programs only and does not include some minor income support payments.

Source: *Department of Families, Housing, Community Services and Indigenous Affairs; Department of Education, Employment and Workplace Relations; Department of Veterans' Affairs; Department of Health and Ageing.*

that 40% of all 25–34 year olds have a bachelor degree or higher qualification by 2025.

As part of the 2011–12 Federal Budget, the Government introduced the Building Australia's Future Workforce package which encompassed reforms to the income support system, including

changes to Parenting Payment, Youth Allowance and Newstart Allowance.

Expenditure on the major income support payments and benefits is detailed in table 9.10.

Details of the maximum rates for the main income support payments are shown in table 9.11.

9.11 MAXIMUM FORTNIGHTLY RATES FOR MAIN INCOME SUPPORT PAYMENTS(a)

	2008	2009	2010	2011
	\$	\$	\$	\$
Austudy (single, no children)	355.40	371.40	377.00	388.70
Carer Allowance	100.60	105.10	106.70	110.00
FTB Part A (for 1 child under 13)(b)	145.46	151.34	156.94	160.30
FTB Part B (youngest child under 5)(b)	125.02	128.80	133.56	136.36
Newstart (single, no children)	437.10	453.30	462.80	474.90
Pensions (single)(c)	546.80	569.80	701.10	729.30
Parenting Payment (Partnered)	394.40	409.00	417.70	428.70
Rent Assistance (single with 3 or more children)	142.38	147.56	150.64	154.56
Income Support Supplement (DVA)	163.20	170.20	211.90	220.80
Youth Allowance (18 and over, at home)	233.90	244.40	248.10	255.80
Child Care Benefit-approved care (non-school age, one child)	3.37/hr	3.47/hr	3.60/hr	3.68/hr

(a) Not a complete list of income support payments. Rates for couples are not included. Rates are as at 30 June of each year.

(b) Family Tax Benefit supplement is not included.

(c) Maximum rate for age pension, disability support pension for people aged 21 and over, carer payments, and Department of Veterans' Affairs service pension. Includes pension supplements for 2010 and 2011.

Source: Centrelink, *A Guide to Australian Government Payments: 20 March – 30 June 2008, 20 March – 30 June 2009, 20 March – 30 June 2010 and 20 March – 30 June 2011*; Department of Veterans' Affairs.

Seniors

Australia's approach for retirement incomes combines a sustainable approach for generating retirement incomes, with targeted support for those who most need assistance. The retirement income system comprises three pillars:

- The Age Pension provides publicly funded income support that is not based on past contributions or previous earnings but on a person's current level of financial need. Seniors of pension age who do not meet the means test requirements for the Age Pension may be eligible for the Commonwealth Seniors Health Card.
- The Superannuation Guarantee – compulsory employer superannuation contributions of 9% of earnings – provides a framework for retirement savings. The Superannuation Guarantee has been operating since 1992, with the 9% minimum contribution in place since 2002. By around the year 2042, people who have had the full 9% superannuation guarantee across their working life will start to retire (assuming a 40 year working life).
- Voluntary superannuation saving and other forms of savings and investment, the most significant typically being owner occupied homes, enhance retirement savings.

The Age Pension is the main form of income support for seniors of pension age and the majority of seniors receive the payment. The

Age Pension comprises a base rate and a Pension Supplement. From 20 September 2009, for pensioners, the Government's Secure and Sustainable Pension Reform package combined the value of four allowances and supplements into the new Pension Supplement: the Utilities Allowance, the higher Internet rate of the Telephone Allowance, the GST Supplement and the Pharmaceutical Allowance.

The Age Pension is paid to people who meet age and residency requirements. The general Australian residency requirement for the Age Pension is ten years, although this can vary depending on a person's country of origin. Currently men qualify for the Age Pension at 65 years. Women's qualifying age is 64.5 years from 1 July 2011 and will reach 65 years by 2013. Through the pension reforms, from 2017, the Age Pension age for both men and women will gradually increase from 65 to 67 years by 2023.

The Age Pension is means tested. The rate of Age Pension a person receives depends upon their level of income and assets. If a person's assessable income or assets exceed certain thresholds, the Age Pension rate is reduced on a sliding scale. A Work Bonus was introduced through the pension reforms. Under enhanced Work Bonus arrangements, the first \$250 earned in a fortnight from employment by age pensioners is excluded from the pension income test. That is, age pensioners can now have greater levels of income from employment before their pension rate is reduced.

9.12 AGE PENSIONERS(a)

		2006–07	2007–08	2008–09	2009–10	2010–11
Males	no.	815 912	868 179	906 769	939 442	967 291
Females	no.	1 136 774	1 171 126	1 210 761	1 218 861	1 257 836
Persons	no.	1 952 686	2 039 305	2 117 530	2 158 303	2 225 127
Total payments	\$'000	22 598 475	24 577 319	28 098 263	29 384 503	32 151 505

(a) Numbers are for the last payday/pay period in June and include age pension recipients paid by Department of Veterans' Affairs.

Source: Department of Families, Housing, Community Services and Indigenous Affairs.

The maximum base rate of the Age Pension is increased twice a year, in March and September, in line with changes in prices and wages. Through the Government's pension reforms, from 20 September 2009, pension rates were increased and the maximum single base rate of pension was raised to two-thirds of the combined partnered rate. New pension reform indexation arrangements that better reflect the cost of living increases experienced by pensioners were also introduced in the pension reforms. The Age Pension base rate is now indexed by the greater of the movement in the Consumer Price Index or the Pensioner and Beneficiary Living Cost Index. From 20 March 2010, the benchmark for single pensioners increased from 25% to around 28% of Male Total Average Weekly Earnings (42% for pensioner couples combined).

Wife Pension and Widow B Pension were closed to new claimants in the 1990s as these dependency-based payments do not promote participation by women of workforce age.

Supplementary assistance is provided to eligible recipients through Rent Assistance for private renters, Remote Area Allowance for eligible recipients and concession cards. Pensioners may choose to receive a proportion of the Pension Supplement quarterly, instead of fortnightly, to assist with budgeting. Also, the supplementary payments Pharmaceutical Allowance, Utilities Allowance and Telephone Allowance were combined with the Pension GST Supplement into a new Pension Supplement for most pensioners. Seniors Concession Allowance and Telephone Allowance were combined into a Seniors Supplement for self-funded retirees who hold the Commonwealth Seniors Health Card.

The number of age pensioners and the expenditure on the Age Pension is shown in table 9.12.

Aged care

The Australian Government aims to ensure that all frail older Australians have timely access to appropriate care and support services as they age, by providing: information assessment and referral mechanisms, needs-based planning arrangements, support for special needs groups and for carers, a choice of service types, and high quality, accessible and affordable care through a safe and secure aged care system. Particular groups (notably Aboriginal and Torres Strait Islander people) can require various services at a younger age. One in four people aged 70 years and over plus Aboriginal and Torres Strait Islander people aged 50–69 makes some use of aged care. While most remain in their own home and use community care, one in ten uses a residential care facility.

National health and aged care reform

The Australian Government, in partnership with all states and territories, committed to the National Health Reform Agreement on 2 August 2011. The agreement cements the commitment made at the 13 February 2011 Council of Australian Governments (COAG) meeting and will see all governments working together to reform the health system.

At the COAG meeting, the Australian Government and state and territory governments signed the Heads of Agreement – National Health Reform. The Heads of Agreement – National Health Reform reaffirmed earlier decisions taken under the National Health and Hospitals Network Agreement that (other than in Victoria and WA):

- The Australian Government will take:
 - full policy and funding responsibility for aged care services (for all people 65 years or over and Aboriginal and Torres Strait Islander people aged 50–64 years), including those provided under the Home and Community Care (HACC) Program, and

- funding responsibility for specialist disability services delivered under the National Disability Agreement for people aged 65 years or over and for Aboriginal and Torres Strait Islander people aged 50–64 years.
- State and territory governments will take:
 - full policy and funding responsibility for disability services for people aged under 65 years and for Aboriginal and Torres Strait Islander people aged under 50 years, including those currently provided under the HACC Program, and
 - funding responsibility for packaged community care and residential care delivered through aged care programs to people aged under 65 years (except for Aboriginal and Torres Strait Islander people aged 50–64 years).

It has been agreed that the HACC Program reforms will occur over two phases (except in Victoria and WA).

- Phase 1: From 1 July 2011 until 30 June 2012 – the Australian Government will continue to fund state and territory governments to manage the HACC Program, but the relative funding contributions of governments will change. The Australian Government will fully fund HACC services for all people aged 65 years or over and Aboriginal and Torres Strait Islander people aged 50–64 years.
- Phase 2: From 1 July 2012 – the Australian Government will fund and manage the HACC Program services for clients aged 65 years and over and for Aboriginal and Torres Strait Islander people clients aged 50–64 years. State and territory governments will fund and manage the HACC Program services for clients aged under 65 years and Aboriginal and Torres Strait Islander clients aged under 50 years.

Until otherwise agreed, the changes to roles and responsibilities for basic community care, aged care and disability services and the reconciliation arrangements do not apply to Victoria and Western Australia. In these states, basic community care will continue to be delivered under HACC as a joint Commonwealth–state funded program. The Commonwealth and these states will maintain bilateral agreements for that purpose.

A key objective in implementing the new arrangements will be to minimise disruption for care recipients and providers in both the aged care and disability support systems. In 2011–12, for aged care the Australian Government will develop and implement the program framework and information technology systems needed to support these changes. In the meantime, care recipients will continue to receive services from their current providers, while administration and funding transitions to the new arrangements.

Other Australian Government aged care initiatives that have been implemented from 1 July 2011 include:

- the introduction of one-stop shops, beginning with a new national telephone number and improved website, with the aim of making it easier for older people and their carers to access information about aged care
- effective from 1 October 2011, enhanced prudential regulations to better protect the bonds paid by older people to residential aged care providers, and
- funding to state and territory governments to contribute to ensuring that long stay older patients receive appropriate care while they remain in hospital for longer than would otherwise be necessary while they secure an appropriate community or residential aged care place.

Assessment for aged care

Aged Care Assessment Teams (ACATs) ensure that access to aged care services is based on care needs. Individuals must be assessed as eligible and approved by an ACAT before their care can be subsidised by the Australian Government. In 2010–11, the Australian Government provided \$80.8 million to state and territory governments for the operation of 108 ACATs.

Places and funding

Aged care places are allocated in proportion to the number of people aged 70 years and older in the general population, and current levels of service provision, including newly allocated places that have not yet become operational. Allocation takes account of people with special needs, including people from Aboriginal and Torres Strait Islander communities. Table 9.13 shows the number of operational aged care

9.13 NUMBER OF AGED CARE PLACES(a)

	2006–07	2007–08	2008–09	2009–10	2010–11
Operational					
Transition care	1 594	1,963	2 228	2 698	3 349
Community care(b)	42 316	46 475	47 431	51 530	58 471
Residential care	169 594	174 669	178 379	182 936	185 559
Total Operational	213 504	223 107	228 038	237 164	247 379
Allocated	236 748	247 371	257 978	258 626	nya

nya not yet available

(a) As at 30 June, includes flexible care places attributed as residential or community care.

(b) Includes Community Aged Care Packages and Extended Aged Care at Home Packages. From 2010–11, includes Consumer Directed Care packages.

Source: Department of Health and Ageing.

places at 30 June in each of the years from 2006–07 to 2010–11. There were 247,379 operational aged care places at 30 June 2011, equating to a ratio of 114.3 places per 1,000 people aged 70 years or older. There were 258,626 places allocated at 30 June 2010. The Australian Government's expenditure on aged care in 2010–11 was \$11.02 billion (includes expenditure by the Department of Veteran's Affairs on residential aged care).

Transition care

The Transition Care Program is a jointly funded program between the Australian Government and the state and territory governments. It assists older people when they are discharged from hospital and provides them with time-limited, goal-oriented and therapy-focused packages of services after a hospital stay. These packages include low intensity therapy (such as physiotherapy and occupational therapy), social work and nursing support or personal care. Transition care is designed to improve older people's independence and confidence after a hospital stay. It allows them to return home rather than prematurely enter residential care. The program also gives older people and their families and carers time to consider long-term care arrangements. Transition care can be provided in either a home-like residential setting or in the community.

Care in the community

Most older people want to remain in their own homes as long as possible – close to family and friends, and the shops, churches and activities, with which they are familiar. Community care maximises their independence and assists them and their families and carers where necessary

through practical support. Assistance with activities of daily life may include, for example, shopping, bathing, dressing, cooking, cleaning, gardening and home maintenance.

Three main programs provide care to people in their own homes:

- Home and Community Care (HACC) is a joint government initiative to assist frail aged people, people with disability, and carers. HACC services assist people with lower levels of care needs than those who receive residential care or community care packages.
- Community Aged Care Packages (CACPs) provide low level care in the home for frail older people who have complex care needs requiring planning and case management.
- Extended Aged Care at Home (EACH) assists frail aged people with complex care needs to stay in their own homes as an alternative to high-level residential care. Typically, the packages include some nursing services. EACH-D packages assist people with dementia to remain longer in the community.

Other aged care programs use flexible, or more targeted, approaches. These include multi-purpose services in rural and remote areas, services provided through the National Aboriginal and Torres Strait Islander Aged Care Strategy and targeted initiatives to meet particular needs, such as dementia, incontinence, or loss of hearing or vision.

The Australian Government is also funding Consumer Directed Care (CDC) in Australian Government community aged care programs to test an alternative model of care. CDC is a two year initiative which commenced in 2010–11

9.14 EXPENDITURE FOR SELECTED AGED CARE PROGRAMS

	2006-07	2007-08	2008-09	2009-10	2010-11
	\$m	\$m	\$m	\$m	\$m
Community care programs					
Home and Community Care (HACC) Program	928.4	1 006.7	1 094.4	1 186.7	1 290.9
Community Aged Care Packages (CACAP) Program	404.8	447.8	479.7	508.7	531.7
Extended Aged Care at Home (EACH) Program	103.9	198.8	256.3	305.6	364.8
Other aged care programs					
Aged Care Assessment	61.5	69.3	72.3	76.4	69.3
Assistance with Care and Housing for the Aged (ACHA) Program	2.7	3.5	4.3	4.4	4.6
National Respite for Carers Program (NRCP)	166.8	173.5	184.1	200.0	202.9
Commonwealth Respite and Carelink Centres (CRCC)	16.2	16.4	17.4	18.0	17.8
Dementia Specific Programs(a)	25.2	31.2	31.4	28.7	31.5
Day Therapy Centres	33.9	34.6	34.8	36.4	36.2
National Continence Management Strategy (NCMS)	2.5	4.2	3.8	2.8	3.8

(a) Excludes national dementia initiatives funded under NRCP.

Source: Department of Health and Ageing.

and provides older people and their carers with greater involvement and control over the design and delivery of community care services provided to them.

Table 9.14 shows Australian Government expenditure on selected aged care programs.

Residential aged care

The Department of Health and Ageing subsidises and regulates residential care for frail older people. Most residential care is provided by the non-government sector, including not-for-profit and private sector providers. Targeted capital assistance is available to aged care homes catering largely for residents with special needs or on low incomes, or located in rural and remote areas of Australia. A more detailed description can be found in chapter 10 *Housing*.

Veterans, members of the Australian defence force and their families

The Australian Government supports those who serve, or have served, in defence of Australia by providing compensation and income support entitlements, delivering health care and rehabilitation services, and fulfilling Australia's commitment to remember and honour them.

Compensation payments

Compensation is paid to veterans, their war widow(er)s and their dependants for the effects of war-caused injury or disease resulting from eligible war or defence service. Injuries or diseases must have been caused or aggravated by

war service, or certain defence service, on behalf of Australia. Rates depend on incapacity and lifestyle:

- General Rate Disability Pension is payable to a veteran as compensation for the impairment and lifestyle effects of war or defence service.
- Extreme Disablement Adjustment is payable to a severely incapacitated veteran who has reached 65 years of age and is not eligible to receive the Special or Intermediate Rate.
- Intermediate Rate Pension is payable to a veteran who is only able to undertake part-time or intermittent employment of up to 20 hours per week.
- Special (Totally and Permanently Incapacitated) Rate Pension is payable to a veteran who is prevented from working more than eight hours per week.

Table 9.15 shows the number of pensioners by type and total expenditure on disability and war widow(er)s' pensions.

The Veterans' Children Education Scheme provides financial help, guidance and counselling to certain students up to 25 years of age. At June 2009, there were 3,750 beneficiaries. Total expenditure in 2008-09 was \$15.3 million and in June 2010 the corresponding figures were 3,380 and \$16.4 million respectively.

Military compensation

The DVA is responsible for providing benefits through the *Safety, Rehabilitation and*

9.15 DISABILITY AND WAR WIDOW(ER)S' PENSIONERS(a)

Recipient		2006–07	2007–08	2008–09	2009–10	2010–11
Incapacitated veterans	no.	139 727	134 311	128 146	122 355	116 498
General Rate - from 10% to 100%	no.	96 174	91 057	85 630	80 737	76 168
Extreme Disablement Adjustment	no.	13 582	12 946	12 137	11 315	10 219
Intermediate Rate	no.	917	880	842	825	796
Special Rate (TPI or equivalent)	no.	29 054	29 428	29 537	29 478	29 315
Wives and widows(b)	no.	29 627	26 815	24 299	..	..
Children(b)	no.	91	49	14	..	..
War widows and widowers(c)	no.	110 590	108 023	104 760	101 090	96 761
Orphans	no.	198	193	201	190	187
Other dependants	no.	500	485	469	449	431
Total(d)	no.	278 927	268 125	256 201	222 876	212 749
Total expenditure(e)	\$'000	2 935 541	3 053 007	3 132 713	3 292 895	3 370 980

.. not applicable

(a) Number of recipients as at the last payday/pay period in June.

(b) Wives/children of incapacitated veterans and widows of deceased veterans who did not die from an accepted war caused condition were granted dependant pension up until 6 June 1985. No new grants have been made since and those who did not choose to commute their payments to a lump sum had their payments frozen. In September 2009, dependant pension ceased to be payable.

(c) Widows and widowers of deceased veterans who have died from an accepted war caused condition.

(d) The totals do not equal the sum of the components due to overlaps.

(e) Includes associated allowances.

Source: Department of Veterans' Affairs.

Compensation Act 1988 (SRCA) (Cwlth) for injuries and diseases related to service prior to 1 July 2004 and through the *Military Rehabilitation and Compensation Act 2004* (MRCA) (Cwlth). Table 9.16 summarises activities under these Acts for financial years 2007–08 to 2010–11.

Income support for veterans

There are several income support pensions payable to veterans and their dependants:

- Age Service Pension (ASP) is payable to male veterans with qualifying service at 60 years of age. ASP is similar to the Age Pension, but is granted five years earlier. The minimum age at which a female veteran can be granted ASP is progressively rising from 55 to 60 years in six-monthly increments every two years over the period 1995–2013.
- Invalidity Service Pension is payable to veterans with qualifying service if they are permanently incapacitated for work.
- Partner Service Pension (PSP) is payable on the basis that the person is the partner or widow(er) of a veteran with qualifying service. PSP is similar to the Age Pension, but is granted five years earlier. There is further concession on the age requirement where the couple have a dependent child, or the person is the partner

of a veteran who receives the Special (TPI) Rate of disability pension or where the partner is 50 years of age or over and the veteran is receiving disability pension above the general rate.

- Income Support Supplement is payable to war or defence widow(er)s.

Depending on the individual's circumstances, recipients of income support payments may be eligible for supplementary benefits including the Defence Force Income Support Allowance, Rent Assistance, Remote Area Allowance and Pension Supplement. The Defence Force Income Support Allowance may only be payable if a person receives both an income support payment under the *Social Security Act* (Cwlth) and an Adjusted Disability Pension under the *Veterans' Entitlements Act* (Cwlth). Self-funded retirees may be eligible for Seniors Supplement to assist with payment of energy, rates, water and sewerage expenses and telephone and Internet expenses.

Table 9.17 shows the total number of recipients and annual expenditure on service pensions.

Defence Service Homes Scheme: loans and insurance

The Defence Service Homes Scheme provides financial benefits, including housing loan

9.16 MILITARY COMPENSATION AND REHABILITATION SERVICE, Activities

		2007-08		2008-09		2009-10		2010-11	
		SRCA(a)	MRCA(b)	SRCA(a)	MRCA(b)	SRCA(a)	MRCA(b)	SRCA(a)	MRCA(b)
Total lump sum and incapacity payees for 12 months ended 30 June (incl. dependent children)	no.	4 338	1 009	3 857	1 327	3 653	1 785	3 597	1 929
New primary injury claims received	no.	3 327	2 450	3 469	3 180	3 430	3 181	3 161	3 386
New permanent impairment claims received	no.	3 326	1 481	2 886	1 336	3 167	1 538	2 936	1 935
New rehabilitation referrals received	no.	530	345	503	345	467	374	496	474
New reconsideration requests received	no.	869	248	733	295	740	372	746	477
New applications made to the AAT(c)	no.	190	73	170	48	117	31	122	44
All accounts paid (incl. medical household services and attendant care)	no.	100 769	9 179	100 027	8 782	105 630	12 537	105 249	14 812
Total Expenditure		\$000 113 588	30 838	119 286	41 824	110 844	62 416	114 367	77 096

(a) Benefits paid through the *Safety, Rehabilitation and Compensation Act 1988* (SCRA) (Cwlth).

(b) Benefits paid through the *Military Rehabilitation and Compensation Act 2004* (MRCA) (Cwlth).

(c) Administrative Appeals Tribunal.

Source: Department of Veterans' Affairs.

9.17 SERVICE PENSIONERS(a)

		2006-07	2007-08	2008-09	2009-10	2010-11
Veterans						
Old age	no.	94 903	89 893	83 838	79 521	75 663
Permanently incapacitated	no.	18 742	18 641	18 180	15 812	12 964
Tuberculosis(b)	no.	53	46	35	30	25
Total	no.	113 698	108 580	102 053	95 363	88 652
Wives and widows	no.	96 864	93 959	88 972	83 879	78 716
Total	no.	210 562	202 539	191 025	179 242	167 368
Total expenditure(c)	\$'000	2 910 271	2 949 160	3 199 020	2 979 363	2 955 080

(a) Number of recipients as at the last payday/pay period in June.

(b) Eligibility on these grounds ceased on 2 November 1978.

(c) Includes associated allowances and Income Support Supplement recipients.

Source: Department of Veterans' Affairs.

interest subsidies, comprehensive home owners' insurance cover at competitive rates, and home contents insurance. At 30 June 2010 and 2011, 76,320 and 73,940 homes respectively, were insured. The corresponding numbers of loan accounts were 22,913 and 20,329, while the corresponding amounts of subsidy paid were \$3.6 million and \$3.2 million.

Health program

Health care treatment is provided to all veterans of Australia's defence force who are aged 70 years and over and who have qualifying service, war widows/widowers and eligible dependants of a deceased veteran. Veteran service pensioners who satisfy the treatment benefits means test are also eligible for comprehensive health care. People whose disabilities have been accepted by the DVA as service-related are eligible for health care through DVA, or to reimbursement of the

costs of reasonable treatment. Many veterans are provided with treatment through DVA for pulmonary tuberculosis, post-traumatic stress disorder and malignant neoplasia whether they are service-related or not. Vietnam veterans with anxiety and depression and Gulf War veterans with undiagnosable conditions are also eligible for health care treatment whether the conditions are service-related or not.

The Veterans and Veterans Families Counselling Service (VVCS) provides intake assessment, counselling, case management services and group programs to veterans of all conflicts and their families, as well as working with the ex-service community to promote awareness and understanding of mental health problems in the veteran community. Table 9.18 shows use of the VVCS.

9.18 VETERANS AND VETERANS FAMILIES COUNSELLING SERVICE(a)

Type of counselling		2006–07	2007–08(b)	2008–09(b)	2009–10	2010–11
Centre-based consultation	sessions	23 197	21 526	19 990	17 865	17 323
Group session consultation	hours	10 605	10 067	9 997	8 484	9 270
Country outreach consultation	sessions	36 306	30 618	34 028	37 720	40 733
Intake and assessment(c)	sessions	..	5 964	11 458	10 791	11 647

.. not applicable

(a) Prior to April 2007 the Veterans and Veterans Families Counselling Service was known as the Vietnam Veterans Counselling Service.

(b) Previously published figures for 2007–08 and 2008–09 have been updated.

(c) In January 2008, VVCS introduced recording Intake and Assessment service activity. Previously, only those clients who were allocated for counselling had this recorded as the first session. This service is now captured separately and includes all contacts of a clinical nature regardless of whether they are allocated for centre or outreach counselling.

Source: Department of Veterans' Affairs.

In addition, and subject to conditions, health care treatment in Australia is provided to certain veterans of Australia's defence forces for all health conditions. War widow(er)s and certain other dependants of deceased veterans are also entitled to treatment for all conditions.

Other services include vocational rehabilitation services, acute hospital care, dental and pharmaceutical assistance, and transport assistance.

People of working age

Working age payments

Working age payments provide financial assistance to people who are unemployed, and looking for work or participating in employment preparation programs, or have parenting responsibilities. Newstart Allowance, Parenting Payment (partnered and single) and Youth Allowance (see later section on Youth services and support) are the main payments available to people of working age.

From July 2006, working age payment policies changed to focus more on increasing workforce participation and reducing welfare dependency. In return for financial support, working age people with a capacity to work are expected to participate in the paid workforce, or demonstrate that they are looking for work or undertaking activities to improve their employment prospects, such as further study, training or approved voluntary work. Participation requirements are modified for those with reduced work capacity due to disability or caring responsibilities.

Newstart Allowance is payable for eligible jobseekers aged 21 years or over and under age pension age. Newstart Allowance recipients have access to employment services that provide a range of integrated services and include special help for retrenched workers and youth. Recipients also have participation requirements; however, these are designed to accommodate factors such as caring responsibilities, disability, age and location.

Parenting Payment is the main income support payment for people with sole or primary responsibility for the care of a young child. Single parents who claim income support after 1 July 2006 may be eligible for Parenting Payment (Single) until their youngest child turns eight. Partnered parents may be eligible for Parenting Payment (Partnered) until their youngest child turns six. These parents are required to look for part-time work of at least 15 hours a week or undertake another approved activity when their youngest child turns six.

People receiving Parenting Payment before 1 July 2006 can remain on this payment until their youngest child turns 16 as long as they continue to meet all eligibility requirements. These parents have part-time work eligibility requirements from 1 July 2007 or when their youngest child turns seven, whichever is the later. Since 1 July 2011, if additional children come into a person's care, the person will no longer be covered by these transitional arrangements in respect of the additional children.

Jobseekers and parents (including the most disadvantaged such as the long-term unemployed) have access to Job Services Australia, the Australian Government's employment services. Job Services Australia is an integrated service that provides jobseekers with a personalised service with a strong focus on skills development and training, work experience and tailored interventions to suit individual needs and circumstances. There are strong links between the employment services providers and local employers. Parents also have access to child care assistance to enable workforce participation.

Disability Employment Services are also available to help jobseekers with disability, injury or health conditions find work. All eligible jobseekers with disability have access to individually tailored and comprehensive services including capacity building, training, work experience and other interventions to help participants obtain and maintain suitable employment.

Recipients of Widow Allowance and Partner Allowance (closed to new claimants from September 2003) do not have participation requirements; however, employment services are available to them should they wish to get help to find work.

9.19 WORKING AGE ALLOWANCES(a)(b)

		2006-07	2007-08	2008-09	2009-10	2010-11
Newstart Allowance						
Short-term (less than 12 months)						
Males	no.	104 439	100 418	176 906	143 736	125 824
Females	no.	55 764	55 674	84 698	78 641	71 179
Persons	no.	160 203	156 092	261 604	222 377	197 003
Long-term (12 months and over)						
Males	no.	158 344	142 322	149 200	195 301	188 156
Females	no.	99 246	100 987	109 390	136 215	142 321
Persons	no.	257 590	243 309	258 590	331 516	330 477
Total payments	\$'000	4 493 978	4 180 817	4 885 930	6 136 811	6 148 714
Parenting Payment						
Single						
Males	no.	25 677	20 559	18 348	16 793	15 749
Females	no.	369 818	340 074	325 748	316 719	310 499
Persons	no.	395 495	360 633	344 096	333 512	326 248
Total payments	\$'000	4 696 298	4 368 571	4 281 362	4 389 343	4 531 454
Partnered						
Persons	no.	144 427	125 922	129 365	124 910	117 754
Total payments	\$'000	1 216 792	1 024 171	1 015 057	1 077 780	1 048 067
Mature Age Allowance						
Recipients	no.	5 032	754	—	—	—
Total payments	\$'000	87 831	28 939	840	—	—
Partner Allowance(c)						
Recipients	no.	45 988	38 456	29 369	24 054	17 147
Total payments	\$'000	522 075	431 064	375 971	280 651	216 422
Widow Allowance						
Recipients	no.	40 247	39 131	36 086	33 886	29 341
Total payments	\$'000	505 342	480 081	508 317	441 134	405 975
Sickness Allowance						
Recipients	no.	7 624	7 437	6 968	6 703	6 705
Total payments	\$'000	85 191	69 795	69 562	83 662	85 159
Pensioner Education Supplement						
Recipients	no.	47 362	46 713	48 386	57 345	54 310
Total payments	\$'000	73 489	83 363	92 580	79 350	85 877

— nil or rounded to zero (including null cells)

(a) Number of recipients as at the last payday/pay period in June.

(b) The number of Newstart, Mature Age, Partner and Widow Allowance recipients in this table excludes Community Development Employment Projects (CDEP) participants.

(c) Closed to new entrants from 20 September 2003.

Source: Department of Education, Employment and Workplace Relations.

Other working age payments include:

- Special Benefit, an income support payment for people in severe financial hardship who are not eligible for any other type of payment and who have no other means of support or capacity to earn a sufficient livelihood
- Bereavement Allowance, a short-term payment for people without dependent children whose partner has recently died, and
- Sickness Allowance, which may be paid to people aged between 21 years and Age Pension age who are temporarily unable to work or continue with their full-time study due to illness or injury, but who have a job or study to return to.

Other supplementary payments include:

- Pensioner Education Supplement, a fortnightly income supplement for single parents or people with disability who are studying
- Education Entry Payment, a lump sum payment for those commencing approved study
- Training Supplement, a fortnightly supplementary payment for recipients of Newstart Allowance and Parenting Payment (single) who undertake approved training during the period 1 July 2009 to 30 June 2011, and
- Language, Literacy and Numeracy Supplement to assist people with the costs of participating in the Language, Literacy and Numeracy Program.

Table 9.19 shows the number of Newstart Allowance, Parenting Payment and other working age allowances recipients, together with expenditure on these allowances.

People with disability

Specialist disability services and assistance are available to help people with disability, including mental illness and autism, and their families and carers, to participate actively in community and economic life, access a responsive and sustainable safety net and support services, and develop their capabilities.

Disability Support Pension

Disability Support Pension (DSP) is an income support payment for people with a physical, intellectual or psychiatric impairment assessed at 20 points or more under the impairment tables and who have a continuing inability to work. This includes being unable to work for at least 15 hours a week, at or above the relevant minimum wage, independently of a program of support (or be re-skilled for work) within the next two years.

DSP is income and assets tested. The assessable income and assets of a person receiving DSP, and their partner (if applicable), must be below certain amounts for full or part pension to be payable. Income and assets tests do not apply to blind DSP recipients.

DSP is paid at the same rate as Age Pension, for people aged 21 and over, and includes the Pension Supplement.

Youth rates apply to those under age 21 without children and include a Youth Disability Supplement. DSP youth rates are not subject to parental income or assets tests. People receiving youth rates of DSP also receive Pharmaceutical Allowance, Utilities Allowance and Telephone Allowance if eligible.

People receiving DSP also receive a Pensioner Concession Card, and may be eligible for additional assistance including Rent Assistance, Mobility Allowance, the Pensioner Education Supplement and an Education Entry Payment.

DSP recipients with some capacity to work are encouraged and supported to work where possible. From 1 July 2012 certain DSP recipients under age 35 will be required to attend participation interviews with Centrelink to develop an individualised participation plan aimed at building their capacity.

Disability Employment Services are available to help jobseekers with disability, injury or health conditions find work. All eligible jobseekers with disability have access to individually tailored and comprehensive services including capacity building, training, work experience and other interventions to help participants obtain and maintain suitable employment.

Table 9.20 shows the number of recipients of Disability Support Pension, and expenditure by payment type.

9.20 SUPPORT FOR PEOPLE WITH DISABILITY(a)

		2006–07	2007–08	2008–09	2009–10	2010–11
Disability Support Pension						
Males	no.	413 033	413 484	422 290	433 456	446 600
Females	no.	301 123	318 883	334 828	359 125	372 250
Persons	no.	714 156	732 367	757 118	792 581	818 850
Total payments	\$'000	8 651 399	9 370 000	10 918 088	11 859 670	13 355 744
Mobility Allowance						
Recipients	no.	54 942	55 299	56 080	57 349	58 868
Total payments	\$'000	106 371	114 070	118 546	123 983	129 999

a) Number of recipients as at the last payday/pay period in June.

Source: Department of Families, Housing, Community Services and Indigenous Affairs; Department of Education, Employment and Workplace Relations.

National Disability Strategy

The National Disability Strategy 2010–2020 was formally endorsed by the Council of Australian Governments (COAG) on 13 February 2011 and launched by the Australian Government on 18 March 2011. This represents the first time in Australia's history that all governments have committed to a unified, national approach to improving the lives of people with disability, their families and carers.

The strategy outlines a 10-year national policy framework to improve the lives of people with disability, promote participation, and create a more inclusive society. It will guide public policy across governments and aims to bring about changes to all mainstream services and programs, as well as community infrastructure, to ensure they are accessible and responsive to the needs of people with disability. This change is important to ensuring that people with disability have the same opportunities as other Australians – a quality education, good health, economic security, a job where possible, access to buildings and transport, and strong social networks and supports.

The strategy will also be an important mechanism to ensure that the principles underpinning the United Nations Convention on the Rights of Persons with Disabilities are incorporated into policies, services and programs affecting people with disability, their families and carers.

The purpose of the strategy is to:

- establish a high level policy framework to give coherence to, and guide government activity across mainstream and disability-specific areas of public policy

- drive improved performance of mainstream services in delivering outcomes for people with disability
- give visibility to disability issues and ensure they are included in the development and implementation of all public policy that impacts on people with disability, and
- provide national leadership toward greater inclusion of people with disability.

The strategy focuses on six public policy areas to drive better outcomes for people with disability:

1. inclusive and accessible communities – the physical environment including public transport, parks, buildings and housing, digital information and communications technologies, and civic life including social, sporting, recreational and cultural life
2. rights protection, justice and legislation – statutory protections such as anti-discrimination measures, complaints mechanisms, advocacy, and the electoral and justice systems
3. economic security – jobs, business opportunities, financial independence, adequate income support for those not able to work, and housing
4. personal and community support – inclusion and participation in the community, person-centred care and support provided by specialist disability services and mainstream services, and informal care and support
5. learning and skills – early childhood education and care, schools, further education, vocational education, transitions

from education to employment, and life-long learning, and

6. health and wellbeing – health services, health promotion and the interaction between health and disability systems, and wellbeing and enjoyment of life.

Under each of the areas of policy action, governments have agreed to policy directions, together with areas for future action. The strategy will be implemented in collaboration with people with disability, their families and carers, and other key stakeholders, and will be reviewed and amended as necessary to ensure it continues to drive better outcomes for people with disability.

A first year report on the strategy will be presented to the Council of Australian Governments (COAG) in February 2012. Every two years, a high level progress report will track achievements under the strategy and provide a picture of how people with disability are faring. The first biennial progress report will be presented to COAG in February 2014.

National Disability Agreement (NDA)

The National Disability Agreement (NDA), which replaces the Commonwealth State Territory Disability Agreement (CSTDA) came into effect from 1 January 2009.

Under the new agreement, the Australian Government will provide more than \$7.6 billion in funding over five and a half years to the state and territory governments for specialist disability services. The agreement means that in 2014–15 the Commonwealth Government's contribution will exceed \$1.4 billion, compared to \$620 million in 2007.

Under the agreement, the Australian Government is responsible for employment and income support, while state and territory governments are responsible for specialist delivery services such as supported accommodation, targeted support and respite.

State and territory governments, in consultation with the Commonwealth, have agreed to develop a system comprising single access points for disability services, consistent assessment processes, quality assurance systems and more consistent access to aids and equipment as national priorities. Together, these reforms will provide a responsive system of disability support

that is easy to access and responds flexibly to people's changing needs.

Through the agreement, the Australian Government is providing funding to state and territory governments for more services to help with the reform of the disability service system.

Younger People with Disability in Residential Aged Care initiative

Residential aged care is often not the best accommodation and care option for younger people with disability. In June 2006, there were around 6,500 people under the age of 65 years in residential aged care, of whom 1,007 were aged under 50 years.

At the Council of Australian Governments (COAG) meeting in February 2006, the Australian, state and territory governments committed up to \$244 million in matched funding in the Younger People with Disability in Residential Aged Care (YPIRAC) initiative, for a five-year period. As funding for the YPIRAC initiative is now included as part of National Disability Specific Purpose Payment, funding is therefore ongoing.

The aim of the initiative is to move young people with disability out of residential aged care into more appropriate accommodation, divert those at-risk of admission to residential aged care and provide enhanced services to those who choose to remain in residential aged care. The initial priority group is people under 50 years of age; however, where possible, people aged less than 65 years are also included.

In June 2010, there were around 715 people under the age of 50 years in residential aged care compared to 1,007 in June 2006, a reduction of 29%. Since the initiative began, 1,141 younger people with disability have been assisted with YPIRAC services.

National Mental Health and Disability Employment Strategy

The Australian Government's Social Inclusion Agenda promotes participation and access to resources for all Australians. As part of the Social Inclusion Agenda, the Australian Government has developed a National Mental Health and Disability Employment Strategy. The objective of the strategy is to increase the employment of people with disability, promote social inclusion and improve national economic productivity.

Initiatives have been developed to ensure that Australians with disability and mental illness have improved opportunities to search, find and maintain employment.

Disability Employment Services commenced on 1 March 2010, and is supported by two programs: Program A for eligible jobseekers who require the assistance of a Disability Employment Service but are not expected to need long-term support in the workplace, and Program B for jobseekers with a permanent disability and with an assessed need for more long-term, regular support in the workplace. Participants work with their provider to develop their own Employment Pathway Plan and access to an Employment Assistance Fund is available to assist with finding and maintaining employment such as workplace modifications and Auslan interpreting services.

All eligible jobseekers with disability will have access to individually tailored and comprehensive services that meet their needs including capacity building, training, work experience and other interventions to help participants obtain and maintain suitable employment.

A key distinguishing feature of Disability Employment Services is its capacity to support and manage a participant's condition in the workplace, along with providing ongoing support in the workplace for as long as it is required.

Supported employment

The Australian Government funds Australian Disability Enterprises to help them with the cost of supporting people with moderate to severe disability who need substantial ongoing support to maintain employment.

Australian Disability Enterprises are commercial enterprises employing people with disability to engage in a wide variety of work tasks such as packaging, assembly, production, recycling, screen printing, plant nursery, garden maintenance and landscaping, cleaning services, laundry services and food services. An Australian Disability Enterprise gives people with disability the opportunity to have a real job, with real wages, in a real business.

In 2010–11, 202 organisations in 321 outlets were funded across Australia to provide supported employment to 22,531 people with disability.

Community-based mental health support

Community-based mental health support services play an important role in helping people with mental illness and their families and carers to manage the impact of mental illness. The Targeted Community Care (Mental Health) Program funds flexible community-based mental health services that assist individuals affected by mental illness to live more independent lives and provide practical assistance and support to their families and carers.

Under Targeted Community Care:

- Personal Helpers and Mentors services provide recovery support for individuals whose lives have been severely affected by mental illness.
- Family Mental Health Support services provide early intervention support to assist vulnerable families with children and young people who are affected by mental illness.
- Mental Health Respite: Carer Support services provide carers and families of people with mental illness with a range of services, including respite care and activities such as peer support and education that assist them in their caring role.

Through the 2011–12 Budget, \$269.3 million will be invested over five years in these community-based mental health support services to assist more than 37,000 Australians with mental illness and their carers.

Carers

Carers play an important role in providing daily care and support to people with disability, people with medical condition, people with mental illness and the aged. In providing this assistance and support, carers make a significant social and economic contribution to Australian society. Whilst informal care can be a positive experience for both the carer and care receiver, it can also affect the carer who may need additional support to ensure that they have the opportunity to enjoy optimum health, social, and economic wellbeing, and to participate in family, social and community life, employment and education. There are 2.6 million carers in Australia and the demand for carers is expected to increase as the population ages.

9.21 SUPPORT FOR CARERS(a)

		2006–07	2007–08	2008–09	2009–10	2010–11
Carer Payment						
Recipients	no.	116 614	130 657	146 870	168 913	186 065
Total payments(b)	\$'000	1 408 052	1 690 889	1 938 825	2 269 422	2 729 643
Carer Allowance						
Recipients	no.	393 263	422 905	461 086	495 733	521 033
Total payments(b)	\$'000	1 349 030	1 591 330	1 801 012	1 477 650	1 604 734

(a) Numbers are as at the last payday/pay period in June.

(b) Includes some 'one-off' bonus payments in 2006–07 and 2008–09. For Carer Allowance, includes Child Disability Assistance Payments in 2007–08.

Source: Department of Families, Housing, Community Services and Indigenous Affairs.

Income support

There are two main forms of financial support for carers. Carer Payment is an income and assets tested income support payment paid at the same rate as other social security pensions to people who, because of the demands of their caring role, are unable to support themselves through substantial paid employment. The payment includes the Pension Supplement which combines the full value of Utilities Allowance, Pharmaceutical Allowance, the GST Supplement and Internet rate of Telephone Allowance into one payment.

Carer Allowance is a supplementary payment for carers who provide daily care and attention in a private home for people with disability or severe medical condition who need significant additional care and attention. Carer Allowance is not income and assets tested. On 1 July 2010, a single assessment process for Carer Payment (child) and Carer Allowance (child) was introduced.

A Carer Supplement of \$600 was introduced in 2009 and is paid to recipients of Carer Allowance for each person being cared for. Carer Supplement is also paid to:

- recipients of Carer Payment
- recipients of both Wife Pension and Carer Allowance
- recipients of both Department of Veterans' Affairs Partner Service Pension and Carer Allowance, and
- recipients of Department of Veterans' Affairs Carer Service pension.

The Carer Supplement is paid to carers who are in receipt of a qualifying payment for the period that covers 1 July each year. The Child Disability

Assistance Payment is a \$1,000 annual payment made in July for a child with disability under 16 years who attracts a payment of Carer Allowance for their carer. Table 9.21 shows the number of recipients and expenditure on support for carers.

Carer services and assistance

To help carers cope with the daily challenges of being a carer, the Australian Government funds the national network of Commonwealth Respite and Carelink Centres to deliver respite support programs including Respite Support for Carers of Young People with Severe or Profound Disability and Young Carers Respite and Information Services. The Australian Government also funds services delivered through the HACC Program and practical and financial support. Other non-financial assistance to carers includes special measures for young carers, people with mental illness and carers of people with intellectual disability, assistance to parents with disabled children with severe disability, and projects to address the impacts of long-term caring.

National Carer Recognition Framework

The Australian Government has implemented the National Carer Recognition Framework in recognition of the contribution that carers make to society. The framework comprises two elements: the *Carer Recognition Act 2010* (Cwlth) and the National Carer Strategy.

The *Carer Recognition Act 2010* (Cwlth) came into effect on 18 November 2010 to formally recognise carers. The Act aims to ensure that carers are considered in the development, implementation and evaluation of Australian Government policies, programs and services that directly affect them or the person they care for.

The National Carer Strategy was launched on 3 August 2011. The strategy is the Australian Government's long-term commitment to better support carers and to ensure that they have rights, choices, opportunities and capabilities to participate in work, community and family life. The strategy builds on what the Australian Government already provides for carers and is supported by a \$60 million dollar package of measures to improve carers' economic security and to raise community awareness of the contribution of carers. State and territory governments have welcomed the strategy and have committed to identifying complementary initiatives to better support carers.

Youth and students

Income support

Youth Allowance supports young people aged 16–20 years actively seeking employment and full-time students aged 16–24 years. It is subject to a personal income and assets test. If the young person is not independent, then parental income, family assets, and family actual means tests also apply. The rate of payment depends on age and circumstances.

In April 2009, the Council of Australian Governments (COAG) agreed to a Compact with Young Australians to increase young people's engagement with education and training pathways. Part of this compact comprises the National Youth Participation Requirements for

young Australians. From 1 July 2009, young people are considered to be early school leavers until they have completed Year 12 or an equivalent qualification (Certificate Level II). Early school leavers are required to participate in full-time study or training, or in part-time study or training in combination with other approved activities, for a total of 25 hours per week. Principal carer parents or those with a partial capacity to work have reduced participation requirements of 15 hours per week.

Austudy is a means tested income support payment provided to students or Australian apprentices, aged 25 years and over. To qualify for assistance, a person must be undertaking qualifying study (full-time or a concessional study load) in an approved course at an approved educational institution, and be an Australian resident currently residing in Australia.

ABSTUDY is the Aboriginal and Torres Strait Islander Study Assistance Scheme that provides a means tested living allowance and other supplementary benefits to eligible Aboriginal and Torres Strait Islander Australian secondary and tertiary students. To qualify for assistance a person must be undertaking full-time study in an approved course at an approved educational institution and meet residency requirements.

Supplementary assistance may be provided to eligible recipients through Remote Area Allowance, Pharmaceutical Allowance, Telephone Allowance and concession cards.

9.22 YOUTH AND STUDENT SUPPORT(a)

		2006–07	2007–08	2008–09	2009–10	2010–11
Youth Allowance (YA)						
Full-time students	no.	266 383	256 634	278 664	295 763	325 224
Other(b)	no.	68 698	64 907	82 907	88 459	85 972
Total YA population	no.	335 081	321 541	361 571	384 222	411 196
Total YA payments	\$'000	2 073 725	2 036 141	2 500 764	2 789 369	3 263 251
Austudy(c)						
Recipients	no.	27 869	28 776	34 175	31 860	39,213
Total payments	\$'000	217 540	227 894	353 500	343 385	418 819
ABSTUDY(c)						
Recipients(c)	no.	34 489	33 776	34 612	36 255	37 107
Total payments	\$'000	155 603	157 934	191 026	199 149	210 846

(a) Number of recipients as at the last payday in June. Australian Apprentices became eligible for income support from 1 July 2005 and are included in the above figures.

(b) Jobseekers and part-time students – including those undertaking full-time training/agreement study.

(c) Consistent with other recipient numbers, the number of Austudy and ABSTUDY recipients has, since 2007–08, been reported as a point-in-time population. Figures for 2006–07 have been revised with the new methodology to allow comparison with later years.

Source: Department of Education, Employment and Workplace Relations.

Family Tax Benefit (FTB) may be available to help families with the cost of raising a young person who is not receiving Youth Allowance or a similar payment. It may be payable for a young person up to 21 years of age, or aged between 21 and 24 years who is studying full-time.

Table 9.22 shows the number of recipients of, and the expenditure on, youth and student support.

Youth services and support

Young jobseekers can receive assistance in finding employment through Job Services Australia, which replaced the previous Job Network on 1 July 2009. All young people aged 15–20 years not in full-time education and who are registered with Centrelink as looking for work can access the full range of employment services, whether they receive income support or not. Across Australia, there are Job Services Australia providers that assist youth with their skills development to obtain sustainable employment. There are also Job Services Australia providers that are youth specialists.

Young jobseekers with complex or multiple non-vocational barriers, such as mental illness, homelessness and social problems, can now access employment services immediately and access funds for interventions such as counselling, help with crisis accommodation or referrals to specialist support services.

Young jobseekers with disability also have access to Disability Employment Services. Providers of this service can work on early intervention partnerships with schools, so that eligible students with disability can access the help they need to transition from school to employment.

Other programs are available to help disengaged and disadvantaged young people to improve their level of engagement with their families and community to overcome barriers to participation in education and employment. These programs include the National Green Jobs Corps, Mentor Marketplace, YouthLinX, Youth Development and Support Transition to Independent Living Allowance, Indigenous Youth Mobility, Career Advice Australia, Australian Apprenticeships and Australian Apprenticeship Access Program, and Strengthening and Supporting Families Coping with Illicit Drug Use.

Families

Families form the basic unit of home life for most Australian people. The level of family assistance provided by the Australian Government has increased significantly over recent years.

Payments to assist families include Family Tax Benefit (FTB); Child Care Benefit; Child Care Tax Rebate; Jobs, Education and Training Child Care fee assistance; and the Baby Bonus and Paid Parental Leave (PPL). The highest rates of payment go to low-income families. The Australian Government also funds counselling services to help keep families together.

Family payments

Family assistance policies assist with the costs of raising children, including newborns, in ways that recognise the needs and choices of single and dual income families.

FTB Part A helps families with the cost of raising dependent children. It is paid to eligible families with dependent children up to 21 years, and young people between 21 and 24 years who are studying full-time. Payments are made for each dependent child who is not receiving Youth Allowance or a similar payment. FTB Part A is subject to a family income test and provides access to supplementary payments, including Rent Assistance, Large Family Supplement and Multiple Birth Allowance. There is also a supplement payable after the end of the financial year.

FTB Part B provides extra assistance for families with only one main income earner and for sole-parent families. Unlike FTB Part A, it is paid per family, not per dependent child. Families must have at least one dependent child aged under 16 years, or aged 16–18 years who is studying full-time. The child must not be receiving Youth Allowance or similar payment. FTB Part B has a higher rate of payment where the youngest child is under five years of age. There is also an end of year supplement.

FTB payments are paid through the Family Assistance Office or the tax system. As at the end of June 2009, approximately 1.8 million families with 3.4 million children received FTB Part A, and 1.4 million families received FTB Part B via fortnightly payments from the Family Assistance Office.

9.23 FAMILY ASSISTANCE

		2006-07	2007-08	2008-09	2009-10	2010-11
Family Tax Benefit						
Centrelink						
Recipients(a)						
Part A – fortnightly instalments(b)	no.	1 769 091	1 734 000	1 773 000	1 738 000	1 638 000
Part B – fortnightly instalments(b)	no.	1 376 917	1 359 000	1 365 000	1 381 000	1 357 000
Lump sum payments(c)	no.	..	62 503	80 774	65 184	156 000
Claims lodged with ATO but to be paid by the FAO(d)	no.	8 262	13 177	24 015	..	..
Total payments (Part A and Part B)(e)	\$'000	14 042 785	14 143 858	17 258 654	18 021 143	18 032 512
Australian Taxation Office(d)						
Recipients(a)(f)						
Paid on assessment	no.	145 276	150 875	159 585	..	..
Payments						
Paid on assessment(f)	\$'000	489 000	..	..	..	..
Reconciliation credits(e)(f)	\$'000	1 478 000	1 661 000	1 677 000	..	..
Family Assistance Scheme	\$'000	2 130	..	..	..	..
Baby Bonus						
Recipients	no.	286 770	285 000	278 000	268 000	219 000
Payments(g)	\$'000	1 161 616	1 213 174	1 399 926	1 398 431	1 176 973
Paid Parental Leave						
Recipients(h)	no.	..	..	..	..	43 000
Payments	\$'000	..	..	..	..	604 200
Maternity Immunisation Allowance						
Recipients	no.	223 567	260 000	269 000	270 000	267 000
Payments(g)	\$'000	56 234	61 290	50 411	34 954	35 813
Double Orphan Pension						
Recipients	no.	1 330	1 400	1 400	1 400	1 300
Payments(g)	\$'000	2 835	3 038	3 105	3 303	3 341

.. not applicable

- (a) Recipients who claimed assistance using more than one payment method for the year are included in each category.
- (b) This provides a count of the recipients eligible for payment at the time of data extraction (in June of the relevant tax year). It does not show all the recipients who are eligible throughout the course of the year.
- (c) Figures for lump sum payments refer to payments made in the relevant tax year ending 30 June for the FTB entitlement for the previous year.
- (d) From 1 July 2009, claims for family tax benefit, including previous year claims, were no longer accepted by the ATO.
- (e) This refers to payments to recipients who received FTB via fortnightly instalment from the FAO but were paid top-ups by the ATO after they lodged their tax return and were reconciled. Reconciliation credits from the 2004-05 financial year also include FTB Part A supplement.
- (f) Number of recipients and expenditure refer to FTB payments made by the ATO within the relevant financial year.
- (g) Expenditure refers to total payments to end of June of the relevant tax year.
- (h) An additional 11,500 families were eligible for PPL for births prior to 1 July 2011, but had not commenced payment by early August.

Source: Department of Families, Housing, Community Services and Indigenous Affairs.

Baby Bonus is available to families following the birth (including still birth) or adoption of a baby up to the age of two years. Baby Bonus recognises the extra costs incurred at the time of a new birth or the adoption of a very young child.

The Paid Parental Leave (PPL) Scheme is an entitlement for working parents of children born or adopted from 1 January 2011. Eligible working parents can get 18 weeks of government funded Parental Leave Pay at the rate of the National Minimum Wage. This pay is taxable.

The scheme provides financial support to families to enable more parents to stay at home and care for their children full-time during the vital early months following birth or adoption. To be eligible for the scheme, a person must be the primary carer of a child, and meet the residency, work and income tests. Employers are required to provide government-funded Parental Leave Pay to their eligible, long-term employees. Other payments to families include Maternity Immunisation Allowance and Double Orphan Pension.

Table 9.23 shows the number of recipients of, and the expenditure on, family assistance.

Services for families

The Family Support Program (FSP) helps to support families, particularly vulnerable and disadvantaged families, to improve child wellbeing and development, safety and family functioning through the provision of integrated support services.

This program funds a range of non-government organisations to provide preventative and early intervention family support services, focusing on family relationships, parenting and family law services to help navigate life's transitions, and to help families who are vulnerable to poor outcomes to build their resources and capabilities to enable more positive family functioning.

The Family Support Program provides broad-based services that complement other Australian Government programs such as family payments and child care. The FSP also provides more intensive assistance in disadvantaged areas that complements the important roles of other programs and agencies, including the statutory responsibility for child protection held by state and territory governments.

From 1 July 2011, the Family Support Program will comprise two core streams:

1. Family and Children's Services and
2. Family Law Services.

The Family and Children's Services will be streamlined to four services types:

- Communities for Children Services: including Indigenous Parenting Support Services to provide prevention and early intervention services to families with children up to age 12 and who are at risk of disadvantage
- Family and Relationship Services: dealing with adult relationship issues, counselling for young people and children, and broader parenting support
- Specialist Services: which have particular knowledge and skills for dealing with vulnerable families affected by issues such as drugs, violence and trauma, and
- Community Playgroups: to support parents with young children.

9.24 FAMILY RELATIONSHIP SERVICES/CHILDREN AND PARENTING SERVICES

	2010–11
Family Relationship Services	
Number of clients assisted(a)	
Registered	113 181
Unregistered	124 477
Mensline calls	51 308
Children and Parenting Services	
Number of clients assisted(b)	549 105

(a) As at 15 August 2011. Figures include Family Counselling services, which are jointly funded by FaHCSIA and the Attorney-General's Department.

(b) Includes both engagement with low-intensity services, such as community playgroups, and more intensive assistance, such as Responding Early Assisting Children.

Source: Department of Families, Housing, Community Services and Indigenous Affairs.

The Family Law Services stream aims to provide alternatives to formal legal processes for families who are separated, separating or in dispute to improve their relationships in the best interests of children. These services are funded through the Attorney-General's Department.

Family Law Services are delivered through six activity types:

- Family Relationship Centres
- Post Separation Co-operative Parenting
- Supporting Children after Separation Program
- Parenting Orders Program
- Children's Contact Services and
- Family Dispute Resolution.

Table 9.24 shows the number of clients assisted under Family Relationship Services and Children and Parenting Services in the 2010–11 financial year.

Children

Child Support Scheme

The Child Support Agency (CSA) manages the assessment, collection and enforcement of child support liabilities. It aims to ensure that parents continue to financially support their children after separation, according to their capacity. The total child support liabilities in 2010–11 were \$1.2 billion.

Assistance with child care costs

The Department of Education, Employment and Workplace Relations (DEEWR) develops policies that give more children access to early childhood development support, education and family care.

Access to child care is vital for many families to enable them to participate effectively in the workforce. Child Care Benefit approved services include long day care, family day care, in home care, outside school hours care, vacation care and occasional care. Flexible services that can combine various models of care are available to meet the needs of families in rural and remote areas.

There are two main forms of payment for child care support:

- Child Care Benefit (CCB) helps families with the cost of CCB approved child care, and provides financial assistance that is proportionally higher for lower income families. Eligible families can have CCB paid directly to the CCB approved child care service to reduce their child care fees. Alternatively, they can receive CCB as a lump sum at the end of the financial year.
- Child Care Rebate (CCR) is a payment available to working families using CCB approved child care for work, training or study purposes. Families can receive 50% of out-of-pocket child care expenses up to an annual cap.

From the 2006–07 financial year, eligible families were paid their CCR through the Family Assistance Office as an annual payment, rather

than through the tax system. This meant that families who previously could not access the full benefit of the CCR due to low or no tax liability were able to claim the full rebate.

In the 2009 Budget, the Australian Government announced the removal of the minimum rate of CCB, which was paid to all eligible families regardless of income, replacing it with an extended means-tested rate that tapers until the payment rate reaches zero. The income level at which the CCB cuts out depends on the number of children using approved child care. This measure came into effect on 1 July 2008.

Families with a CCB entitlement of zero due to their income level may still be eligible for the CCR. The CCR is not income-tested, so working families using CCB approved child care can receive this assistance regardless of their income.

Previously, the CCR covered 30% of approved out-of-pocket child care costs, up to a maximum of \$4,354 per child per year. In July 2008, the rate of the rebate increased significantly to cover 50% of out-of-pocket costs up to a maximum of \$7,500 per child per year. From July 2008, families have also been able to receive the CCR as a quarterly payment rather than as an annual payment to ensure that it is provided closer to the time they incur their child care expenses. The first quarterly payments were made through the Family Assistance Office in October 2008.

For the 2009–10 and 2010–11 financial years, the rate of the rebate covered 50% of out-of-pocket costs up to the maximum indexed rate of \$7,778 and \$7,941 respectively, per child per year.

9.25 CHILD CARE SUPPORT(a)

		2005–06	2006–07	2007–08	2008–09	2009–10
Child Care Benefit (CCB)						
Approved service(a)	no.	734 600	749 500	7 942 100	773 350	806 550
Registered carers(b)	no.	58 200	52 000	60 200	nya	nya
Payments	\$'000	1 501 287	1 452 379	1 723 839	1 621 515	1 819 218
Jobs Education and Training (JET) Child Care						
Recipients(c)	no.	18 188	18 364	20 310	22 720	28 530
Payments	\$'000	21 658	43 035	46 281	nya	44 724

nya not yet available

(a) Number of recipients who used care over the financial year. Includes CCB paid to recipients as a reduction in service fees and potentially as a lump sum payment.

(b) CCB for registered care is paid at the registered care rate.

(c) Number of parents receiving a JETCCFA assessment.

Source: Department of Education, Employment and Workplace Relations.

For the 2011–12, 2012–13 and 2013–14 income years, the CCR is capped at \$7,500 per child per year for CCB approved child care. From July 2011, families have the further option to receive the CCR paid fortnightly, either directly to their bank account or through their CCB approved child care service provider as a fee reduction. Families can still choose to receive their CCR paid quarterly or annually as a lump sum directly to their bank account.

Jobs, Education and Training (JET) Child Care fee assistance provides extra child care assistance to parents on income support who wish to undertake study, work or job search activities to enter or re-enter the workforce.

Table 9.25 shows the number of recipients of and expenditure on child care support.

Child Care Services Support Program (CCSSP)

The CCSSP complements assistance provided to families through Child Care Benefit (CCB). Funding to CCSSP was \$298 million in 2007–08. The program supports the provision of sustainable, quality child care and provides information to assist families to make informed decisions about child care. CCSSP helps to improve access for children and families with special and/or additional needs. CCSSP funding targets assistance to areas where a service may not otherwise be viable. This ensures that similar services in similar circumstances receive the same funding.

Child Care Management System (CCMS)

Over \$73 million was invested to develop the CCMS to provide the best information on child care supply and usage. CCMS was implemented progressively across child care services from January 2008 through to 30 June 2009. CCMS brings all approved child care providers online to standardise and simplify the administration of CCB.

Outside School Hours Care for Teenagers with Disability

This activity, introduced in 2008, provides students with disability, aged 12 to 18 years, and their families, with quality outside school hours care. Outside schools hours care includes before school, after school and holiday care. In the 2009 Budget, the Australian Government announced

a total of \$5.1 million in additional funding over four years to the 2012–13 financial year, to extend Outside School Hours Care for Teenagers with Disability, bringing total funding to \$27.6 million over the four years.

Helping Children with Autism package

The Australian Government is committed to providing improved support for children with autism spectrum disorders (ASDs), their families and carers. To help address the need for support and services for children with ASDs, the Australian Government is delivering the \$220 million Helping Children with Autism (HCWA) package. This is the first national initiative to help families deal with this challenging disorder and is a major breakthrough in support for children and their families and carers.

The package includes early intervention funding, autism advisors to provide advice, information and support following diagnosis, workshops, an ASD website and 150 PlayConnect Playgroups specifically for families and children with ASDs.

To date, Autism Advisors have supported 16,248 children and 14,736 children have accessed early intervention funding.

Better Start for Children with Disability initiative

Building on the success of the Helping Children with Autism package, a new initiative – A Better Start for Children with Disability – commenced on 1 July 2011. The Australian Government has committed \$147 million over four years to increase access to targeted early intervention services for children with Down syndrome, cerebral palsy, Fragile X syndrome, and moderate or greater vision or hearing impairments. Children with a confirmed diagnosis of one of the listed disabilities must be under 6 years of age to register for the early intervention funding, with the funding being available until they turn 7.

The funding also includes access to new allied health-related Medicare items. Registration for the early intervention funding is managed by Carers Australia through its state and territory associations.

As at 23 September, over 1,676 children had been registered. In the first year of operation, it is expected that around 6,000 children with the listed disabilities will register.

Communities

The strength of community functioning has a large impact on individual, family and community wellbeing. Voluntary work and the way people use their time can affect this functioning. All levels of government seek to support and strengthen communities through provision of services, either directly or by subsidising the activities of third parties.

Community Investment Program

The Community Investment Program aims to build social inclusion for vulnerable people by supporting organisations to recognise, evaluate and address key problems in communities. Key strategies under the program include:

- **Community Projects** – The Government is providing over \$16 million in funding over three years to 60 not-for-profit organisations to deliver responsive and integrated services that meet local community needs and help individuals participate in their community.
- **Peak community-based organisations** – The Government provides financial support to a range of peak community-based organisations. These peak organisations represent the interests of the community in six broad areas: welfare, family, community, children, homelessness and disability. The organisations contribute to government policy and communicate Government information to their memberships and the sectors they represent.
- **Community Support Services** – In 2011–12, \$13.7 million is allocated to 63 organisations to provide the Community Support Service across 87 locations across Australia. Community Support Service supports social inclusion and community cohesion and assists in addressing Aboriginal and Torres Strait Islander disadvantage by better linking Aboriginal and Torres Strait Islander people to broader community services.
- **Volunteer Grants** – These are grants of between \$1,000 and \$5,000 to not-for-profit community organisations to assist and support the valuable work of their volunteers. The grants allow them to purchase small equipment items such as computers, photocopiers, first aid kits, and contribute to volunteers' fuel costs incurred when carrying out their voluntary work. In

2011–12, the Government is supporting Australian volunteers by providing \$16 million in discretionary grants to more than 4,000 volunteering organisations under the program.

- **Broadband for Seniors** – This initiative supports older Australians in gaining the confidence and skills they need to use new technology. The initiative provides free access to computers and the Internet, as well as training in basic computing skills. The Government will invest \$10.4 million to June 2015 to support the 2,000 kiosks established across Australia.

Financial inclusion and capability

In 2010–11, \$123 million was provided through the Financial Management Program (FMP). The FMP aims to improve the financial resilience of vulnerable individuals and families through several mechanisms, including financial counselling, crisis assistance, asset-building incentives such as matched savings schemes, and minimising the impacts of problem gambling.

In 2010–11, over one million people accessed support services funded under the FMP.

Financial Management Program services are voluntary, free and confidential. The services are available to people who are experiencing personal financial difficulties due to circumstances such as unemployment, sickness, credit over-commitment and family breakdown or to individuals who would like to build their financial skills. Service strategies include:

- **Emergency Relief** – Emergency Relief services provide support to address immediate needs in time of crisis. Assistance includes food parcels and clothing, transport, chemist vouchers, help with accommodation, payment of bills, budgeting assistance and sometimes cash. Importantly, Emergency Relief agencies provide appropriate referrals to other services that help to address underlying causes of financial crisis.
- **Commonwealth Financial Counselling** – Financial counsellors help people in financial difficulty address their financial problems and make informed choices through provision of information, advocacy and/or negotiation, referral, community education and networking/liaison.

- Money Management – Money Management services currently operate in remote communities, predominantly supporting Aboriginal and Torres Strait Islander people including income management participants. They provide practical and essential support to help people build longer-term capability to manage their money better and increase financial resilience. They do not provide financial advice or deal with complex financial/legal matters but will facilitate access to financial counsellors for help with complex issues.
- Microfinance – Targeted towards building long-term financial resilience, microfinance programs that help vulnerable Australians build their financial self-reliance. These services assist individuals and families, particularly those on low incomes, to develop long-term practical financial management skills and increase their understanding of financial products and services.
- Community Development Financial Institutions pilot – The 12 month pilot supports Community Development Financial Institutions to provide microfinance and microenterprise loans and financial literacy education to marginalised Australians who are not able to access mainstream financial services, including Aboriginal and Torres Strait Islander and low-income Australians.
- Information on saving for retirement and retirement investments – The National Information Centre on Retirement Investments (NICRI), an independent body funded by the Australian Government, provides the public with free information on planning and saving for retirement, investment options, and effective use of financial resources in retirement.

The Government is also continuing to work with state and territory governments to expand the evidence base for problem gambling. The Government provided funding for Gambling Research Australia to commission national research into problem gambling. Gambling Research Australia is jointly funded by the Australian and state and territory governments.

The Government also funded the evaluation of voluntary pre-commitment trials in South Australia, and the evaluation of the Gambling

Help Online website (www.gamblinghelponline.org.au), which is jointly funded by state and territory governments.

Welfare Payments Reform – Income Management

Northern Territory

Legislation for the model of new income management was passed on 1 July 2010. The new model of non-discriminatory income management has been rolled out across the Northern Territory and is aimed at those in most need of support, including those with a high risk of social isolation, poor money management skills, and those likely to participate in risky behaviours. The model is aimed at the long-term unemployed, disengaged youth, people assessed as vulnerable by a Centrelink social worker, and people referred by a child protection worker. People can also volunteer if they are not subject to a compulsory measure.

Income management is designed to ensure that money is available for life essentials, and to provide a tool to stabilise people's circumstances, easing immediate financial stress. Income management also limits expenditure of income support payments on excluded items. Generally, 50% of a person's income support payment is income managed, but this rises to 70% under the Child Protection measure.

As at 1 July 2011, there were 17,418 people on income management in the Northern Territory. One-quarter of those people have chosen to participate in Voluntary Income Management.

Western Australia

Voluntary Income Management and Child Protection Income Management are available in Perth metropolitan areas and in the Kimberley. Voluntary Income Management assists people to meet their priority needs and to learn how to manage their finances for themselves and their family in the long term. Under Child Protection Income Management, the Department for Child Protection case workers can refer families to Centrelink where a child is at risk of neglect.

At 1 July 2011, 1,013 people participated in income management in Western Australia. Of these, 799 volunteered for income management and 214 were on the child protection measure.

BasicsCard

The BasicsCard is a PIN-protected card that operates through the existing EFTPOS infrastructure and can be used at approved BasicsCard merchants across Australia. It provides a secure way for recipients to receive their income-managed funds. At 30 June 2011, 97% of people (18,103) on income management had an active BasicsCard. Over \$156 million was spent through the BasicsCard in 2010–11, and over \$330 million since the BasicsCard was introduced in 2007.

Communities in harmony

A number of Australian Government programs have been established to encourage greater social integration of communities. The National Action Plan aims to build social cohesion, harmony and security. The Living in Harmony Program promotes community harmony and addresses issues of racial, religious and cultural intolerance within Australia. FaHCSIA's Bringing Communities Together Program works with different groups within the community.

Support for newly arrived migrants includes Newly Arrived Youth Support Services, Family Relationship Services for Humanitarian Entrants, Crisis Payment and child care inclusion programs.

The Family Community Network Initiative aims to enhance the capacity of communities and services to work together to address needs. It is administered by FaHCSIA and is currently primarily focused on supporting Aboriginal and Torres Strait Islander communities participating in the Council of Australian Governments (COAG) Indigenous Community Coordination Pilots around Australia.

Rural and remote support and services

Many rural and regional communities face economic challenges, declining population, lack of development opportunities, or high levels of unemployment and social disadvantage. Initiatives have been introduced to support employment and economic security for rural families, and economic sustainability for rural communities. Financial assistance packages are available for farmers, businesses, and Aboriginal and Torres Strait Islander and rural communities. In addition, Remote Area Allowance provides extra help for people in remote areas and is paid fortnightly along with the relevant pension or payment. At June 2007, there were 56,100 recipients.

Severe drought has a profound impact on rural and regional communities, the environment and the broader Australian economy. Drought affected farmers, rural communities and agriculture-dependent small businesses are being supported through income support, interest rate subsidies and free personal and financial counselling.

Natural disasters

The Australian Government provides national leadership in delivering recovery assistance in response to domestic and international disasters and critical incidents. Constitutional responsibility for the safety of its citizens lies primarily with state and territory governments but the Australian Government and its state and territory counterparts recognise that there are circumstances, such as in the event of natural disasters, where governments and communities can not 'do it alone'. They need financial and other help to respond to the emergency, provide immediate assistance to their citizens and recover from the toll that natural disasters take.

The Australian Government provides recovery assistance to disaster affected communities through the:

- Natural Disaster Relief and Recovery Arrangements (NDRRA)
- Australian Government Disaster Recovery Payment (AGDRP)
- ex gratia payments and
- Disaster Income Recovery Subsidy (DIRS).

It also provides support by:

- contributing to public appeals and disaster memorials and
- providing assistance, when requested, under agreed national plans (e.g. Commonwealth Disaster Response Plan).

Natural Disaster Relief and Recovery Arrangements

In recognition of the significant cost of natural disasters, the Australian Government provides financial assistance directly to state and territory governments through the NDRRA. The NDRRA is designed to alleviate the financial burden on the state and territory governments and to facilitate

the early provision of assistance to disaster affected communities.

The NDRRA reflects that state and territory governments are best placed to determine the type and level of assistance communities require following disasters. Assistance measures outlined in the NDRRA are intentionally non-prescriptive, preserving the Constitutional responsibilities of states and territories for protecting life and property and providing flexibility in the establishment of relief measures and criteria appropriate for the local conditions.

Sharing the cost of disaster recovery between the Commonwealth and states and territories occurs when recovery from a disaster is \$240,000 or more on NDRRA assistance measures. These measures of assistance may include:

- personal hardship and distress assistance to individuals and
- community recovery funds.

Additionally, when the state expenditure exceeds 0.225% of state revenue, the Commonwealth will contribute towards:

- restoration or replacement of essential public assets owned by state or local governments, such as schools and hospitals, and
- loans, subsidies, and grants to primary producers, small businesses, voluntary non-profit bodies, and individuals in need.

Australian Government Disaster Recovery Payment

The AGDRP provides a flexible natural and non-natural disaster recovery assistance payment, which can be used for either international disasters (e.g. the 2008 Mumbai attacks, the 2009 Samoa Tsunami and Sumatra earthquake)

or domestic disasters (e.g. the 2009 Victorian Bushfires and the December 2010–February 2011 severe weather and flooding across Queensland, New South Wales and Victoria).

Adult Australian residents who are affected by an eligible natural or non-natural disaster, whether within Australia or internationally, can claim the payment and receive financial assistance for themselves and their children to aid with their recovery. It is a one-off payment, intended as a helping hand that can be accessed immediately. The AGDRP provides \$1,000 per eligible adult and \$400 per eligible child. It is not means tested and is tax exempt.

Ex gratia payments

An ex gratia payment allows the Australian Government to deliver targeted financial recovery assistance; it is particularly useful in allowing government to respond promptly to emergencies with offers of financial aid and other assistance to those affected. In response to the 2010–11 summer of natural disasters, the Australian Government offered an ex gratia payment equivalent to the AGDRP for New Zealanders with ‘non-protected’ Special Category Visas (subclass 444) who had been adversely affected by a disaster in local government areas where the AGDRP had been made available.

Disaster Income Recovery Subsidy

DIRS provides temporary financial assistance to employees, small business persons and farmers who can demonstrate that they have experienced a loss of income as a direct result of a major disaster. It provides fortnightly payments equivalent to the maximum relevant rate of Newstart Allowance or Youth Allowance for a period of up to 13 weeks, and when activated, is available to Australian residents and eligible foreign nationals.

The 2010–11 summer of natural disasters

The natural disasters that struck Australia between November 2010 and February 2011 saw more than 99% of Queensland disasters declared, with 37 lives lost. During the same period, all other Australian states and the Northern Territory experienced severe weather events or other natural disasters, such as bushfires.

The total cost of relief and recovery will not be completely realised for some years, but the recovery assistance for the 2010–11 natural disasters are well above the historical average. Queensland received an advance payment of \$2.256 billion under the Natural Disaster Relief and Recovery Arrangements for relief and recovery activities associated with the floods and Tropical Cyclone Yasi, while Victoria received a \$500 million advance payment for its flood recovery work.

The Australian Government Disaster Recovery Payment (AGDRP) supported over 700,000 Australians adversely affected by these disasters, including:

- Queensland floods in December 2010 and January 2011
- New South Wales floods in January 2011

- Victoria floods in January and February 2011
- Tropical Cyclone Yasi in February 2011
- Western Australia floods in December 2010 and
- Western Australia bushfires in February 2011.

Approximately 3,000 eligible New Zealanders living in Australia received assistance equivalent to the AGDRP.

The Disaster Income Recovery Subsidy was provided to approximately 62,000 eligible employees, small business persons and farmers affected by severe weather in Queensland, New South Wales, Victoria, South Australia, Western Australia and Tasmania.

A special article, *La Niña and the floods of 2010–11*, can be found in chapter 1 *Geography and climate*.

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10

HOUSING

Housing satisfies the essential needs of people for shelter, security and privacy. Shelter is recognised throughout the world as a basic human right. The adequacy or otherwise of housing is an important component of individual wellbeing. Housing also has great significance in the national economy, through its relationships with investment levels, interest rates, building activity and employment.

In the 1920s, the Australian Government started providing financial assistance for home ownership to moderate and low income earners. Governments have continued to actively promote home ownership as part of an overall policy directed at achieving people's self-reliance in housing and a quality of housing adequate for their needs. Australia has one of the highest rates of home ownership in the world. Governments also provide assistance to low income households to rent suitable and affordable housing.

The predominance of separate, free-standing houses situated on 'quarter-acre blocks' has historically been a feature of Australian urban development. More recently, governments have moved to promote higher housing density in order to provide greater choice of housing types and to make better use of existing infrastructure.

This chapter provides information on the types of dwellings Australians live in, their tenure type and housing costs. It also looks at a range of factors associated with buying a home, including home loans, house prices and the characteristics of recent home-buyer households. It includes comparisons between states and territories and between households at different life cycle stages. Most of the statistics are from the 2009–10 Survey of Income and Housing, conducted by the Australian Bureau of Statistics (ABS).

Information on construction of residential dwellings can be found in chapter 21, *Construction*.

This chapter contains the special article, *Co-operative housing in Victoria*.

Other related information can be found in chapter 9 *Income and welfare* and chapter 29 *Prices*.

Types of dwellings

A small proportion of Australians live in institutional settings such as hostels, boarding houses, residential colleges, staff quarters, prisons and nursing homes. However, the vast majority (around 98%) are members of households living in private self-contained dwellings such as houses, flats or units.

Of the 8.4 million households living in private dwellings in 2009–10, 79% were living in separate houses, 11% in flats, units or apartments, and 10% in semi-detached, row or terrace houses or townhouses.

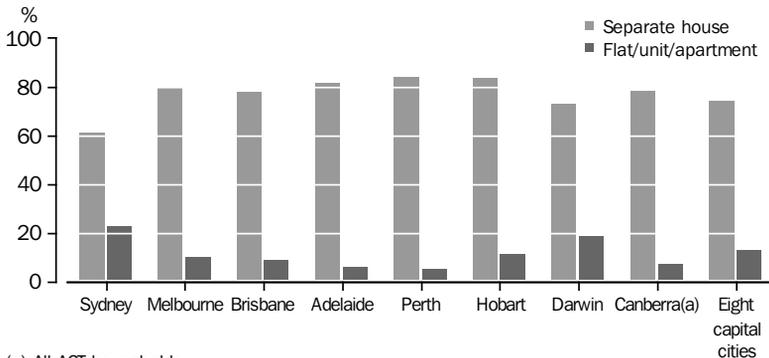
For Australia's five most populous cities (Sydney, Melbourne, Brisbane, Perth and Adelaide) the proportion of households living in separate houses ranged from 61% in Sydney to 84% in Perth. The average across all eight capital cities was 74% (graph 10.1). Outside of capital cities, the proportion of households living in separate houses was higher – more than 81% in all states

and territories except Queensland. Higher density housing was most common in capital cities, particularly in Sydney, where 23% of households were living in flats, units or apartments in 2009–10.

Separate houses are generally larger and have more bedrooms than other dwelling types. Typically, separate houses have three or four bedrooms; semi-detached houses have two or three bedrooms; and flats, units or apartments have one or two bedrooms.

The three-bedroom house is by far the most common type of dwelling in Australia. In 2009–10, 40% of all households were living in separate houses with three bedrooms, while a further 30% were living in houses with four or more bedrooms (table 10.2). In total, 78% of households were living in dwellings (mainly houses) with three or more bedrooms, 18% were living in two-bedroom dwellings and 4% were living in one-bedroom dwellings (mainly flats, units or apartments).

10.1 CAPITAL CITY HOUSEHOLDS, By dwelling structure—2009–10



(a) All ACT households.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

10.2 ALL HOUSEHOLDS, By dwelling structure and number of bedrooms—2009–10

	Dwelling structure			ALL HOUSEHOLDS(a)	
	Separate house '000	Semi-detached/row or terrace house/townhouse '000	Flat/unit/apartment '000	'000	%
One bedroom	53.0	51.4	201.3	313.6	3.7
Two bedrooms	618.8	348.2	556.6	1 528.7	18.2
Three bedrooms	3 383.1	394.7	113.2	3 892.3	46.3
Four or more bedrooms	2 544.6	82.1	*7.7	2 639.3	31.4
Total(b)	6 601.7	877.3	899.4	8 398.5	100.0

* estimate has a relative standard error greater of 25% to 50% and should be used with caution

(a) Includes other dwelling structures.

(b) Includes bed-sits and dwellings with no bedrooms.

Source: ABS data available on request, *Survey of Income and Housing*.

Housing utilisation

While Australian households are becoming smaller on average, dwelling size (as indicated by the number of bedrooms) is increasing. The average number of persons per household has declined from 3.1 in 1976 to 2.6 in 2009–10. In the same period, the proportion of dwellings with four or more bedrooms has risen from 17% to 31% and the average number of bedrooms per dwelling has increased from 2.8 to 3.1.

In 2009–10, most households enjoyed relatively spacious accommodation. For example, 87% of lone person households were living in dwellings with two or more bedrooms; 76% of two person households had three or more bedrooms; and 35% of three person households had four or more bedrooms. Over a fifth (22%) of three-bedroom dwellings, and 9% of four-bedroom dwellings, had only one person living in them (table 10.3).

The Canadian National Occupancy Standard (CNOS) is widely used internationally as an indicator of housing utilisation. The measure assesses the bedroom requirements of a household by specifying that:

- There should be no more than two persons per bedroom.
- Children less than 5 years of age and of different sexes may reasonably share a bedroom.
- Children less than 18 years of age and of the same sex may reasonably share a bedroom.
- Single household members aged 18 years and over should have a separate bedroom, as should parents or couples.

- A lone person household may reasonably occupy a bed-sitter.

The CNOS compares the number of bedrooms required with the actual number of bedrooms in the dwelling. Households living in dwellings where this standard cannot be met are considered to be overcrowded.

Only 3% of Australian households in 2009–10 were assessed as needing one or more extra bedrooms to meet this occupancy standard. The proportion of households experiencing overcrowding was highest among households with five or more members (21%), and among households living in one-bedroom (7%) or two-bedroom (5%) dwellings.

In contrast, 79% of households had one or more bedrooms above the number required to meet the standard (table 10.22). The proportion of households with spare bedrooms was highest among two person households (91%).

As households pass through different life cycle stages, particularly during child rearing and the period after children leave home, their utilisation of housing changes. While having spare bedrooms indicates a capacity to accommodate more people in reasonable comfort, it does not necessarily mean that dwellings are not being fully utilised. Households may put these 'spare' rooms to various uses (e.g. study, office, gymnasium, craft or hobby room, children's play room, guest bedroom or store room). Some may provide each child with a separate bedroom regardless of their age or sex.

In capital cities, the proportion of households with one or more spare bedrooms ranged from 69% in Darwin to 85% in Perth (graph 10.4),

10.3 ALL HOUSEHOLDS, By number of bedrooms and number of persons—2009–10

	One bedroom	Two bedrooms	Three bedrooms	Four or more bedrooms	All households(a)
	'000	'000	'000	'000	'000
Lone person	239.4	692.2	855.6	248.2	2 055.2
Two persons	61.1	598.8	1 458.8	696.8	2 820.1
Three persons	*8.0	159.7	728.9	479.6	1 376.3
Four persons	**3.2	63.6	596.7	680.1	1 343.6
Five or more persons	**1.9	*14.5	252.3	534.6	803.3
Total	313.6	1 528.7	3 892.3	2 639.3	8 398.5

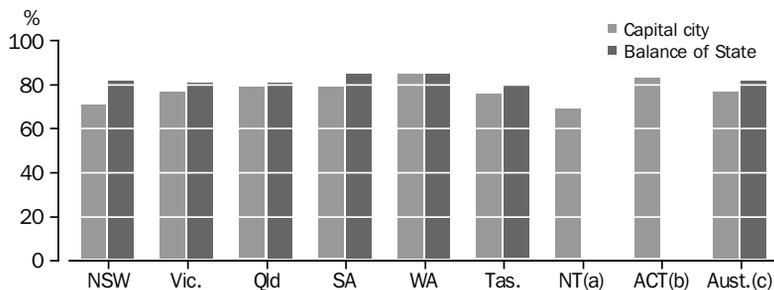
* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Includes bed-sits and dwellings with no bedrooms.

Source: ABS data available on request, *Survey of Income and Housing*.

10.4 HOUSEHOLDS WITH ONE OR MORE SPARE BEDROOMS—2009–10



(a) Balance of NT estimates are not sufficiently reliable to be shown separately.

(b) Balance of ACT estimates are not available.

(c) Includes NT balance.

Source: ABS data available on request, *Survey of Income and Housing*.

while the proportion across all capital cities was 77%. Outside of capital cities, the proportion of households with spare bedrooms was higher at 82% – possibly associated with higher proportions of separate houses in these areas. However, overcrowding in capital cities and outside of capital cities were similar. In 2009–10, 4% of capital-city households were in need of one or more bedrooms compared with 3% of households in the rest of Australia. Sydney and Darwin had the highest overcrowding rates (both 5%), and also the highest proportion of flats, units and apartments.

Home owners and renters

The legal rights and obligations that households have in relation to the dwelling in which they live vary considerably according to tenure type. For example, those who own their home have greater security of tenure than most renters, whose occupancy rights are subject to review at relatively frequent intervals. Owners generally also have more freedom than renters to modify the dwelling to suit their specific needs and tastes, to keep pets, take in boarders or run a business from home. In the course of repaying their home loans, owners usually accumulate wealth in the form of home equity that can then be used to secure finance for other purposes.

On the other hand, renting can have advantages over home ownership, such as greater flexibility to move elsewhere at short notice, lower housing costs than many owners repaying a mortgage, and the opportunity to invest in other assets

which may yield higher returns than home ownership. Households renting from a state or territory government housing authority (public renters) generally have lower housing costs and greater security of tenure than those renting from a private landlord.

At the 1966 Census of Population and Housing, 71% of all occupied private dwellings were either owned outright or owned with a mortgage by their occupants. A lower average level of Aboriginal and Torres Strait Islander home ownership rates, compared to the population as a whole, contributed in part to the decrease, to 69%, in average home ownership recorded in the 1971 Census (see note (c) in table 10.5). Since then, the rate of home ownership in Australia, as measured in the Census, has ranged between 68% and 70% (table 10.5).

In the 2009–10 Survey of Income and Housing, it was found that an estimated 33% of households owned their homes outright (i.e. without a mortgage) and 36% were owners with a mortgage. A further 24% were renting from a private landlord and 4% were renting from a state or territory housing authority.

Since 1995–96, the proportion of households renting from state/territory housing authorities has declined slightly while the proportion renting privately has increased from 19% to 24% in 2009–10 (graph 10.6). While a greater proportion of all renting households are renting from private landlords, there is an increased number of private renters receiving Commonwealth rent assistance (see *Housing costs* and *Housing assistance*).

10.5 ALL OCCUPIED PRIVATE DWELLINGS, By tenure type

Year	Owner without a mortgage	Owner with a mortgage	All owner occupied private dwellings	Renter	Other tenure	Total(a)	Proportion of owner occupied private dwellings
	'000	'000	'000	'000	'000	'000	%
1966(b)	na	na	2 231.9	835.1	59.6	3 126.5	71.4
1971(b)	na	na	2 468.9	1 001.3	119.3	3 589.5	68.8(c)
1976	1 306.3	1 437.8	2 761.5(d)	1 044.5	232.5	4 040.5	68.3(e)
1981	1 548.9	1 542.9	3 178.9(d)	1 164.5	190.6	4 534.0	70.1
1986	1 981.9	1 604.4	3 586.3	1 334.4	174.1	5 094.8	70.4
1991	2 362.0	1 561.3	3 923.2	1 560.6	210.3	5 694.2	68.9
1996	2 658.0	1 656.1(f)	4 314.0	1 866.0	67.8	6 247.8	69.0
2001	2 810.9	1 872.1(f)	4 683.0	1 953.1	101.3	6 737.4	69.5
2006	2 478.3	2 448.2(f)	4 926.5	2 063.9	65.7	7 056.1	69.8

na not available

(a) Excludes not stated.

(b) Separate figures for owners without a mortgage and owners with a mortgage are not available for these years.

(c) Following the 1967 Referendum to change the Constitution and a subsequent change in the Aboriginal and Torres Strait Islander question wording in the Census in 1971, the Aboriginal and Torres Strait Islander census count increased by 45%. This change made a small contribution to the decrease in the measured proportion of owner occupied private dwellings.

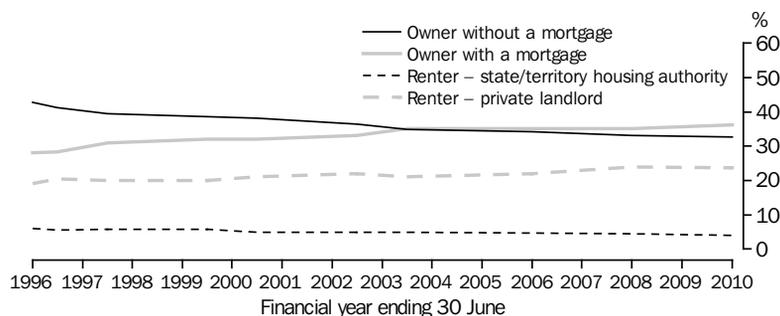
(d) Includes 'owner/purchaser undefined' which accounts for 0.4% of the total in 1976 and 1.9% in 1981. In subsequent years, only the specific categories of 'owner with a mortgage' and 'owner without a mortgage' were included on Census forms, which may have resulted in a small decline in measured ownership rates.

(e) Due to budgetary constraints, the ABS was unable to complete the normal processing of the data and a 50% sample was processed. The impact of this on the measured proportion of owner occupied private dwellings is not clear.

(f) Includes dwellings 'Being purchased under a rent/buy scheme'. These accounted for 0.5% of occupied private dwellings in 1996, 0.7% in 2001 and 0.2% in 2006. In previous years, this tenure category was not separately catered for on Census forms and it is not known how households with rent/buy tenure would have responded to the questions on tenure.

Source: ABS data available on request, *Census of Population and Housing*.

10.6 HOUSEHOLDS(a), By tenure and landlord type



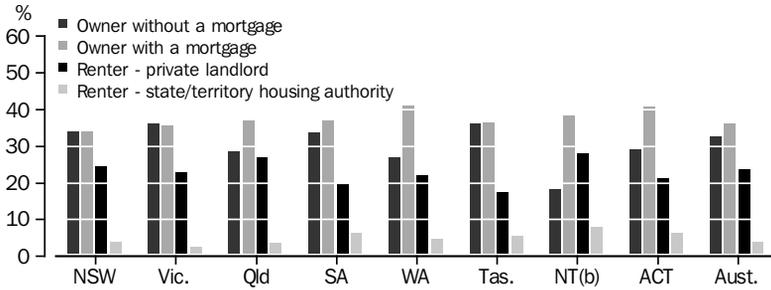
(a) No data available for 1998–99, 2001–02, 2004–05, 2006–07 or 2008–09. Values have been interpolated for these years.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

Between June 1996 and June 2010, the proportion of households without a mortgage declined from 43% to 33%, while the proportion with a mortgage rose from 28% to 36%. The decline in outright home ownership may reflect increasing uptake of flexible low-cost financing options that allow households to extend their existing home mortgages for purposes other than the original home purchase (see *Home buyers*).

Tenure type is closely related to a household's life cycle stage (see *Housing and life cycle stages*), so differences in tenure patterns between geographic regions are partly a reflection of differences in the age and family structures of regional populations. For example, in 2009–10, the states with the oldest age structures had the four highest rates of outright home ownership. The Northern Territory had the lowest home-ownership rate (57%) and the lowest proportion

10.7 OWNER AND RENTER(a) HOUSEHOLDS, By state and territory—2009–10

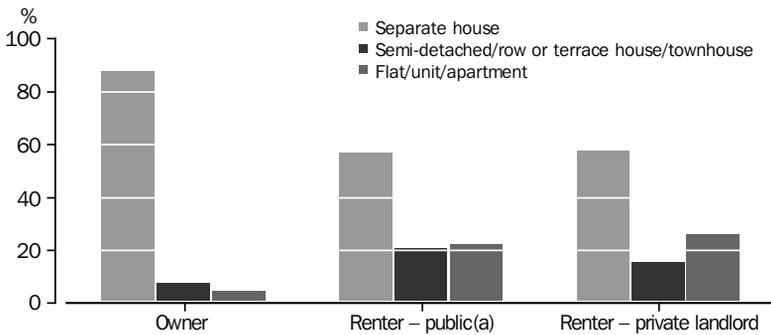


(a) Excludes a small number of renters with other landlord type.

(b) Excludes households in collection districts defined as very remote, accounting for about 23% of the population in the Northern Territory.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

10.8 OWNER AND RENTER HOUSEHOLDS, By dwelling type—2009–10



(a) Renting from a state or territory housing authority.

Source: *ABS data available on request, Survey of Income and Housing*.

of outright owners (18%) (graph 10.7). The Northern Territory also had the highest proportion of renters overall (40%), and the highest proportion of public renters (8%). This pattern of housing tenure reflects the Territory's young age structure, highly mobile work force, and relatively large Aboriginal and Torres Strait Islander population.

Australia's preference for a free-standing house on its own block of land is most evident among home owners. Of the 5.7 million households that owned their home in 2009–10, 88% lived in separate houses (graph 10.8) compared with 57% of both private and public renter households. A higher proportion of public and private renter households lived in flats, units or apartments (22% and 26% respectively) compared with home owner households (4.6%).

Housing costs

For most Australians, whether buying or renting their home, the provision of adequate housing for themselves and their families involves substantial expenditure throughout much of their lives. Housing costs are often the largest regular expenses to be met from a household's current income.

The housing costs measure compiled from the Survey of Income and Housing is defined as the sum of:

- rent payments
- rates payments (general and water) and
- mortgage or unsecured loan payments, if the initial purpose is primarily to buy, add or alter the dwelling.

10.9 ALL HOUSEHOLDS, Housing costs by tenure and landlord type—2009–10

	PROPORTION OF HOUSEHOLDS(a) WHOSE HOUSING COSTS REPRESENTED				Number of households '000
	Average weekly housing costs	Average housing costs as a proportion of	25% or less of	More than 50% of	
		gross household income(a)	gross household income	gross household income	
	\$	%	%	%	
Owner without a mortgage	36	2.6	97.9	1.2	2 734.2
Owner with a mortgage	408	18.1	66.4	6.9	3 040.7
Renter – state/territory housing authority	119	19.1	78.0	2.7	326.8
Renter – private landlord	305	20.0	56.8	10.2	1 994.1
Total renters(b)	275	19.6	60.2	9.1	2 411.1
All households(c)	239	14.1	75.7	5.5	8 398.5

(a) Excludes households with nil or negative total income.

(b) Includes other landlord types.

(c) Includes other tenure type.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

In 2009–10, owners without a mortgage had the lowest housing costs, averaging \$36 per week, or 3% of gross household income. In contrast, owners with a mortgage had the highest housing costs, averaging \$408 per week or 18% of their gross household income.

Among renters, housing costs averaged \$119 per week for households renting from a state or territory housing authority and more than double that (\$305) for households renting from a private landlord. The effect of Commonwealth rent assistance (CRA) should be taken into consideration when comparing the housing costs of private renters with those of other households.

Eligible social security recipients may receive a non-taxable income supplement in the form of CRA if the private rent they pay is above a threshold level. It is estimated that CRA effectively lowers the total housing costs by 10% for all private renters, and by 30% for those private renters who receive CRA. For more information see *Housing assistance and Housing Occupancy and Costs, Australia (4130.0)*.

For the majority of owner and renter households, housing costs represented less than 25% of gross household income, but for some it was more than 50%. In 2009–10, 10% of private renters and 7% of owners with a mortgage spent more than half of their gross income on housing (table 10.9).

Between 1994–95 and 2009–10, owners with a mortgage experienced a \$121 increase in average

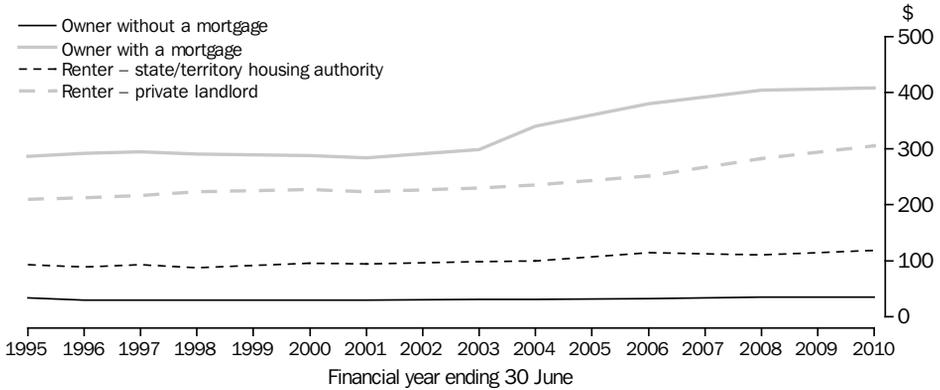
weekly housing costs, after adjustment for inflation (graph 10.10). As a proportion of gross household income, housing costs of owners with a mortgage have remained around 18% over this time (graph 10.11).

For other tenure types, changes in weekly housing costs were smaller, with an overall real increase of \$95 for private renters and \$26 for public renters between 1994–95 and 2009–10. The proportion of income spent on housing costs has remained around 20% for private renters, but has increased slightly for public renters from 18% in 1994–95 to 19% in 2009–10. As noted above, the effect of CRA receipts should be taken into consideration when making comparisons of housing costs of private renters with those of other tenure types.

In 2009–10, households in Sydney, Canberra, and Darwin had the highest average weekly housing costs – \$291, \$304 and \$307 respectively (graph 10.12). In each of these cities, housing costs averaged more than \$450 per week for owners with a mortgage, \$370 per week for private renters and \$125 per week for public renters (table 10.13). At \$175 per week, average housing costs in Hobart were just 60% of the Sydney average, and the lowest of all the capital cities.

In all states, average housing costs were higher in the capital city than in the rest of the state. The greatest differences were in South Australia, with Adelaide housing costs 53% higher than the rest of state, and New South Wales, with Sydney

10.10 AVERAGE REAL WEEKLY HOUSING COSTS(a)(b), By tenure and landlord type

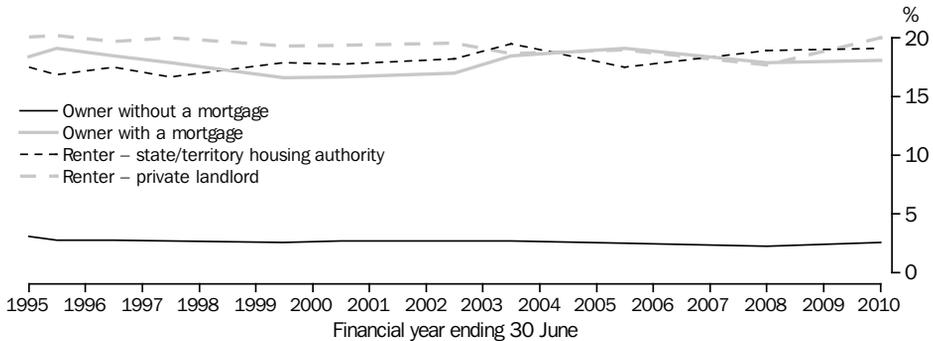


(a) Adjusted for changes in the Consumer Price Index to 2009–10 dollars.

(b) No data are available for 1998–99, 2001–02, 2004–05 or 2006–07. Values have been interpolated for these years.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

10.11 HOUSING COSTS AS A PROPORTION OF INCOME(a)(b), By tenure and landlord type



(a) Excludes households with nil and negative income.

(b) No data are available for 1998–99, 2001–02, 2004–05 or 2006–07. Values have been interpolated for these years.

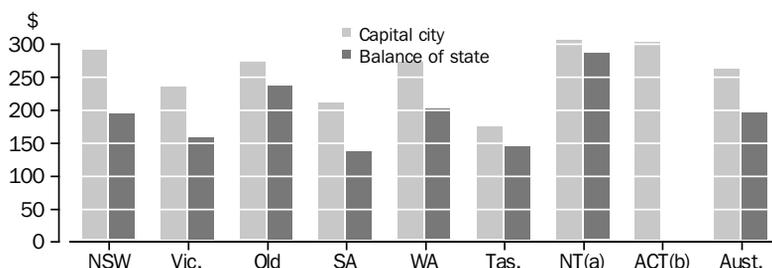
Source: *Housing Occupancy and Costs, Australia (4130.0)*.

housing costs 50% higher than in the rest of the state. In contrast, Brisbane housing costs were 15% higher than in the rest of Queensland, which had the highest non-capital city housing costs in Australia. This is influenced by Queensland's high level of urban settlement outside of Brisbane.

Differences in average housing costs between regions reflect differences in property values (see *Home buyers*), rental prices and tenure patterns (see *Home owners and renters*). In 2009–10, the median value of dwellings in Sydney (\$550,000) was more than 57% higher than that

of Hobart (\$350,000) as was the mean amount of mortgage outstanding (\$239,317 compared with \$140,344). Consequently, average weekly housing costs for home owners with a mortgage were higher in Sydney than in Hobart (\$484 compared with \$289) (table 10.13). Also, housing costs for private renters in Sydney were 80% higher than in Hobart. The proportion of Sydney households renting privately was also higher (26% compared with 21%) further contributing to the overall difference in average housing costs between Sydney and Hobart.

10.12 AVERAGE WEEKLY HOUSING COSTS, By state and territory—2009–10



(a) Excludes households in collection districts defined as very remote, accounting for about 23% of the population in the Northern Territory.

(b) Balance of ACT estimates are not available.

Source: *Housing Occupancy and Costs (4130.0)*.

10.13 CAPITAL CITY HOUSEHOLDS, Housing costs by tenure and landlord type—2009–10

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra(a)	Eight capital cities	Balance of Australia
AVERAGE WEEKLY HOUSING COSTS (\$)										
Owner without a mortgage	36	35	39	34	34	33	38	44	36	35
Owner with a mortgage	484	413	410	358	430	289	451	486	431	363
Renter – state/territory housing authority	128	129	118	107	101	114	131	164	121	117
Renter – private landlord	395	300	327	269	312	219	372	375	336	247
Total renters(b)	351	288	295	229	280	198	313	323	304	221
Total(c)	291	237	273	212	273	175	307	304	263	197
AVERAGE HOUSING COSTS AS A PROPORTION OF GROSS HOUSEHOLD INCOME (%)										
Owner without a mortgage	2	2	3	3	2	3	2	2	2	3
Owner with a mortgage	19	18	17	17	18	16	19	16	18	18
Renter – state/territory housing authority	20	21	19	19	20	20	16	18	20	18
Renter – private landlord	23	19	20	18	19	20	20	18	20	19
Total renters(b)	22	19	20	18	19	21	18	18	20	18
Total(c)	15	13	15	13	14	13	16	13	14	14

(a) All ACT owner and renter households.

(b) Includes other landlord types.

(c) Includes other tenure types.

Source: *Housing Occupancy and Costs, Australia (4130.0)*.

Household income also varies between regions and when housing costs are expressed as a proportion of income, regional differences are moderated to some extent. For example, housing costs for all capital cities combined were 34% higher than in the rest of Australia (\$263 compared with \$197) but the proportion of income spent on housing costs was no higher (both 14%).

Home buyers

For most Australians, buying a home involves raising a deposit and then borrowing a substantial amount of money from a bank or other lending institution, which then holds a mortgage on the property. The amount borrowed is influenced by a number of factors including the price of the property, the amount of the deposit, the policy of lenders regarding borrowing limits and the

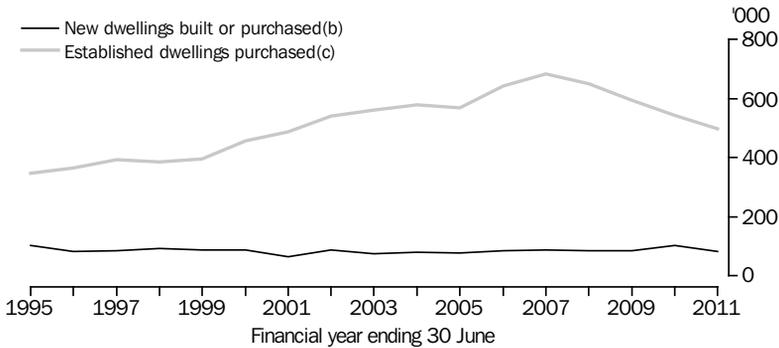
ability of the borrower to repay the loan. The last is, in turn, influenced by household income and housing loan interest rates.

During the period from 1994–95 to 2010–11, the number of dwellings financed has grown overall. In 2010–11, banks and other lending institutions financed 580,000 dwellings for owner occupation, 68,000 fewer than in the previous year, but still 28% higher than in 1994–95. While the number of established dwellings financed grew from 348,000 in 1994–95 to 496,000 in 2010–11, the number of new dwellings financed for construction or purchase declined from 103,000 to 83,000 over the same period (although there was a jump to

104,000 in 2009–10) (graph 10.14). In 2010–11, new dwellings represented 14% of all dwellings financed in Australia. Western Australia had the highest proportion of new dwellings financed (20%) and New South Wales had the lowest (10%).

Between 2002–03 and 2010–11, project home prices increased by an average of 40%, while established house prices increased by an average of 71%. Movements in established house prices were more volatile. They increased from 2002–03 to 2003–04, levelled off in 2005–06, again increased until 2007–08, then declined slightly in 2008–09 before rising again to their 2010–11 level (graph 10.15).

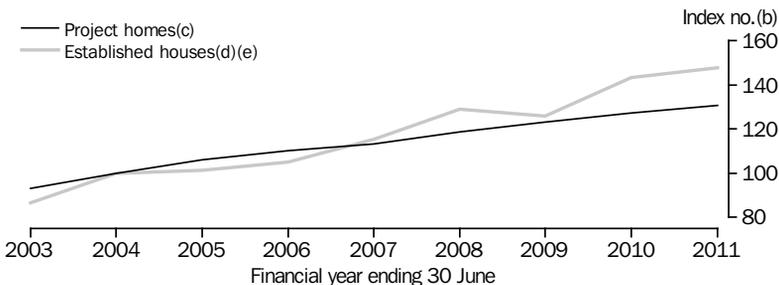
10.14 DWELLINGS FINANCED(a)



(a) Data include owner occupied housing only. (b) Dwellings that have been completed within 12 months of the lodgement of a loan application, and the borrower will be the first occupant. (c) Dwellings that have been completed for 12 months or more prior to the lodgement of a loan application, or that have been previously occupied.

Source: *Housing Finance, Australia* (5609.0).

10.15 HOUSE PRICE INDEXES(a)



(a) Weighted average of the eight state and territory capital cities. (b) Reference base year 2003–04 = 100. (c) Price of new house construction only (excludes land). (d) Price of house and land (includes new house/land packages). (e) Data for this index only available from 2002–03 due to changes in methodology. Data for previous years can be found in *House Price Indexes: Eight Capital Cities* (6416.0).

Source: *House Price Indexes: Eight Capital Cities* (6416.0).

Average loan sizes increased along broadly similar lines to house prices between 1994–95 and 2010–11. For most of the period, the average loan size for first home buyers was slightly less than for changeover buyers (graph 10.16). However, in 2008–09, first home buyers' average borrowings slightly exceeded those of changeover buyers, before dropping back below them in the two subsequent years. In 2010–11, first home buyers borrowed an average of \$281,000, which is \$45,000 less than the average loan size of changeover buyers, the largest such difference since the series began.

Differences in average loan sizes between states and territories tended to reflect differences in median house prices (table 10.17). Average loan sizes in 2009–10 were highest in New South Wales (\$302,000) and Western Australia (\$290,000), and lowest in Tasmania (\$194,000).

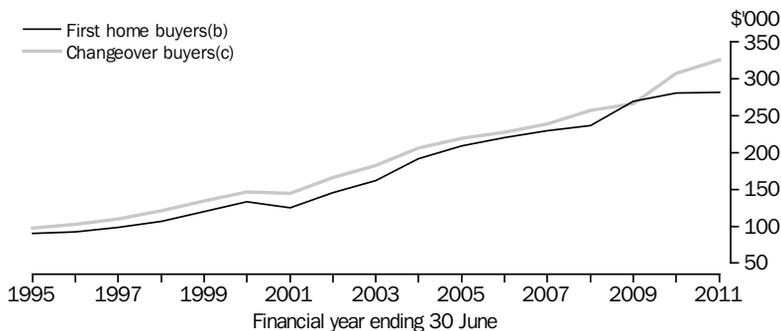
Between 1994–95 and 2009–10, the average real disposable income of households who were lone persons under 35 years increased by 65%. That of couple only households with a reference person under 35 years increased by 45%, and that of couples with dependent children increased by 66% (graph 10.18). In the same period, the average loan size, after adjustment for inflation, increased by 99%.

Approximately 1.1 million Australian households bought a home in the three years prior to the 2009–10 Survey of Income and Housing (which was conducted during the 12 months ended June 2010). Of these, 40% were first home buyers and most were young households with a reference person aged under 35 years (67%) (table 10.19). About 10% of first home buyer households had a reference person aged 45 years and over. In contrast, more than half (52%) of changeover buyer households had a reference person aged 45 years and over.

Changeover buyers are often able to use the substantial equity in their previous dwelling as a deposit on a more expensive 'upgrade'. Many will be able to discharge their mortgage quickly and some may not need to borrow at all. In 2009–10, the estimated median value of dwellings occupied by changeover buyers was \$450,000 compared with \$370,000 for first home buyers. While changeover buyers had slightly larger outstanding mortgages than first home buyers, the proportion of owners with a mortgage was lower (73% compared with 93%).

Consequently, average weekly housing costs of changeover buyers were lower than for first home buyers – \$387 compared with \$460. Changeover buyers also spent a smaller proportion of household income on housing than first home buyers – 18% compared with 23%.

10.16 AVERAGE LOAN SIZE(a)



- (a) Excludes alterations and additions.
- (b) Persons entering the home ownership market for the first time.
- (c) Excludes refinancing.

Source: *Housing Finance, Australia* (5609.0).

10.17 HOUSING FINANCE FOR OWNER OCCUPATION, HOUSE PRICES AND PROPERTY VALUES

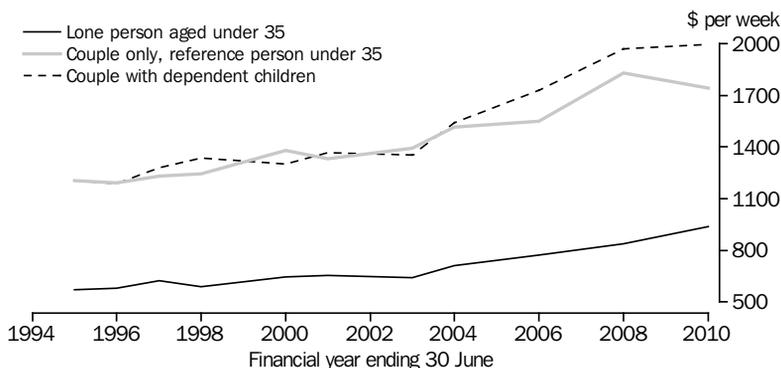
		NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Dwellings financed – 2009–10										
New dwelling built or purchased(a)	'000	20.0	33.8	19.9	7.6	17.7	1.7	0.5	2.0	103.5
Established dwelling purchased(b)	'000	171.8	129.8	111.8	45.1	61.3	10.3	4.5	10.1	544.6
All dwellings financed	'000	191.8	163.6	131.7	52.7	79.0	12.1	5.1	12.0	648.1
Average loan size – 2009–10										
First home buyers(c)	\$'000	303	270	280	237	292	199	303	289	281
Non-first home buyers	\$'000	302	275	275	216	289	193	278	265	278
All dwellings financed	\$'000	302	260	276	220	290	194	282	270	279
Change in capital city Project Home Price Index from 2002–03 to 2009–10(d)										
	%	26	23	47	31	71	48	66	33	37
Change in capital city Established House Price Index from 2002–03 to 2009–10(e)										
	%	25	85	101	90	140	125	147	71	66
Median price of capital city established house transfers – March Qtr 2009(f)										
	\$'000	583	469	460	404	518	352	529	540	na
Median estimated value of all owner occupied dwellings 2009–10(g)										
Capital city	\$'000	550	480	470	400	500	350	520	500	490
Balance of state	\$'000	370	280	400	291	400	300	400	na	350
Total	\$'000	450	410	435	370	490	320	500	500	440
Average amount of mortgage outstanding – 2009–10(h)										
Capital city	\$'000	239	207	220	180	232	140	247	223	219
Balance of state	\$'000	168	138	202	124	172	126	195	na	169
Total	\$'000	214	188	210	167	220	132	235	223	202

na not available

- (a) A new dwelling is one that has been completed within twelve months of the lodgement of a loan application, and the borrower will be the first occupant.
- (b) An established dwelling is one that has been completed for twelve months or more prior to the lodgement of a loan application, or that has been previously occupied.
- (c) Persons entering the home ownership market for the first time.
- (d) Measures change in the cost of building a new house on buyer's own land.
- (e) Measures change in prices paid for house and land, including new house/land packages.
- (f) Prices paid for established houses (including land) purchased in the reference period.
- (g) Householder's own estimate of the market value of their dwelling at the time of the survey.
- (h) Only includes owners with a mortgage.

Source: *Housing Finance, Australia* (5609.0); *House Price Indexes: Eight Capital Cities* (6416.0); *Housing Occupancy and Costs, Australia* (4130.0).

10.18 AVERAGE REAL DISPOSABLE HOUSEHOLD INCOME(a)(b)



(a) Adjusted for changes in the Consumer Price Index to 2009–10 dollars.

(b) No data are available for 1998–99, 2001–02, 2004–05 or 2006–07. Values have been interpolated for these years.

Source: ABS data available on request, *Survey of Income and Housing*.

10.19 RECENT HOME BUYERS(a), Selected household characteristics—2009–10

RECENT HOME BUYERS					
		First home buyer(b)	Changeover buyer(c)	All recent home buyers	All owner households
PROPORTION OF HOUSEHOLDS WITH REFERENCE PERSON AGED:					
Under 35 years	%	66.6	17.7	37.2	11.8
35–44 years	%	23.6	30.7	27.9	19.1
45–54 years	%	7.3	23.6	17.1	22.5
55–64 years	%	*1.7	16.4	10.5	20.7
65 years and over	%	**0.8	11.6	7.3	25.9
PROPORTION OF HOUSEHOLDS IN SELECTED FAMILY/HOUSEHOLD GROUPS					
Lone person	%	20.4	17.8	18.8	21.4
Couple only	%	32.7	28.1	29.9	29.8
Couple family with dependent children	%	31.3	38.9	35.9	29.2
One parent with dependent children	%	3.6	4.9	4.4	3.7
Proportion of households that built/ purchased a new dwelling(d)	%	18	23	21	na
Estimated mean value of dwelling(e)	\$'000	404	553	494	530
Estimated median value of dwelling(e)	\$'000	370	450	420	440
Proportion of households with a mortgage	%	93	73	81	53
Mean amount of mortgage outstanding(f)	\$'000	280	289	285	190
Average weekly housing costs	\$	460	387	417	232
Housing costs as a proportion of income	%	23	18	20	13
Estimated number of households(g)	'000	429.0	644.8	1 073.8	5 774.9

na not available

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Households that built or purchased their dwelling in the three years before the survey.

(b) Recent home buyer households in which neither the reference person nor their partner had previously owned a dwelling.

(c) Recent home buyer households in which either the reference person or their partner had previously owned a dwelling.

(d) A dwelling is new if it was built under contract for the current owner or purchased from a builder/developer and the current owners are the first to live in it.

(e) Householder's own estimate of the market value of their dwelling at the time of the survey.

(f) Only includes owners with a mortgage.

(g) Includes all family and household groups.

Source: ABS data available on request, *Survey of Income and Housing*.

Housing and life cycle stages

As people progress through different life cycle stages and their family structures and financial situations change, so do their housing needs and preferences. For young people leaving their parental home, a typical life experience with housing might begin with renting a small flat or unit for themselves or sharing a group house, then moving on to renting an apartment or house with their partner while saving for a deposit on their first home. Many couples will buy their first home and pay off a considerable part of their mortgage before having their first child.

As the number and age of children increase, many families will upgrade to a larger house. After the children have left home, most home

owners will probably remain in the same home at least until retirement, by which time most will own their home outright. After retirement, some will change location, and in doing so a few will choose a smaller home, possibly a unit in a retirement village. Later, some who are too old or frail to live in their own home will move into cared accommodation (see *Residential aged care* in the *Housing assistance* section).

While most Australians aspire to own their home outright, at least by the time they retire, many on low incomes cannot afford to buy a home and some cannot afford to rent adequate housing. There is a range of government programs aimed at assisting low income households to buy or rent suitable and affordable housing (see *Housing assistance*).

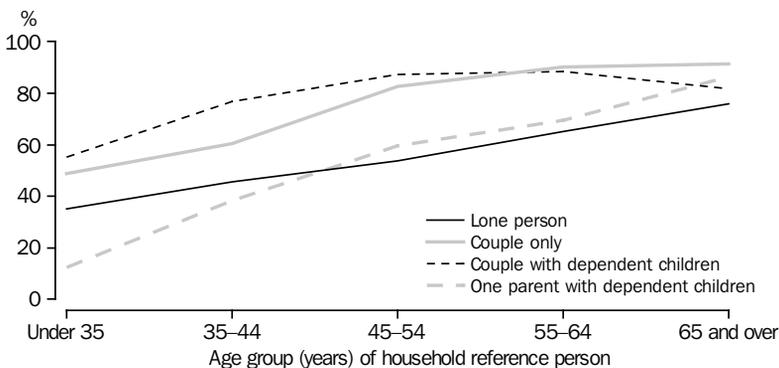
In 2009–10, almost half of young (reference person aged under 35 years) couple only households, and over half of young couples with dependent children, owned their own home (49% and 55% respectively) (graph 10.20 and table 10.22). The home ownership rate was considerably lower for young lone person households (35%). Home ownership rates generally increased with age of reference person.

In 2009–10, one parent families with dependent children had the lowest home ownership rate (40%) and the highest proportion of renters, particularly public renters, with 13% of such households renting from a state or territory housing authority and 43% renting privately (table 10.24). Lone person households also had relatively high proportions of renters, with 7% renting from a state or territory housing authority and 27% renting privately.

For all age groups, lone person and couple only households were more likely to have one or more spare bedrooms than couple families with children (graph 10.21). In 2009–10, 87% of lone person households and 98% of couple only households had one or more spare bedrooms, compared with 68% of couple families with children (table 10.22).

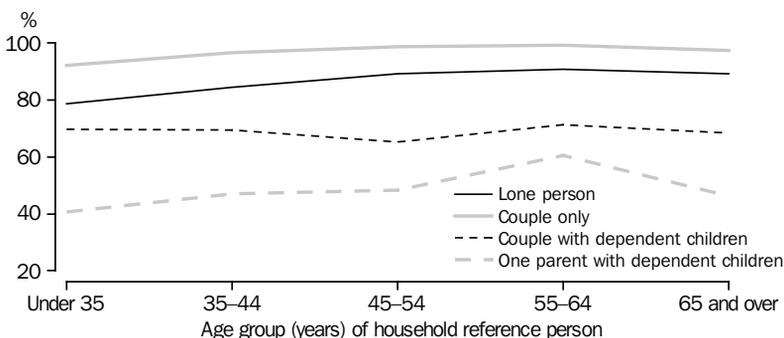
There are long-term benefits in home ownership. Initially, the cost of home purchase is often far greater than the cost of renting (due to the costs of deposits and fees, as well as ongoing mortgage repayments). However, the much lower costs associated with owning a home outright, and the investment that a home represents, can be major contributors to economic wellbeing, particularly for older people, who may retire on considerably reduced incomes.

10.20 HOME OWNERSHIP RATES, By household composition—2009–10



Source: ABS data available on request, Survey of Income and Housing.

10.21 HOUSEHOLDS WITH ONE OR MORE SPARE BEDROOMS(a)—2009–10



(a) As measured against the Canadian National Occupancy Standard.

Source: ABS data available on request, Survey of Income and Housing.

10.22 SELECTED HOUSEHOLD AND DWELLING CHARACTERISTICS(a)—2009–10

Household composition	Estimated number of households '000	Average number of persons in household no.	Average number of bedrooms in dwelling no.	PROPORTION OF HOUSEHOLDS WITH CHARACTERISTIC				
				One or more bedrooms(b) %	Living in separate house %	Living in flat/unit/apartment %	Home owner %	Renter %
REFERENCE PERSON AGED UNDER 35 YEARS								
Lone person	330.5	1.0	2.3	78.8	44.2	38.7	35.1	57.7
Couple only	469.1	2.0	2.7	92.1	61.3	23.8	48.8	48.1
Couple family with dependent children	438.4	3.9	3.2	69.8	82.6	5.8	55.2	40.3
One parent family with dependent children	143.2	3.2	2.9	40.6	78.4	12.4	12.4	83.1
All households(c)	1 731.6	2.6	2.8	68.9	63.7	21.6	39.3	56.0
REFERENCE PERSON AGED 35–44 YEARS								
Lone person	256.4	1.0	2.5	84.5	54.5	28.2	45.7	50.3
Couple only	192.1	2.0	2.8	96.8	67.4	15.4	60.5	36.0
Couple family with dependent children	935.4	4.3	3.5	69.5	89.4	3.6	76.8	21.0
One parent family with dependent children	206.4	3.2	3.2	47.1	84.0	5.7	38.3	57.8
All households(c)	1 728.0	3.3	3.3	71.3	80.1	9.7	63.7	33.4
REFERENCE PERSON AGED 45–54 YEARS								
Lone person	306.3	1.0	2.6	89.3	64.1	19.4	53.9	40.5
Couple only	254.7	2.0	3.2	98.6	87.0	6.1	82.6	13.8
Couple family with dependent children	660.3	4.1	3.7	65.3	90.9	*3.5	87.3	11.4
One parent family with dependent children	145.7	2.9	3.2	48.4	87.7	*4.4	59.7	36.0
All households(c)	1 707.8	3.0	3.4	74.1	85.3	6.5	76.2	20.7
REFERENCE PERSON AGED 55–64 YEARS								
Lone person	420.1	1.0	2.6	90.8	66.3	16.3	65.2	29.8
Couple only	542.4	2.0	3.3	99.3	91.8	3.0	90.1	7.9
Couple family with dependent children	156.0	4.0	3.8	71.4	92.1	**1.6	88.4	9.4
All households(c)	1 463.6	2.2	3.2	88.0	84.0	6.8	81.7	15.4
REFERENCE PERSON AGED 65 AND OVER								
Lone person	742.0	1.0	2.6	89.4	69.2	14.6	75.9	17.6
Couple only	741.6	2.0	3.2	99.4	89.2	4.1	91.4	5.8
All households(c)	1 767.5	1.7	3.0	91.4	80.8	8.3	84.6	11.1
ALL AGE GROUPS								
Lone person	2 055.2	1.0	2.5	87.4	62.0	21.2	60.1	34.0
Couple only	2 199.9	2.0	3.1	97.5	81.7	9.2	78.2	18.9
Couple family with dependent children	2 206.8	4.1	3.6	68.3	88.7	3.8	76.5	21.1
One parent family with dependent children	535.2	3.1	3.2	46.3	83.8	7.3	39.9	55.9
All households(c)	8 398.5	2.6	3.1	78.5	78.6	10.7	68.8	27.6

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

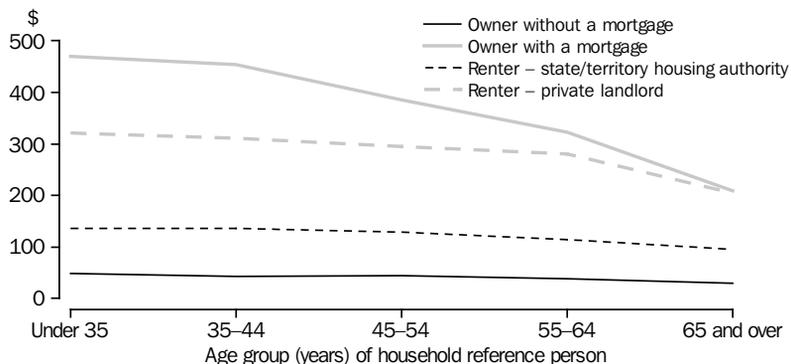
(a) By age group of household reference person.

(b) As measured against the Canadian National Occupancy Standard.

(c) Includes all other family and household types.

Source: ABS data available on request, Survey of Income and Housing.

10.23 AVERAGE WEEKLY HOUSING COSTS, By tenure—2009–10



Source: ABS data available on request, Survey of Income and Housing.

In 2009–10, the average weekly housing costs of young households with a mortgage was \$470 – 46% more than the average weekly rent of young private renters (graph 10.23). However, the difference in housing costs between owners with a mortgage and private renters was less for older age groups, reflecting the former’s lower mortgage payments.

The difference in housing costs between younger and older owners with a mortgage is largely a reflection of the difference in house prices, and hence the amount borrowed, at the time of purchase. On average, recent home buyers paid higher prices than those who bought their homes ten or more years ago. In 2009–10, about 60% of young households (reference person aged under 35 years) with a mortgage were recent home buyers compared with 4% of the oldest home owners (reference person aged 65 years and over) with a mortgage (table 10.24). The average mortgage outstanding for young home owners was \$255,443 compared with \$74,761 for the oldest.

In 2009–10, average weekly housing costs were highest for young households (reference person aged under 35 years) renting privately at \$321, declining with age to \$204 for households with a reference person aged 65 years and over. This pattern largely reflects the need for larger households to rent larger, and often more expensive, dwellings. In 2009–10, couple families with dependent children represented 39% of young private renter households, 20% of those with a reference person aged 35–44 years and

10% of those with a reference person aged 45–54 years.

Average weekly rents paid by public renters were less than half those of private renters, starting at \$136 for younger households and declining to \$95 for the oldest. Owners without a mortgage had by far the lowest and least variable housing costs, averaging \$35 per week overall.

Much of the variation in housing costs between households at different life cycle stages is related to differences in tenure patterns. For example, in 2009–10, households with a reference person aged 35–44 years had the highest average weekly housing costs (\$352), as well as the highest proportion of owners with a mortgage (54%) and the second highest average amount of mortgage outstanding (\$232,800).

Older households (with a reference person aged 65 years and over) had the highest proportion of home owners without a mortgage (78%), and whilst having the lowest proportion of private renters (6%), had the highest proportion of public renters (5%). Together, these factors resulted in this group having the lowest average weekly housing costs (\$56).

Consistent with housing costs, the proportion of household income spent on housing declines with age, but to a lesser extent. For example, in 2009–10, the oldest lone person households paid an average of \$48 per week (10% of their gross household income) for housing, while the youngest lone person household paid \$285 (25% of their gross household income) for housing.

10.24 HOUSING COSTS, MORTGAGE, AND TENURE AND LANDLORD TYPE(a)—2009–10

Household composition	Average weekly housing costs \$	Average housing costs as a proportion of gross household income(b) %	Average amount of mortgage outstanding(c) \$'000	Proportion of owners with a mortgage who are recent home buyers(d) %	PROPORTION OF HOUSEHOLDS WITH CHARACTERISTIC				
					Owner without a mortgage %	Owner with a mortgage %	Renter – state/territory housing authority %	Renter – private landlord %	
REFERENCE PERSON AGED UNDER 35 YEARS									
Lone person	285	25	220	66.5	*3.5	31.6	*2.1	55.6	
Couple only	400	19	282	67.1	*1.7	47.0	**0.5	47.5	
Couple family with dependent children	367	20	251	47.2	4.4	50.7	*1.7	38.6	
One parent family with dependent children	226	27	160	*56.8	**1.3	11.0	15.3	67.8	
All households(e)	351	20	255	59.9	2.8	36.5	2.6	53.4	
REFERENCE PERSON AGED 35–44 YEARS									
Lone person	263	22	197	29.4	11.1	34.6	5.8	44.5	
Couple only	380	17	262	38.3	10.1	50.4	*1.5	34.5	
Couple family with dependent children	389	16	235	28.3	9.6	67.2	*1.1	20.0	
One parent family with dependent children	267	26	223	27.1	5.9	32.4	13.8	44.0	
All households(e)	352	18	233	29.6	9.3	54.4	3.7	29.7	
REFERENCE PERSON AGED 45–54 YEARS									
Lone person	189	19	138	20.4	22.5	31.3	10.0	30.5	
Couple only	251	12	169	25.6	29.9	52.7	*1.7	12.1	
Couple family with dependent children	328	12	198	15.7	21.4	65.8	1.6	9.8	
One parent family with dependent children	218	16	150	*15.9	20.6	39.1	9.4	26.7	
All households(e)	268	12	179	17.3	23.9	52.3	4.2	16.5	
REFERENCE PERSON AGED 55–64 YEARS									
Lone person	123	15	120	16.6	44.6	20.7	9.3	20.6	
Couple only	147	9	145	13.5	57.4	32.6	1.7	6.2	
Couple family with dependent children	240	8	178	*7.5	40.9	47.5	*1.1	8.3	
All households(e)	158	10	143	12.1	50.3	31.4	4.2	11.1	
REFERENCE PERSON AGED 65 AND OVER									
Lone person	48	10	66	**1.5	71.8	4.1	8.3	9.3	
Couple only	50	5	65	*5.5	84.0	7.3	2.0	3.9	
All households(e)	56	7	75	*3.5	78.1	6.5	4.8	6.3	
ALL AGE GROUPS									
Lone person	149	18	163	32.0	40.3	19.8	7.4	26.6	
Couple only	201	13	204	36.1	47.2	31.0	1.5	17.4	
Couple family with dependent children	354	14	223	26.3	14.8	61.7	1.3	19.7	
One parent family with dependent children	231	21	180	24.8	11.7	28.2	12.6	43.2	
All households(e)	239	14	202	28.6	32.6	36.2	3.9	23.7	

* estimate has relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered unreliable for general use

(a) By age group of household reference person.

(b) Excludes households with nil and negative income.

(c) Only includes owners with a mortgage.

(d) Owners who built or purchased their dwelling in the three years prior to the survey.

(e) All Australian households, including other family and household types.

Source: ABS data available on request, Survey of Income and Housing.

Housing assistance

This section was contributed by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (October 2011).

The Australian Government invested significantly in a broad range of housing and homelessness initiatives in 2010–11, including providing assistance to first home buyers, building more affordable rental properties and taking steps to improve the efficiency of the housing market. The Government has also taken action to improve housing for Aboriginal and Torres Strait Islander people, particularly those living in remote communities.

Payments to individuals and families

Commonwealth Rent Assistance (CRA)

Commonwealth Rent Assistance is a non-taxable income supplement payable to eligible Australian residents who rent accommodation in the private rental market. In order to receive CRA, a recipient

must first qualify for a social security income support payment, or more than the base rate of Family Tax Benefit A or service pension, and must pay a minimum amount of rent, called the rent threshold. Rent assistance is then paid at the rate of 75 cents for each dollar above the rent threshold up to a maximum amount. Rates are based on a recipient's family situation and the amount of rent they pay.

To maintain the real value of payments, CRA is adjusted each year in March and September in line with the changes to the consumer price index. Both the rent threshold and the maximum amount are adjusted. This ensures that assistance continues to help those paying higher rents.

At 3 June 2011, 1,138,000 income units were recorded by Centrelink as entitled to rent assistance. An income unit is defined as a single person with or without dependent children, or a couple with or without dependent children. The average rent paid by CRA recipients was \$410 per fortnight, while the average rent assistance received was \$101 per fortnight (table 10.25).

10.25 RECIPIENTS OF RENT ASSISTANCE, Average rent assistance and rent paid 3 June 2011

	Individuals and families no.	Average rent assistance(a) \$ per fortnight	Average rent paid(b) \$ per fortnight
All recipients	1 138 000	101	410
Primary payment type(c)			
Parenting Payment (single)	166 405	116	478
Disability Support Pension	239 500	104	350
Age Pension	203 139	95	336
Newstart Allowance	204 814	97	376
Family Tax Benefit only	145 776	96	618
Youth Allowance – student	72 263	85	307
Youth Allowance – other	14 810	77	272
Austudy	19 684	93	375
Parenting Payment (partnered)	28 275	131	582
Carer Pension	30 788	109	426
Other	12 546	94	356
Income unit type			
Single – no dependent children – sharer	161 522	72	274
Single – no dependent children – non sharer	445 061	101	325
Couple – no dependent children	100 313	96	440
Single – 1 or 2 dependent children	202 178	111	482
Single – 3 or more dependent children	41 433	131	545
Couple – 1 or 2 dependent children	127 978	104	594
Couple – 3 or more dependent children	56 406	121	625
Couple – temporarily separated	3 109	115	506

(a) Average rent assistance per fortnight is taken to be 14 times the daily rate payable at 3 June 2011.

(b) Average rent is the average rent taken into account in working out entitlements for 3 June 2011.

(c) One member of a couple is treated as the reference person for the income unit, based on the type of payment they receive. The general order of priority is pensions, allowances, Family Tax Benefit (FBT). An income unit will be reported as receiving Parenting Payment (Partnered) only if neither receives a social security payment.

Source: FaHCSIA Housing Data Set, June 2011.

As at 3 June 2011, 21% of all CRA recipients were receiving the Disability Support Pension, 18% were receiving the Age Pension and 18% were receiving Newstart Allowance. Three-quarters of those receiving CRA were single: 21% were sole parents, 14% were single people in share accommodation and 39% were single people living alone.

Nearly 40% of all CRA recipients were single or couple families with children. Sole parent families represented 21% of the total rent assistance population, while couple families represented 16%.

Outlays on CRA are included in the total expenditure on pensions, allowances and family tax benefits, details of which are provided in the Income and welfare chapter.

Housing partnerships

National Affordable Housing Agreement (NAHA)

The NAHA was agreed by the Council of Australian Governments (COAG) at its meeting on 29 November 2008 and came into effect on 1 January 2009. It brings together pre-existing Specific Purpose Payments (SPP) and other funding for affordable housing into a single, overarching housing agreement involving all levels of government (table 10.26). This includes funding previously provided through the Commonwealth-State Housing Agreement and the Supported Accommodation Assistance Program.

The NAHA provides a framework for governments to work together to improve housing affordability, reduce homelessness and reduce housing disadvantage for Aboriginal and Torres Strait Islander people. As part of the new agreement, governments have committed to undertake reforms in the housing sector, including to:

- improve integration between the homelessness service system and mainstream services
- reduce concentrations of disadvantage that exist in some social housing estates
- improve access by Aboriginal and Torres Strait Islander people to mainstream housing, including home ownership
- enhance the capacity and growth of the not-for-profit housing sector and

10.26 NATIONAL AFFORDABLE HOUSING AGREEMENT, Payments to states and territories—2010–11

	2010–11 \$m
NSW	388.0
Vic.	276.7
Qld	240.1
SA	95.1
WA	126.7
Tas.	33.5
NT	36.6
ACT	25.2
Aust.	1 221.8

Source: Budget Paper No. 3, National Affordable Housing Special Purpose Payment, 2011–12 Budget.

- reform planning systems for greater efficiency in the supply of housing.

National Partnership Agreement on Social Housing (NPASH)

The National Partnership Agreement on Social Housing provided \$400 million to the states and territories over two years in 2008–09 and 2009–10 as capital funding to increase the supply of social housing by at least 1,600 dwellings. As at 30 June 2011, construction had commenced on 1,890 dwellings, with 1,540 of these completed.

Affordable housing

Public housing

As at 30 June 2010, the number of public housing dwellings was 333,383, with an occupancy rate of 98%, or 325,726 households. The majority of public housing dwellings were located in a major city (73%) and only 2% were located in remote or very remote areas. Of the households living in public housing, 89% received a rental rebate.

The picture of households living in social housing contrasts with that of the general population. Households in social housing are typically on low incomes, with their main source of income from government pensions and payments. As at 30 June 2009, for the 88% of public rental housing tenants receiving reduced rent (rebated), the most common form of government payment was the Disability Support Pension (31% of total rebated households) and the Age Pension (28% of total rebated households).

Community housing

Community housing is housing provided to low-to-moderate income or special needs households by community organisations subsidised by government. Aboriginal and Torres Strait Islander community housing is housing owned or managed by Aboriginal and Torres Strait Islander community organisations for the provision of low cost housing to Aboriginal and Torres Strait Islander people.

As at 30 June 2010, there were approximately 950 mainstream community housing organisations managing nearly 46,000 dwellings and another 400 Aboriginal and Torres Strait Islander community housing organisations managing over 19,000 dwellings.

Over the seven years to 2010, there was a steady increase in the proportion of social housing dwellings managed by the community housing sector, with housing stock (both mainstream and Aboriginal and Torres Strait Islander) in 2010 accounting for over 15% of the total national social housing stock.

There were 42,414 households occupying tenable mainstream community housing stock at 30 June 2010. Of these households, almost a third (32%) had a household member with a disability and 12% were from a non-English speaking background. Of the principal tenants in community housing, 9% were aged over 75 years and 6% were aged under 24 years.

The number of newly assisted mainstream community households in the 12 months to 30 June 2010 was 12,834. Of those new households assisted, 27% were previously homeless.

Social Housing Initiative (SHI)

The Australian Government is funding the Social Housing Initiative under the Nation Building Economic Stimulus Plan to support employment and the Australian economy.

Funding of \$5.64 billion is being allocated to state and territory governments to build around 19,600 additional social housing dwellings, with the assistance of the not-for-profit sector. In addition, around 80,000 dwellings have benefitted from repairs and maintenance works, including approximately 12,000 social housing dwellings that were returned to stock (or which, without this work, would have become uninhabitable).

The Commonwealth is looking at new, innovative provision of social housing – incorporating universal design and energy efficiency measures in a majority of dwellings constructed through the Initiative.

In 2010–11, the Commonwealth paid \$1.294 billion to the state and territory governments for the Initiative. As at 30 June 2011, construction had begun on over 19,200 new social housing dwellings, of which over 15,400 homes had been completed.

Funding for the Social Housing Initiative is being committed over the years 2008–09 to 2011–12. It is expected that all dwellings should be completed by June 2012.

Home Purchase Assistance

First home purchasers have been eligible for financial assistance under the First Home Owner Grant (FHOG) since July 2000. As at 2011, the FHOG is a \$7,000 lump-sum payment available to eligible first home buyers.

Between October 2008 and December 2009, additional grants of up to \$14,000 were available under the First Home Owners Boost (FHOB). Over 153,000 first home buyers took up the FHOB between October 2008 and the end of August 2009.

Home Purchase Assistance is provided by some states to assist low-to-moderate income households to purchase a home or to provide help with mortgage repayments. Some of the mechanisms used to assist low-to-moderate income earners include loans, shared equity schemes, deposit assistance and mortgage relief.

Helping those most in need

Specialist Homelessness Services (SHS)

Since 1 January 2009, the National Affordable Housing Agreement (NAHA) provides funding for Specialist Homelessness Services (SHS) agencies. SHS agencies provide emergency and transitional supported accommodation and related services to people who are homeless or at risk of homelessness.

In 2009–10, a total of 1,559 SHS agencies assisted 135,700 homeless persons and 84,100 accompanying children across Australia. On average, SHS agencies provided 40,800 support

periods to clients each day and 26,300 support periods to accompanying children. Every night during 2009–10, SHS agencies provided an average of 16,200 support periods with accommodation to clients and accompanying children.

The primary focus of SHS agencies was to use a case management approach to support homeless people, including adults and children escaping domestic violence. Through this process, clients were offered a range of services including supported accommodation, counselling, advocacy, links to services, outreach support, brokerage and meals.

The Australian Homelessness Clearinghouse

In July 2011, the Australian Government, through the Department of Families, Housing, Community Services and Indigenous Affairs introduced the new 'Australian Homelessness Clearinghouse' website, replacing the National Homelessness Information Clearinghouse.

The new website is a resource for the homeless services sector to share information and good practice solutions on homelessness issues in Australia. The Clearinghouse provides information on national, state and territory, community and international homelessness initiatives; information on client issues and service delivery; research papers, and homelessness data. It also has a 'Communities of Practice' function to encourage online forums on homelessness.

National Partnership Agreement on Remote Housing (NPARIH)

In November 2008, the Australian Government, through the Council of Australian Governments (COAG), committed \$5.5 billion over 10 years (2008–09 to 2017–18) to reform the provision of remote Aboriginal and Torres Strait Islander housing. The National Partnership on Remote Housing outlined responsibility between governments, with the states and Northern Territory being the major provider of housing services.

The Australian Government and state and territory governments agree that housing investment in remote Aboriginal and Torres Strait Islander communities is a central building block

to achieving the targets for 'Closing the Gap' on Aboriginal and Torres Strait Islander disadvantage through the NPARIH. The NPARIH is targeted at:

- significantly reducing overcrowding
- increasing the supply of new houses and improving the condition of existing houses and
- ensuring that rental houses are maintained and managed.

The NPARIH will deliver up to 4,200 new houses and around 4,800 rebuilds and refurbishments in remote Aboriginal and Torres Strait Islander communities across Australia. In addition, all new, rebuilt, and refurbished houses are being supported by robust and standardised tenancy management arrangements and a program of ongoing repairs and maintenance that will progressively increase the life cycle of remote Aboriginal and Torres Strait Islander housing.

From the commencement of the National Partnership on 1 January 2009 until 30 June 2011, more than 800 new houses have been completed and 3,100 houses have been rebuilt and refurbished nationally.

State Owned and Managed Indigenous Housing (SOMIH)

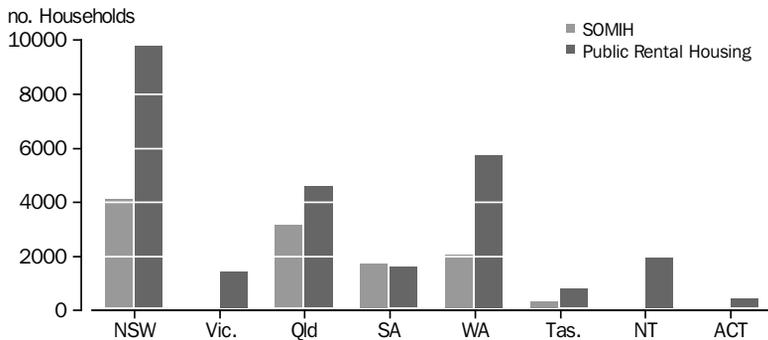
The primary purpose of SOMIH is to achieve more effective Aboriginal and Torres Strait Islander housing outcomes. SOMIH is administered by state and territory governments and is targeted specifically at households with at least one Aboriginal and Torres Strait Islander member. It provides appropriate, affordable and accessible housing for low- to moderate-income households.

There were 11,451 households in SOMIH at 30 June 2010 (graph 10.27), down from 12,375 two years earlier. Nationally, 33% of all SOMIH dwellings were located in major cities, 24% were located in inner regional Australia, 25% were located in outer regional Australia, and 18% were located in remote or very remote areas of Australia.

Home ownership

Indigenous Business Australia's Home Ownership Program (HOP) provides affordable home loan finance to eligible Aboriginal and Torres Strait Islander people to assist in reducing the disparity between the rate of home ownership in

10.27 ABORIGINAL AND TORRES STRAIT ISLANDER HOUSEHOLDS IN PUBLIC RENTAL OR SOMIH ACCOMMODATION—As at 30 June 2010



Source: AIHW 2011.

Aboriginal and Torres Strait Islander households and that in other Australian households. According to the 2006 Census of Population and Housing, the home ownership rate for usual resident households with Aboriginal and Torres Strait Islander person(s) was 36%, around half the rate for other usual resident households (71%).

HOP provides home loans on concessional terms to Aboriginal and Torres Strait Islander families. The scheme targets low income Aboriginal and Torres Strait Islander families with the capacity to repay a long-term loan, but who have difficulty obtaining finance from traditional lending institutions. The loan portfolio currently includes 3,701 loans valued at \$672.4 million. In 2010–11, there were 606 new loans approved. Since the program’s establishment, it has helped in excess of 14,700 Aboriginal and Torres Strait Islander families to buy their own homes.

Home ownership on Aboriginal and Torres Strait Islander people’s land

Historically, Aboriginal and Torres Strait Islander people living on community-titled land have not been able to buy their own homes for a number of reasons, including a lack of secure land tenure, low income, remote construction difficulties, and lack of available land and houses. This has limited their ability to control living conditions, improve their long-term economic circumstances and transfer wealth to future generations.

The Australian Government amended the *Aboriginal Land Rights (Northern Territory) Act 1976* (Cwlth) in 2006, in part to make long-term

leases over community-titled land readily available to prospective Aboriginal and Torres Strait Islander home owners. To complement these reforms, the Home Ownership on Indigenous Land (HOIL) program, delivered by Indigenous Business Australia (IBA) was established to provide affordable loans and other assistance to Aboriginal and Torres Strait Islander families, including financial management, legal advice and project management for renovations and construction.

Home ownership, and subsequent demand for HOIL, is dependent on appropriate land tenure; the Australian Government is working closely with the states and Northern Territory to implement necessary land tenure reform. The Australian Government provided \$38.1 million for HOIL in 2010–11.

Up until August 2011, a total of 18 loans were approved to 16 IBA clients in the Tiwi Islands to purchase their own homes under this program.

Residential aged care

The Australian Government, through the Department of Health and Ageing, subsidises and regulates residential care for older people who are unable to continue living independently in their own homes. Most residential care is provided by the non-government sector, including not-for-profit and private sector providers.

The Australian Government subsidises the provision of residential care to approved residents. The payment for each resident consists

of a basic subsidy plus any relevant supplements. Subsidy and supplement payments are paid directly to providers of aged care services on behalf of residents using those services. Residents who can afford to do so also contribute to the cost of their care and accommodation.

Targeted capital assistance is also available to aged care homes catering largely for residents with special needs, on low incomes or located in rural and remote areas of Australia. Residents can also be asked to pay fees and charges toward their care costs. In addition, the Zero Real Interest Loans initiative provides up to \$300 million in zero real interest loans to residential care providers to build or expand residential and respite care facilities in areas of high need.

The main types of care are low level (hostel) services and high level (nursing home) services. The rights of care recipients are protected and promoted through the Aged Care Complaints Investigation Scheme, advocacy services and the Community Visitors' Scheme. To receive funding, each aged care home must meet specific care and building standards and be accredited by the Aged Care Standards and Accreditation Agency.

Table 10.28 shows the number of aged care residents at 30 June. Between 2002 and 2011, the number of residents increased by 22%.

Table 10.29 shows Australian Government recurrent expenditure and capital grants on residential aged care. Between 2005–06 and 2010–11, recurrent expenditure increased by 49%.

10.28 NUMBER OF RESIDENTS OF AGED CARE HOMES AT 30 JUNE

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
NSW	48 978	49 851	51 128	52 469	53 165	542 667	55 093	55 701	57 282	58 358
Vic.	33 992	35 504	37 211	38 290	39 388	40 290	41 178	42 018	42 989	43 559
Qld	25 466	26 085	26 667	27 364	27 806	28 296	28 679	28 998	29 919	30 310
SA	13 268	13 830	14 425	14 918	15 277	15 547	15 700	15 737	15 792	15 957
WA	11 614	11 853	12 333	12 850	13 102	13 167	13 426	13 519	13 853	14 176
Tas.	3 781	3 896	3 975	4 071	4 167	4 153	4 254	4 201	4 258	4 334
NT	356	356	406	409	417	408	408	413	438	468
ACT	1 443	1 481	1 489	1 516	1 545	1 589	1 641	1 705	1 812	1 880
Aust.	138 898	142 856	147 634	151 887	154 867	157 717	160 379	162 292	166 343	169 042

Source: Department of Health and Ageing.

10.29 AUSTRALIAN GOVERNMENT EXPENDITURE ON RESIDENTIAL AGED CARE

	RESIDENTIAL CARE (RECURRENT)					CAPITAL GRANTS ALLOCATED					
	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
NSW	1 849.8	1 959.8	2 084.2	2 248.1	2 429.6	2 734.4	11.9	7.1	10.1	23.1	4.0
Vic.	1 316.8	1 396.4	1 495.3	1 626.8	1 801.4	2 032.8	9.7	12.5	9.5	13.6	5.8
Qld	953.7	1 005.0	1 058.8	1 127.9	1 268.6	1 407.5	8.1	7.3	4.0	0.3	21.0
SA	550.3	590.8	632.1	680.2	736.1	800.7	1.8	4.9	0.3	—	—
WA	441.1	465.2	495.5	536.7	594.2	669.1	2.2	6.3	7.7	10.6	0.8
Tas.	147.2	153.4	161.5	167.7	177.8	196.1	6.5	2.6	2.6	5.4	3.4
NT	17.7	17.3	17.9	18.6	20.5	25.1	0.5	2.9	6.3	—	6.6
ACT	51.6	54.2	56.7	61.3	68.9	80.9	..	..	—	—	—
Central office (accrual)	..	13.4	—	—	—	7.8	..	..	—	—	—
Aust.(a)	5 328.2	5 655.5	6 002.9	6 474.0	7 097.1	7 954.4	40.7	43.5	40.5	53.0	41.6

— nil or rounded to zero (including null cells)

.. not applicable

(a) Includes expenditure by the Department of Health and Ageing and the Department of Veterans' Affairs, in accrual terms.

Source: Department of Health and Ageing.

Co-operative housing in Victoria

In 2012, Australia celebrates the United Nations International Year of Co-operatives. This article recognises the year by looking at the role of housing co-operatives in Victoria. It was prepared by Common Equity Housing Ltd (CEHL) and the Victorian Department of Human Services.

In the early 1980s, co-operative housing in Victoria started to become mainstream, with a proposal for a Rental Housing Co-operative program submitted to the State Housing Commission for consideration.

By 2011, Victoria had 117 housing co-operatives, with approximately 2,400 rental homes across the state. These co-operatives primarily manage long-term rental housing portfolios.

There are generally two types of housing co-operatives, Common Equity Rental Cooperatives (CERCs) and Rental Housing Cooperatives (RHCs). Both are made up of tenant members who contribute to the management of their rental properties.

CERC members are housed in tenant-managed properties leased from a housing association, Common Equity Housing Ltd (CEHL). Contractual arrangements exist between CEHL and each CERC in the form of a head lease on the properties owned by CEHL. Each CERC then leases the properties to individual CERC members. Other housing co-operatives have recently joined CEHL as community managed

co-operatives and further co-operative models are under development.

RHCs are registered housing providers with tenant-managed, long-term housing for low income members. The properties are owned by the Victorian Director of Housing and leased to tenant groups under the Housing Provider Framework Lease and Property Management Agreement.

Based on a model of self-help and empowerment, housing co-operative programs in Victoria deliver quality housing and can provide a range of additional social benefits to participants, including the ability to respond specifically to people from particular needs groups, be responsive to changing needs, and imbue a strong sense of community and social inclusion for tenants and members.

As they become more established, some housing co-operatives have expanded their social networking to include other forms of mutual assistance, such as child care, buying groups and even direct assistance to aged or disabled members.



Image: CEHL Harmony Village.

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11

HEALTH

The Australian health system has a mix of private and public sector involvement, with diverse arrangements for planning, funding, delivering and regulating health services.

The Australian Government, through the Health and Ageing portfolio, has significant financial and policy responsibility for health services including hospitals, public health and mental health. State and territory governments, local governments and non-government organisations are largely responsible for the direct provision of these services, while private, non-salaried practitioners provide most medical, dental and allied health care. Two major national subsidy schemes – Medicare and the Pharmaceutical Benefits Scheme – are funded by the Australian Government to cover all Australian citizens and permanent residents.

In 2008–09, total expenditure on health as a proportion of Australia’s gross domestic product was 9.0%.

This chapter discusses these health service provision arrangements and presents a picture of the health of Australians that covers health and disability status, mortality, national health priority areas, communicable diseases, risk behaviours, health service usage and patient experiences of health services.

ABS data in this chapter are primarily obtained from the 2007–08 National Health Survey, the 2009 Survey of Disability, Ageing and Carers, the 2010–11 Patient Experience Survey and the 2009 Causes of Death Collection. The chapter also draws extensively on information from the Australian Institute of Health and Welfare and the Australian Government Department of Health and Ageing. Unless otherwise stated, all differences between groups (e.g. males and females) are statistically significant at the 5% level.

The chapter contains two special articles, *In pursuit of 2 & 5 – fruit and vegetable consumption in Australia* and *Co-operatives in private health insurance in Australia*.

Related information on a number of aspects of health can be found in chapters 7 *Population*, 9 *Income and welfare* and 14 *Culture and recreation*.

In particular, information on the Health care and social assistance industry can be found in chapters 8 *Labour*; 15 *Industry structure and performance*, 22 *Service industries*, 25 *Information and communication technology* and 26 *Research and innovation*.

Health status

The World Health Organization (WHO) defines health as “... a state of complete physical, mental and social wellbeing, not merely the absence of disease or infirmity”. Aspects of the physical and mental health of a population can be assessed by examining the prevalence of diseases (i.e. the total number of cases of a disease in a given population at a specific time), as well as disability and mortality rates. Assessing the social and mental wellbeing of a population is more subjective, although the ABS can partly meet these information needs through instruments such as the SF-12 questions on self-assessed health and bodily pain, and the K10 questions that determine levels of psychological distress.

The SF-12 is a short-form health survey with 12 questions that provide data on physical and mental health and wellbeing. The K10 is a 10-item questionnaire that provides a global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the most recent four-week period (the Kessler Psychological Distress Scale). Data for the SF-12 were collected from people aged 15 years and over, while the K10 was asked of people 18 years and over.

This section presents general wellbeing data from these question sets in the 2007–08 National Health Survey (NHS), along with data for selected long-term health conditions in Australia in 2007–08. Long-term conditions are defined as medical conditions or injuries that were current at the time of reporting and had lasted, or were expected to last, for at least six months. In most

cases, respondents were asked about conditions that had been medically diagnosed. The section includes an overview of the most prevalent conditions and more detailed data for the Australian national health priority areas.

The ABS classifies data on health conditions according to the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision* (ICD-10).

The data presented in this section are as reported by respondents to the 2007–08 NHS. The reported data may underestimate or overestimate actual prevalence. For example, some people may not realise that they are suffering from a condition, or may not have understood their diagnosis correctly. Biomedical data from the 2012–13 Australian Health Survey will be invaluable in measuring some of this uncertainty.

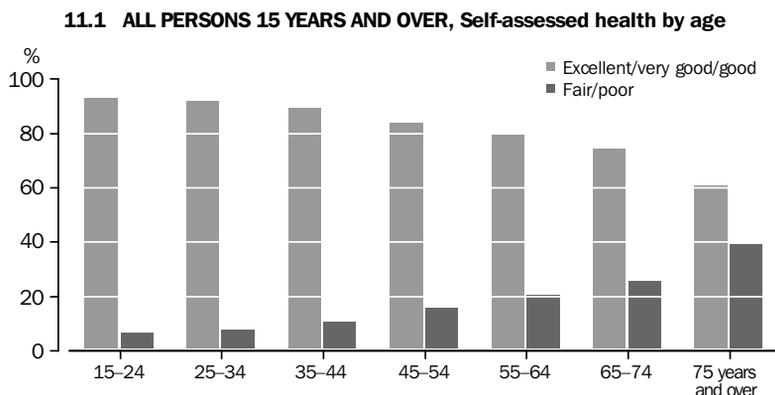
Wellbeing

Self-assessed health

In 2007–08, the majority of people aged 15 years and over considered themselves to be in good health, with 85% reporting their health status as good, very good or excellent. The proportion of people reporting fair or poor health increased with age, from 7% of those aged 15–24 years to 39% of those aged 75 years and over (graph 11.1).

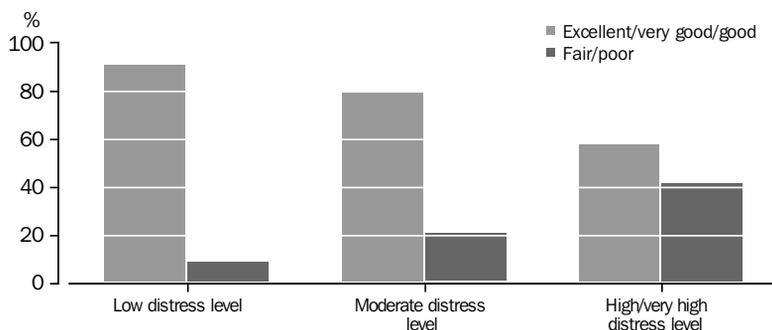
Bodily pain

One in ten people aged 15 years and over in 2007–08 reported feeling severe (8%) or very severe (2%) pain in the four weeks prior to being surveyed. One in five (19%) reported moderate



Source: ABS data available on request, National Health Survey, 2007–08.

11.2 SELF-ASSESSED HEALTH, By level of psychological distress(a)



(a) Persons 18 years and over.

Source: ABS data available on request, National Health Survey, 2007-08.

pain and 39% had mild or very mild bodily pain. Rates of experiencing moderate to very severe pain increased steadily with age, from 18% of people aged 15–24 years to 43% of people aged 75 years and over. Females were slightly more likely than males to report any bodily pain in the previous four weeks (69% compared with 65%). A third of people 15 years and over felt no bodily pain in the previous four weeks (33%).

Bodily pain did not necessarily correlate with feelings of poor health. Four out of five people (81%) who reported any bodily pain in the previous four weeks rated their general health as good to excellent, as did nearly half (46%) of people who reported experiencing very severe pain in this time. On the other hand, 33% of people with very severe pain rated their health as poor, compared with the average of 4%.

Levels of psychological distress

In 2007–08, around 12% of people aged 18 years and over experienced high or very high levels of psychological distress and a further 21% experienced moderate levels of psychological distress (similar to 2001 and 2004–05 rates). Women were more likely than men to experience psychological distress, with 14% of women and 10% of men experiencing high or very high levels of distress, and 23% of women and 19% of men experiencing moderate levels.

People with high or very high levels of psychological distress were much more likely to rate their general health as only fair or poor (42% compared with 9% of those with low distress levels – see graph 11.2).

Long-term health conditions

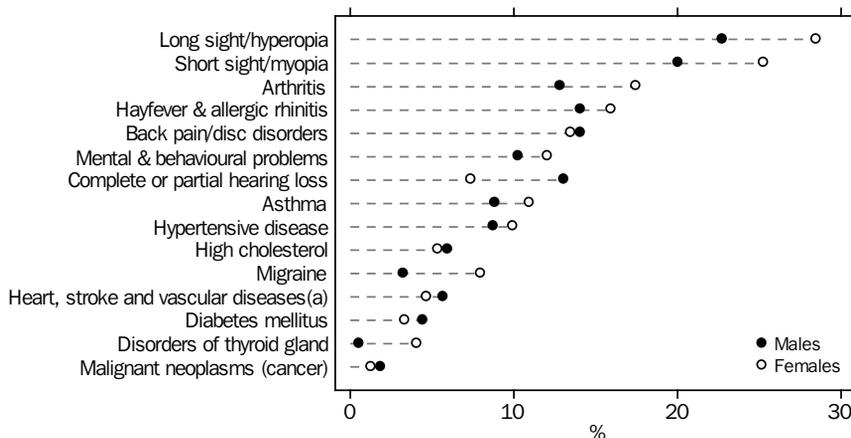
In 2007–08, three-quarters of people (of all ages) reported (or had reported on their behalf) having a long-term health condition. Just over one in four people were long-sighted (26% or 5.3 million people), and a further 23% were short-sighted (4.7 million people). Arthritis and Hayfever and allergic rhinitis each affected one in seven people (15% or 3.1 million people), similar to Back pain and disc disorders (14% or 2.8 million). Around one in ten people was affected by each of the following conditions:

- Mental and behavioural problems (11% or 2.3 million people)
- Complete or partial hearing loss (10% or 2.1 million people)
- Asthma (10% or 2 million people)
- Hypertensive disease (9% or 1.9 million people).

Other commonly reported conditions were High cholesterol and Migraine (both 6% or 1.2 million people); Heart, stroke and vascular diseases (5% or 1 million); Diabetes mellitus (4% or 818,000 people); Disorders of thyroid gland (2% or 486,000 people); and Malignant neoplasms (cancer) (2% or 327,000 people). Graph 11.3 shows rates for these conditions by sex.

The prevalence of long-term health conditions rose steadily with age, from 37% of people under 15 years of age, to 99% of people aged 55 years and over. Females were slightly more likely to have one or more long-term health conditions than males (78% compared with 73%), which may be partly due to the fact that there are more

11.3 ALL PERSONS, SELECTED LONG-TERM CONDITIONS, By sex



(a) Includes ischaemic heart disease, cerebrovascular disease, oedema, heart failure and diseases of the arteries, arterioles and capillaries.

Source: ABS data available on request, National Health Survey, 2007-08.

women in the older age ranges (In 2007-08, 54% of people over the age of 65 years were women).

Interestingly, 83% of people with a long-term health condition felt that their general health was good, very good or excellent.

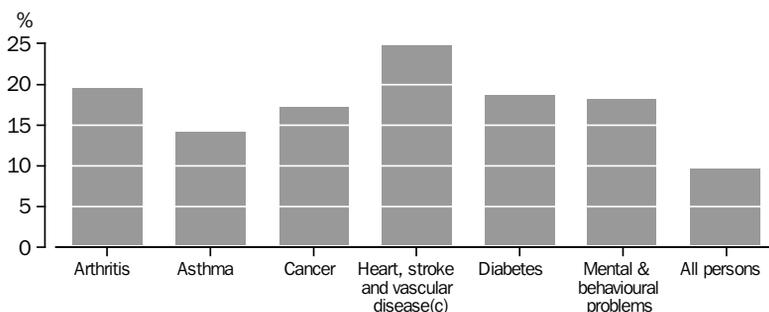
National Health Priority Areas

The Australian Government National Health Priority Areas (NHPA) initiative focuses on conditions that contribute most to the burden of

disease in the community, particularly where this can be significantly reduced through health policy or programs. The burden of disease and injury is a measurement of time lost due to premature death, and years of healthy life lost due to disability; however, the NHPAs also represent a considerable economic and social burden.

This section presents data on arthritis and musculoskeletal conditions, asthma, cancer, conditions of the circulatory system, diabetes,

11.4 PERSONS 18 YEARS AND OVER, NHPA CONDITIONS(a), By severe/very severe bodily pain(b)



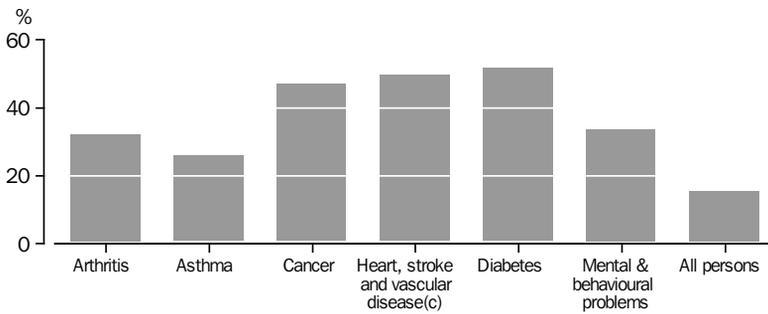
(a) National Health Priority Areas.

(b) Severe or very severe bodily pain experienced in past 4 weeks.

(c) Ischaemic heart disease, cerebrovascular disease, oedema, heart failure, and diseases of the arteries, arterioles and capillaries.

Source: ABS data available on request, National Health Survey, 2007-08.

**11.5 PERSONS 18 YEARS AND OVER, NHPA CONDITIONS(a),
By fair or poor self-assessed health(b)**



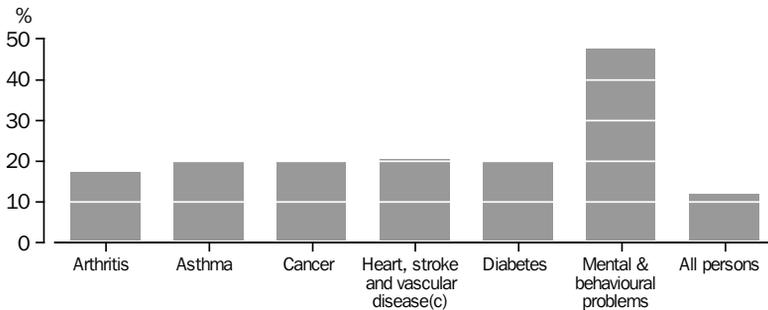
(a) National Health Priority Areas.

(b) Persons assessing their general health as only fair or poor.

(c) Ischaemic heart disease, cerebrovascular disease, oedema, heart failure, and diseases of the arteries, arterioles and capillaries.

Source: ABS data available on request, National Health Survey, 2007–08.

**11.6 PERSONS 18 YEARS AND OVER, NHPA CONDITIONS(a),
By high or very high levels of psychological distress(b)**



(a) National Health Priority Areas.

(b) High or very high levels of psychological distress experienced in last 4 weeks.

(c) Ischaemic heart disease, cerebrovascular disease, oedema, heart failure, and diseases of the arteries, arterioles and capillaries.

Source: ABS data available on request, National Health Survey, 2007–08.

injuries and mental health. The remaining NHPA, obesity, is discussed in *Health risk factors* later in this chapter.

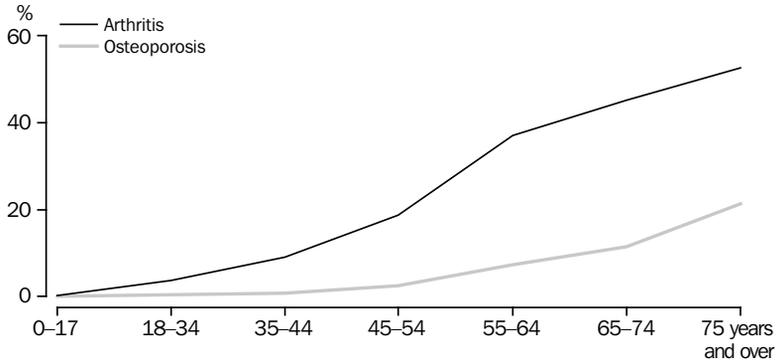
Wellbeing of people with NHPA conditions

People aged 18 years and over with NHPA conditions were more likely to report experiencing severe or very severe levels of bodily pain, general health that was only fair or poor, and higher levels of psychological distress than average, as shown in the graphs 11.4, 11.5 and 11.6.

Arthritis and other musculoskeletal diseases

Osteoarthritis, rheumatoid arthritis and osteoporosis are the most commonly occurring musculoskeletal conditions. Although they are not immediately life threatening and have low associated mortality, they have substantial influence on people’s quality of life and impose a heavy economic burden on the community. In 2004–05, total health expenditure attributable to musculoskeletal diseases was \$4.0 billion, which accounted for 8% of allocated health system expenditure in Australia (AIHW, 2010a).

11.7 PREVALENCE OF ARTHRITIS AND OSTEOPOROSIS



Source: ABS data available on request, National Health Survey, 2007–08.

In 2007–08, 15% of people reported that they currently had arthritis (13% of males and 18% of females). Of people with arthritis, 51% had osteoarthritis and 14% rheumatoid arthritis. The proportion of people with arthritis increased with age, from 2% of people under 35 years to 53% of people aged 75 years and over.

Around 1% of males and 6% of females had osteoporosis (3% overall). Rates of osteoporosis also increased with age, from less than 1% of people under 35 years to 16% of people aged 65 and over (graph 11.7).

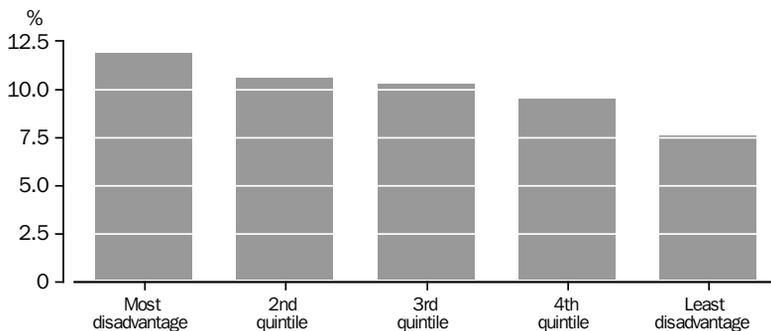
Arthritis and musculoskeletal diseases were the underlying cause for 1,078 registered deaths or 0.8% of all deaths registered in Australia in 2009, and were identified as either an underlying cause or associated cause of death for 6,410 deaths registered in Australia in that year.

Of all deaths due to arthritis and musculoskeletal diseases in 2009, 761 (71%) were female, predominantly in the age group 75 to 94 years. The median age at death for deaths due to these diseases was 83 years (80.9 years for males and 84.0 years for females).

Asthma

By international standards, the prevalence of asthma is relatively high in Australia, with more than two million people (10%) reporting having the disease in 2007–08. Asthma was the most prevalent chronic illness in children under 15 years of age (10%). Boys (12%) were more likely than girls (8%) to have asthma, although this was reversed for people aged 15 years and over, with 12% of females and 8% of males having the condition.

11.8 ALL PERSONS, RATES OF ASTHMA, By Index of Disadvantage(a)



(a) Age-standardised to the 2001 estimated resident population.

Source: ABS data available on request, National Health Survey, 2007–08.

Asthma is more likely to be reported by people living in more disadvantaged areas than those in less disadvantaged areas (graph 11.8).

People with asthma can experience reduced quality of life and require a range of health services to manage their condition. Asthma is a common cause of absenteeism from school and also affects family, work and recreation (AIHW, 2011a). In 2004–05, the condition accounted for 1.2% of allocated health system expenditure in Australia, while respiratory diseases as a whole accounted for \$3.3 billion, or 6% of allocated health expenditure.

In 2007–08, just over a quarter (26%) of adults aged 18 years and over with asthma rated their health as only 'fair' or 'poor' compared with 15% of adults without asthma (graph 11.5). Asthmatics also reported higher levels of psychological distress, with 20% of asthmatics aged 18 years and over reporting high or very high levels of psychological distress in the previous four weeks, compared with 11% of people without asthma (graph 11.6).

Around 22% of people with asthma reported that their asthma had become worse or out of control in the previous year. Of those people, 42% went to hospital for treatment. Children tended to have higher rates of hospitalisation than adults – 64% of children whose asthma got worse or out of control in the previous year had been to hospital for their asthma, compared with 33% of people aged 15 years and over. One-fifth (21%) of people with asthma had a written asthma action plan.

Asthma symptoms are usually reversible with treatment, but death can sometimes result if a severe asthmatic episode is not managed properly. In 2009, asthma was the underlying cause for 411 registered deaths, or 0.3% of all deaths in Australia, and was identified as either an underlying cause or associated cause of death for 1,344 deaths in this time.

Women were twice as likely to have asthma as an underlying cause of death as men, with 100 female deaths for every 46 male deaths. The median age at death for deaths due to asthma was 73.1 years for males, 80.2 years for females and 77.9 years overall.

Cancer

In 2007–08, an estimated 1.6% of people reported that they had a medically diagnosed malignant neoplasm (cancer). Rates of cancer increased with age, from less than 1% of people aged under 15 years to around 5% of people aged 65 years and over. It should be noted that the 2007–08 National Health Survey excluded people in hospitals, nursing and convalescent homes and hospices, which may have a greater effect on cancer data than on other conditions.

Of people aged 18 years and over with cancer:

- 17% reported experiencing severe or very severe bodily pain in the previous four weeks (compared with the national average of 10%, see graph 11.4)
- 47% felt that their general health was only fair or poor (much higher than the national average of 15%, see graph 11.5) and
- 20% experienced high or very high levels of psychological distress in the previous four weeks (compared with the national average of 12%, see graph 11.6).

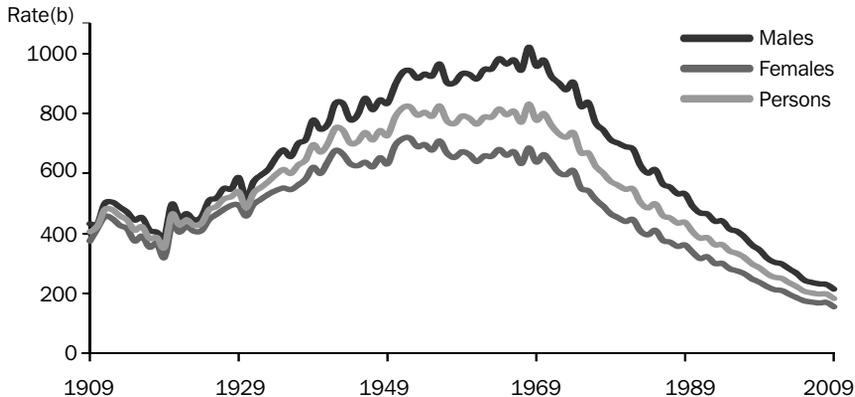
Cancer accounted for \$3.8 billion (7%) of Australia's expenditure on health in 2004–05; however, it was responsible for nearly a fifth (19%) of premature death and disability in that year.

In 2009, cancer was the underlying cause of death for 41,952 registered deaths, accounting for 30% of all registered deaths. Cancer contributed to a total of 48,165 deaths as either an underlying or associated cause of death. The standardised death rate for cancer was 175.6 per 100,000 population in 2009, with 130 male deaths per 100 female deaths for the reference year. The median age of people dying from cancer was 75.1 (75.0 years for men and 75.4 years for women).

Conditions of the circulatory system

Although death rates for conditions of the circulatory system have declined in recent decades, this group of diseases continues to be one of the biggest health problems in Australia, and its health and economic burden continues to exceed that of any other disease (AIHW, 2011b). In 2004–05, the highest health expenditure of all disease groups was for conditions of the circulatory system at \$5.9 billion, or 11% of total allocated health expenditure.

11.9 DEATH RATES FOR DISEASES OF THE CIRCULATORY SYSTEM(a)—1909–2009



(a) ICD-10 codes 100–199.

(b) Per 100,000 population, age-standardised to the 2001 estimated resident population.

Source: *Causes of Death (3303.0)*.

Many Australians are at increased risk of developing some form of circulatory disease due to risk factors such as cigarette smoking, high blood pressure, high cholesterol level, being overweight or leading a sedentary lifestyle. High cholesterol levels were reported by 6% of people, rising with age to 17% of people aged 65 years and over. Data for other risk factors are presented in *Health risk factors* in this chapter.

In 2007–08, 16% of people reported one or more long-term conditions of the circulatory system, with the most common being hypertension (high blood pressure) at 9%. One in ten people aged 45–54 years reported having hypertension, increasing to 35% of people aged 65 years and over.

Circulatory conditions were mostly experienced by people in middle and older age groups. Almost one in five (19%) people aged 45–54 years had a current long-term circulatory condition, rising progressively to 62% of people aged 75 years and over. The circulatory conditions that form the most significant health and economic burden are heart, stroke and vascular diseases (including ischaemic heart disease, cerebrovascular disease, oedema, heart failure, and diseases of the arteries, arterioles and capillaries). Around 7% of people reported having a heart, stroke or vascular disease in 2007–08 (8% of males and 6% of females).

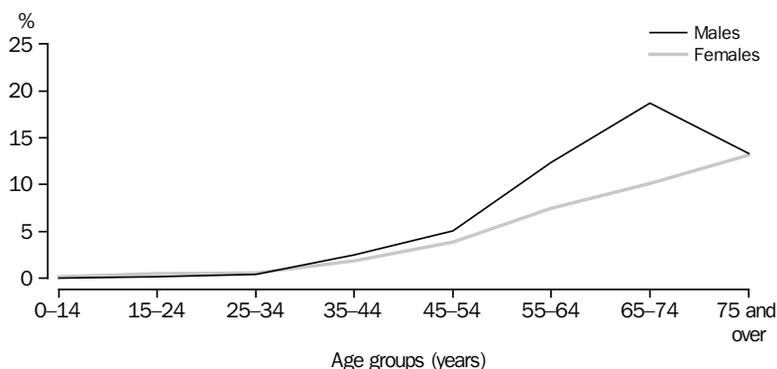
Ischaemic heart disease was the leading cause of death in 2009, with 12,047 male and 10,476 female deaths (115 male deaths per 100 female deaths). In 2007–08, around a quarter of people who had a heart, stroke or vascular disease (25%) reported experiencing severe or very severe levels of bodily pain in the last four weeks, compared with the national average of just under 10% (graph 11.4).

Overall, conditions of the circulatory system accounted for 46,106 deaths in 2009, or 33% of all deaths, contributing to 80,375 deaths overall as either an underlying or associated cause of death. The general decrease in deaths from these conditions since the 1960s (graph 11.9) is due in part to a reclassification of underlying causes of death (with some deaths shifting from Cerebrovascular diseases to Vascular dementia). The median age of people dying from circulatory conditions was 81.3 years for males and 87.2 years for females.

Diabetes mellitus

Diabetes is a costly disease associated with substantial morbidity and mortality, mostly from cardiovascular complications, eye and kidney diseases, and limb amputations. In 2004–05, total health expenditure attributable to diabetes was nearly \$1.0 billion, accounting for 2% of allocated health system expenditure.

11.10 PROPORTION OF PEOPLE WITH DIABETES, By age and sex



Source: ABS data available on request, National Health Survey, 2007–08

In the 2007–08 NHS, 4% of people reported having diabetes as a long-term condition, rising from 2.4% in 1995. More males than females had the condition (5% and 3% respectively). Diabetes rates also increased with age, particularly after the age of 45 years (graph 11.10).

Over half of all people aged 18 years and over with diabetes felt that their general health was only fair or poor (52%), compared with the national average of 15% (graph 11.5).

The majority of people with diabetes (88%) reported that they had Type 2 diabetes. Type 2 diabetes is associated with a number of risk factors, such as excess weight, poor diet, inactivity and smoking. For example, of people aged 35 years and over, those who were obese were about twice as likely to have Type 2 diabetes as those in other weight ranges (51% compared with 27% after adjusting for age). People in this age group who were sedentary or exercised at low levels were also more likely to have diabetes than people who exercised at high or moderate levels (8% and 6% after adjusting for age).

Diabetes was the underlying cause for 4,170 (3%) deaths registered in Australia in 2009, and contributed to 14,286 (10%) deaths as either an underlying or associated cause of death. The standardised death rate for this condition was 17.1 per 100,000 population in 2009 (20.6 per 100,000 males, and 14.2 per 100,000 females), an increase from 16.0 per 100,000 population in 2000.

The median age at death was 80.9 years (78.5 years for men and 83.3 years for women). Type 2 diabetes accounted for 1,772 deaths, or 42% of all diabetes deaths.

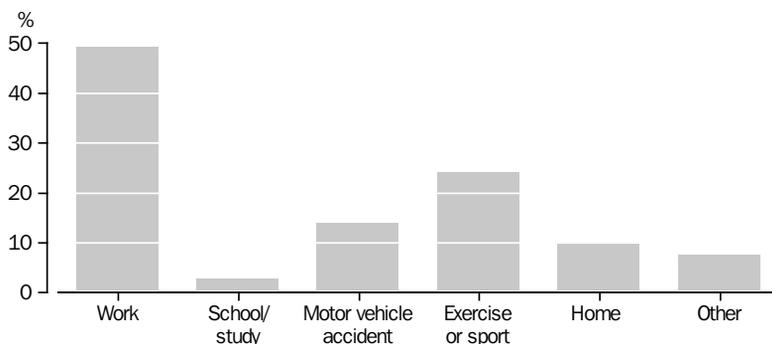
Injuries

Injuries (including poisoning) are associated with high morbidity, and are a leading cause of premature mortality in Australia. They can result in fatalities, survival with ongoing dysfunction or the onset of secondary conditions (such as osteoarthritis in injured joints). In 2009, just over 6% of people with a disability reported injury or accident as their main disabling condition.

The terms ‘injury’ and ‘poisoning’ encompass the adverse effects on the human body that result from particular events. These can be accidental such as falls, vehicle accidents and exposure to chemicals, or intentional such as suicide attempts and assaults by other people. Injury patterns vary significantly by age and sex. Near-drowning and drowning, for example, are major causes of injury and death in early childhood, while self-harm and road crashes are primary causes of injury in young adulthood. Falls are the most common cause of death caused by injury among the elderly. Incidence rates of serious injury are higher for males than females, both overall and for most types of injury (AIHW, 2010b).

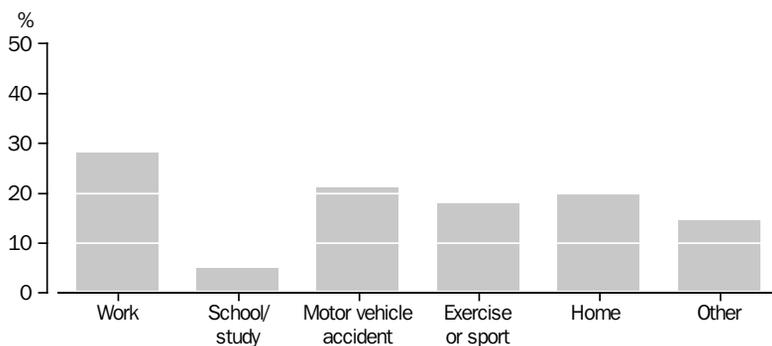
In 2004–05, total health expenditure attributable to injuries was \$3.4 billion, accounting for 7% of allocated health system expenditure.

**11.11 MALES WITH A LONG-TERM CONDITION RESULTING FROM AN INJURY,
By where injury occurred**



Source: ABS data available on request, National Health Survey, 2007–08.

**11.12 FEMALES WITH A LONG-TERM CONDITION RESULTING FROM AN INJURY,
By where injury occurred**



Source: ABS data available on request, National Health Survey, 2007–08.

In 2007–08, injuries accounted for over 1 in 20 (426,000) hospitalisations in Australia (AIHW, 2010b). About 2.4 million people had a long-term condition caused by an injury. Almost half (47%) of disc disorders and 30% of back pain/problems were caused by an injury, as were 15% of arthropathies (joint diseases) and 10% of partial deafness/hearing loss cases. Nearly 80,000 people had an amputation as a result of an injury.

Most people who had a long-term condition as the result of an injury acquired it at work (1 million people or 41%), followed by participation in exercise and sport (531,000 people or 22%). A further 410,000 people (17%) had a long-term condition as the result of a motor vehicle accident, and 334,000 people (14%) injured themselves at home. Men were more likely to

acquire a long-term condition as a result of a work injury, whereas women were more likely to acquire their long-term injury at home or in a motor vehicle accident (graphs 11.11 and 11.12).

In 2009, injuries due to external causes accounted for 8,884 deaths, or 6.3% of all registered deaths. The standardised death rate for injuries was 38.6 per 100,000 of population (55.1 per 100,000 for males and 23.2 per 100,000 for females).

Over time, more men than women have died from external causes, and at younger ages. Consistent with previous years, around two-thirds of the total number of deaths resulting from external causes in 2009 were males (5,886, or 66%). Median age at death for injuries was 47.4 years for males, 66.7 years for females and 51.8 years overall.

Mental health

The designation of mental health as one of the national health priority areas recognises its enormous social and public health importance. Mental health is one of the leading contributors to the non-fatal burden of disease and injury in Australia. It is associated with increased exposure to health risk factors, greater rates of disability, poorer physical health and higher rates of death from many causes including suicide. Mental health problems incur high direct and indirect costs, result in a high number of hospitalisations and impose a heavy burden of human suffering (AIHW, 2011c).

In 2004–05, mental health accounted for 8% of allocated health system expenditure, at \$4.1 billion, but by 2008–09 this figure had increased to more than \$5.8 billion, or \$272 per person (up from \$225 per person in 2004–05) (AIHW, 2010a).

In 2009–10, the Australian Government paid \$755 million in benefits for Medicare Benefits Schedule (MBS) subsidised mental health related services, around 4.9% of all MBS subsidies. Subsidies for psychologist services made up \$287 million of the expenditure. Around 9.7% of subsidies for prescription medication were spent on prescriptions for mental health conditions (equivalent to \$35 per Australian) (AIHW, 2011d).

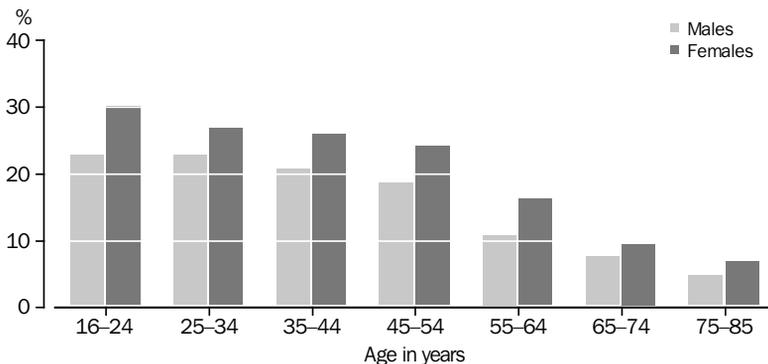
In the 2007 ABS Survey of Mental Health and Wellbeing (SMHWB), mental health condition status was assessed through a diagnostic

instrument (the World Health Organization Composite International Diagnostic Interview (CIDI)). Of the 16 million Australians aged 16–85 years in 2007, almost half (45% or 7.3 million) were assessed as having had a mental disorder at some time in their life. One in five (20% or 3.2 million) were assessed as having a current mental health disorder (having had symptoms of that disorder in the 12 months prior to interview).

Women were more likely to experience anxiety disorders (18% compared with 11% for men) and affective disorders (7% compared with 5% for men). Men had twice the rate of substance use disorders (7% compared with 3% for women). Prevalence varied by age, with people in younger age groups experiencing higher rates of disorder (graph 11.13)

Adolescence and young adulthood is a critical stage of transition in physical and mental development, and vulnerability to mental illness is heightened at this time. Around three-quarters (76%) of people who experience mental disorder during their lifetime will first develop a disorder before the age of 25 years. In 2007, just over a quarter of all young people aged 16–24 years had a mental disorder in the previous year (approximately 26% or 671,000 young people). Young women were more likely than young men to have had a mental disorder (30% compared with 23%).

11.13 ALL PERSONS AGED 16–85 YEARS, Recent mental disorder(a)
By age and sex



(a) Persons who met criteria for a diagnosis of a lifetime mental disorder and had symptoms in the last 12 months.

Source: ABS data available on request, Survey of Mental Health and Wellbeing, 2007.

Around 21% of young people with a mental disorder had experienced high or very high levels of psychological distress in the previous four weeks, compared with 32% of people over 25 with a mental disorder, and 4% of people with no mental disorder. However, over half (56%) of young people with a mental disorder were pleased or satisfied with the general quality of their life, and 16% were delighted with it.

Overall, one in ten people with a mental disorder reported being delighted with the quality of their life, compared with 20% of people without a mental disorder. However, almost half (48%) of the people who reported a mental health condition in 2007–08 also reported high or very high levels of psychological distress in the previous four weeks – around four times the national average of 12% (graph 11.6). In 2007, almost 2% of people with a 12-month mental disorder reported that they had attempted suicide, and 8% had thought about it sometime in the previous year.

In 2007, 38% of all people with a mental disorder (or 1.2 million people) had two or more mental disorders. A mix of mood and anxiety disorders was the most common combination, making up 39% of all co-morbidity cases (472,000 people), with people with more than one anxiety disorder making up a further 27% (331,000 people).

Around 59% of people with a mental disorder also had a physical condition, compared with 48% of those without a mental disorder. After adjusting for age differences in the populations with and without mental disorders, the gap between the rates of those with physical conditions further widened (from 11 to 17 percentage points). Co-morbidity with physical conditions was most common for people with mood disorders, 64% of whom also had a physical condition (*Australian Social Trends, March 2009*, 4102.0).

In 2007, 1.9 million Australians aged 16–85 years (12%) accessed services for mental health problems in the previous year. Around a third of people with a current, long-term mental disorder (35%) accessed these services, with more females doing so than males (41% and 28% respectively).

Mental health disorders were identified as the underlying cause of 6,522 registered deaths in 2009, representing 4.6% of all registered deaths in Australia in that year. (Dementia accounted for 89% of these deaths.) In total, 21,384 deaths were due to, or associated with, mental health disorders.

The prevalence of mental health disorders as an underlying cause has increased significantly over the last ten years. In 2009, the standardised death rate for mental health disorders was 25.2 per 100,000 of population, an increase from 16.5 per 100,000 population in 2000.

In 2009, more than half the deaths due to mental health disorders were females (4,130 or 63%). The median age at death was higher for females at 88.9 years, compared with 84.6 years for males

Disability

At some point in life, most Australians will experience disability themselves or know someone in their immediate family or circle of friends who has a disability. Although the immediate effect of having a disability is individual and personal, the impact may be felt by other family members or friends who provide care for the person involved. People with a disability often need external support services and this has direct implications for government and non-government agencies which provide these services.

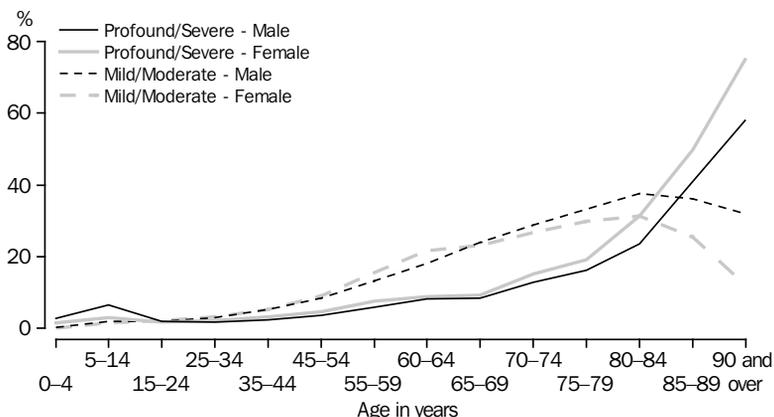
Around 18% of people reported having a disability in 2009, where disability is defined as any limitation, restriction or impairment that restricts everyday activities and has lasted or is likely to last for at least six months. Examples range from loss of sight that is not corrected by glasses, to arthritis that makes dressing difficult, to advanced dementia that requires constant help and supervision.

There was a strong relationship between age and disability, with rates of disability increasing as people aged. In 2009, 88% of people aged 90 years and over had a disability compared with 3.4% of children four years and under. Overall, 18% of all males and 19% of all females had a disability.

Disability can be categorised by levels of core activity limitation in the areas of self-care, mobility or communication. In 2009, 3.5 million people had a specific limitation or restriction, representing 87% of all people with a disability. Around 1.3 million people had a profound or severe core activity limitation (i.e. they reported sometimes or always needing help with core activity tasks).

While rates of severe/profound and mild/moderate disability followed similar patterns for

**11.14 ALL PERSONS WITH A DISABILITY, Level of core activity limitation
By age and sex**



Source: ABS data available on request, Survey of Disability, Ageing and Carers, 2009.

males and females, aged 15–65 years, there were interesting differences across younger and older age/sex groups (graph 11.14). For example, the rate of profound or severe core activity limitation for boys aged 5–14 years (6.6%) was more than double that of girls of the same age (3.0%), while women aged 90 years and over had a higher rate of profound or severe core activity limitation (75%) than men of the same age (58%).

Around the age of 80 years, sharp decreases in rates of mild or moderate disability and commensurate increases in rates of severe or profound disability suggest that the health of people with mild or moderate core activity restrictions worsens around this time and they move into the severe or profound categories (graph 11.14). The overall rate of profound or severe limitation declined slightly from 6.3% in 2003 to 5.8% in 2009.

Mortality, life expectancy and causes of death

Mortality, life expectancy and causes of death data provide important insights into the overall health of Australians. Trends in mortality over time can signal changes in the health status of the population, as well as provide a baseline indicator for the effectiveness of the health system. Patterns of mortality in the community, including cause, age, sex, population group and geographical distribution, inform the work of people working in health policy, planning and administration, as well as health researchers and medical personnel (AIHW, 2011e).

The ABS compiles mortality statistics and codes causes of death using information from jurisdictional registrars, classified according to the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision* (ICD-10). Rates are expressed as standardised death rates (SDRs), which enable the comparison of death rates between populations over time by relating them to a standard population.

Mortality

Over the last two decades or so, death rates in Australia have declined for both males and females in all age groups.

Death rates for men aged 85 years and over dropped from 175.7 to 146.3 deaths per 1,000 during this period, while rates for women aged 85 years and over dropped from 143.5 to 127.1 deaths per 1,000. Rates for boys aged 1 to 4 years dropped from 0.6 deaths per 1,000 in 1991 to 0.2 per 1,000 in 2010; while for girls aged 1 to 4 years, rates remained relatively steady at an average of 0.2 deaths per 1,000 standard population.

Overall, the standardised death rate (SDR) decreased from 6.9 deaths per 1,000 standard population in 1991 to 5.7 deaths per 1,000 standard population in 2010.

In 2010, the SDR was higher for males than females (6.8 compared with 4.7 deaths per 1,000 standard population). The highest SDR was in the Northern Territory (7.7 deaths per 1,000 standard population), while the lowest was in the Australian Capital Territory (5.3 deaths per 1,000 standard population). More information on deaths can be found in chapter 7 *Population*.

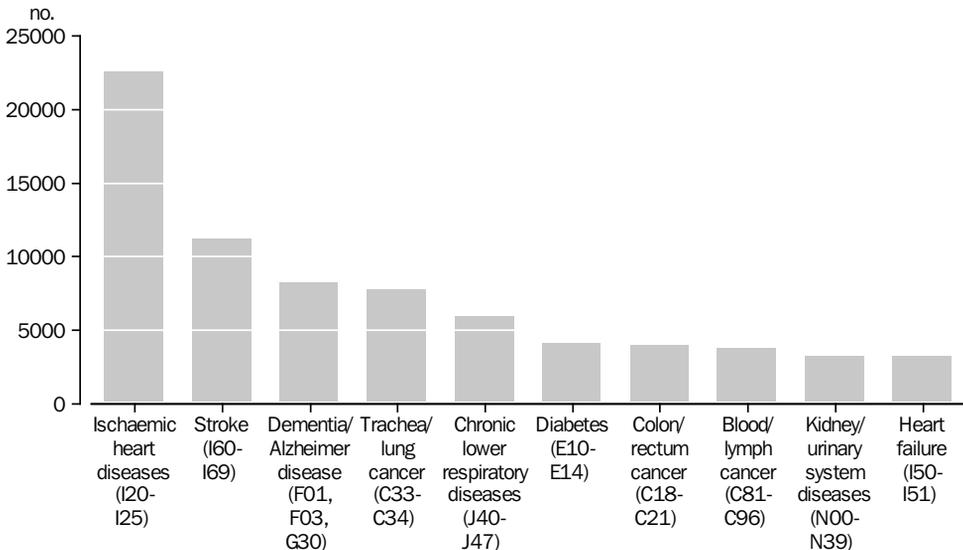
Infant mortality

Infant mortality (deaths under one year of age) is an important indicator of the general health and wellbeing of a population, and has a large influence on life expectancy at birth (because a high infant mortality rate lowers life expectancy). Infant mortality rates are expressed as number of deaths in a specified period per 1,000 live births in the same period.

Over the last two decades or so, the mortality rate for infant boys was consistently higher than that for infant girls, although both declined. Between 1991 and 2010, the male infant mortality rate decreased from 7.9 to 4.8 deaths per 1,000 live births, while the female infant mortality rate decreased from 6.3 to 3.4 deaths.

This decline was evident during the whole of the 20th century, but particularly in the first half. For every 1,000 babies born in Australia in 1904, nearly 82 died before their first birthday. By 1950, this had reduced to around 29 deaths per 1,000 live births, and by 2010 the rate was just over 4 deaths per 1,000 live births. In 2008, 39% of all infant deaths occurred within the first day of birth, with a further 31% occurring before

11.15 LEADING CAUSES OF DEATH(a), AUSTRALIA—2009(b)(c)



(a) Causes listed are the leading causes of death for all deaths registered in 2009, based on WHO recommended tabulation of leading causes.

(b) Causes of death data for 2009 are preliminary and subject to a revisions process.

(c) See Explanatory Notes of Causes of Death, Australia, 2009 (3303.0) for further information on specific issues relating to 2009 data.

Source: ABS data available on request, *Causes of Death, Australia, 2009*.

the baby reached four weeks of age. The decline was largely due to improvements in prenatal and postnatal care, birth conditions and sanitation, as well as drug development, mass vaccination, and lower rates of infectious diseases (*Measures of Australia's Progress, 2010, 1370.0*).

The Aboriginal and Torres Strait Islander infant mortality rate varies across Australia. In New South Wales, the rate was 7.7 deaths per 1,000 live births in the period 2006–08, compared with the non-Indigenous infant mortality rate of 4.3 deaths per 1,000 live births. In the Northern Territory, the Aboriginal and Torres Strait Islander infant mortality rate was over three times as high as the non-Indigenous rate (13.6 deaths compared with 3.8 deaths per 1,000 live births) (*Measures of Australia's Progress, 2010, 1370.0*).

Causes of death

Causes of death statistics enable sound formulation and monitoring of health and other social policies. In Australia, causes of death statistics are recorded as both underlying cause (i.e. the disease or injury that initiated the train of morbid events leading directly to death) and multiple cause (i.e. all causes and conditions reported on the death certificate that contributed, were associated with or were the underlying cause of the death).

In 2009, the leading underlying cause of death for all Australians was Ischaemic heart disease, which includes angina, blocked arteries of the heart and heart attacks (22,523 deaths). While ischaemic heart diseases have been the leading cause of death in Australia since 2000, the proportion of deaths due to this cause has decreased from 21% of all deaths registered in 2000 to 16% of all deaths registered in 2009.

Cerebrovascular disease (strokes) remained the second leading underlying cause of death in 2009. Deaths from this cause also decreased over the last 10 years by 8.8%, from 12,300 deaths in 2000 to 11,220 deaths in 2009.

While rates for the top two leading causes of death have been decreasing, those for the next two highest causes have been increasing. Dementia and Alzheimer's disease was the third leading cause of death in 2009, increasing by 126% since 2000 (from 3,655 deaths in 2000 to 8,277 deaths in 2009). This is largely due to an increase in deaths coded to dementia, from

2,096 in 2000 to 5,836 in 2009. Trachea and lung cancers were the fourth leading cause of death in 2009, increasing by 13% from 6,878 deaths in 2000 to 7,786 deaths in 2009 (*Causes of Death, Australia, 2009, 3303.0*) (graph 11.15). (Note that updates to coding instructions have resulted in the assignment of some deaths shifting from Cerebrovascular diseases to Vascular dementia. Changes in recent years to the *Veterans' Entitlements Act 1986* (Cwlth) and *Military Rehabilitation and Compensation Act 2004* (Cwlth) now allow for death from vascular dementia of veterans or members of the defence forces to be related to relevant service, which is also believed to have had an effect on the number of deaths attributed to dementia (*Causes of Death, Australia, 2009, 3303.0*).

The top 10 leading causes of death accounted for 53% of all deaths registered in 2009.

Information on causes of death for all NHPA conditions can be found in *Health status*.

Life expectancy

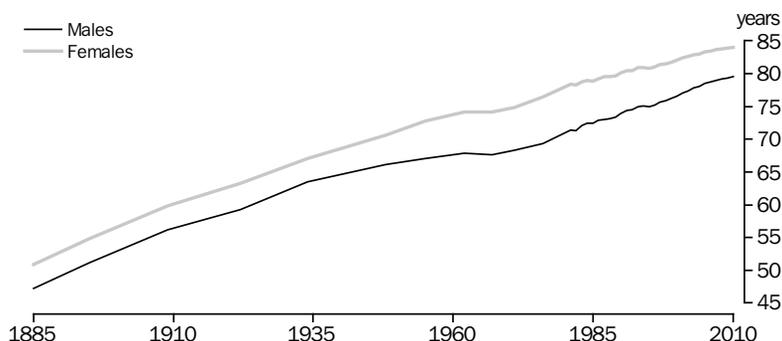
Life expectancy at birth is one of the most widely used and internationally recognised indicators of population health. High life expectancy at birth generally indicates low levels of infant mortality, a safe environment in which to live, a good health care system, sufficient food and the adoption of preventative health measures.

How long people live is of considerable social policy interest in light of the implications for population growth, projected Australian Government spending on health, age-related pensions and aged care, and the workforce's ability to maintain current levels of economic growth.

In Australia, life expectancy at birth has consistently improved over the past 125 years or so, as shown in graph 11.16. Based on current mortality rates, a boy born in the period 2008–2010 can expect to live 79.5 years, while a girl can expect to live 84.0 years. In 2009, Australia's life expectancy ranked sixth highest amongst OECD countries for both males and females (OECD, 2011). International comparisons of life expectancy can be found in chapter 7 *Population*.

Other information on life expectancy can also be found in chapter 7 *Population*.

11.16 LIFE EXPECTANCY AT BIRTH—1885–2010



Source: ABS data available on request, *Australian Historical Population Statistics, 2008; Deaths, Australia, 2009.*

Communicable diseases

Communicable diseases are capable of being transmitted from one person to another, or, in some cases, from one species to another. Through the National Notifiable Diseases Surveillance System (NNDSS), state and territory health authorities submit reports of 65 communicable disease notifications for compilation by the Department of Health and Ageing (DoHA).

There were 203,189 notifications to NNDSS in 2010, a decrease of 14% on the 236,696 notifications made in 2009 (table 11.17).

The peak in notifications in 2009 was largely due to cases of influenza A (H1N1). In 2010, sexually transmittable infections (STI) were the most commonly reported communicable diseases, accounting for 43% of all notifications. This was followed by vaccine preventable diseases (VPD) (30%) and gastrointestinal diseases (16%).

Chlamydia was the most common STI with 74,305 notifications (86% of total STIs). Pertussis (whooping cough) was the most common VPD with 34,793 notifications (56% of total VPDs). Campylobacteriosis was the most common gastroenteritis, with 16,966 notifications (54% of total gastrointestinal diseases).

11.17 NOTIFICATIONS(a) OF COMMUNICABLE DISEASES, Australia—2009 and 2010

	2009	2010
Bloodborne diseases		
Hepatitis (NEC)	0	0
Hepatitis B (newly acquired)	241	229
Hepatitis B (unspecified)(b)	7 094	4 446
Hepatitis C (newly acquired)(c)	385	362
Hepatitis C (unspecified)(b)	11 089	7 286
Hepatitis D	35	35
Gastrointestinal diseases		
Botulism	1	0
Campylobacteriosis	16 081	16 966
Cryptosporidiosis	4 626	1 480
Haemolytic uraemic syndrome (HUS)	13	8
Hepatitis A	563	263
Hepatitis E	33	38
Listeriosis	92	71
STEC, VTEC	130	81
Salmonellosis	9 586	11 993
Shigellosis	622	552
Typhoid Fever	116	96

For footnotes see end of table.

...continued

11.17 NOTIFICATIONS(a) OF COMMUNICABLE DISEASES, Australia—2009 and 2010 ...continued

	2009	2010
Other bacterial infections		
Legionellosis	302	298
Leprosy	4	11
Meningococcal disease (invasive)	259	230
Tuberculosis	1 324	1 327
Quarantinable diseases		
Cholera	5	3
HPAIIH	0	0
Plague	0	0
Rabies	0	0
Severe Acute Respiratory Syndrome (SARS)	0	0
Smallpox	0	0
Viral haemorrhagic fever (NEC)	0	0
Yellow fever	0	0
Sexually transmissible infections		
Chlamydial infection	62 632	74 305
Donovanosis	1	1
Gonococcal infection	7 963	9 971
Syphilis – congenital	3	3
Syphilis < 2 years	1 310	1 099
Syphilis > 2 years or unspecified duration	1 398	1 241
Vaccine preventable diseases		
Diphtheria	0	0
Haemophilus influenzae type b	19	24
Influenza (laboratory confirmed)	59 090	13 419
Measles	104	70
Mumps	165	95
Pertussis	29 794	34 793
Pneumococcal disease (invasive)	1 557	1 644
Poliomyelitis	0	0
Rubella	27	44
Rubella Congenital	0	0
Tetanus	3	2
Varicella zoster (Chickenpox)+	1 753	1 743
Varicella zoster (Shingles)+	2 716	2 978
Varicella zoster (Unspecified)+	6 775	7 152
Vectorborne diseases		
Arbovirus infection (NEC)	8	24
Barmah Forest virus infection	1 480	1 471
Chikungunya virus infection	28	54
Dengue virus infection	1 406	1 201
Japanese encephalitis virus infection	0	0
Kunjin virus infection	2	2
Malaria	508	399
Murray Valley encephalitis virus infection	4	0
Ross River virus infection	4 796	5 147
Zoonoses		
Anthrax	0	1
Australian bat lyssavirus	0	0
Brucellosis	32	21
Leptospirosis	146	131
Lyssavirus (NEC)	0	0
Ornithosis	65	56
Q fever	310	323
Tularaemia	0	0

(a) Diseases reported to NNDS from all jurisdictions except campylobacteriosis and varicella, which are not notifiable in New South Wales.

(b) Notifications of hepatitis B (unspecified) and hepatitis C (unspecified) from New South Wales for 2010 have been excluded due to data quality issues.

(c) Notifications of incident hepatitis C are reported as hepatitis C (unspecified) in Queensland.

Source: Department of Health and Ageing, Nationally Notifiable Diseases Surveillance System, extracted on 27 June 2011.

HIV and AIDS

In collaboration with jurisdictional health authorities and the Australian Government, surveillance for Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) is conducted by the Kirby Institute for Infection and Immunity in Society (formerly the National Centre in HIV Epidemiology and Clinical Research). The Kirby Institute is directly affiliated with the Faculty of Medicine at the University of New South Wales, and receives funding through the Australian Government Department of Health and Ageing (DoHA).

At 31 December 2010, 30,486 cases of HIV infection had been diagnosed in Australia, and an estimated 21,391 people were living with a diagnosed HIV infection. The number of new HIV diagnoses in Australia in 2010 was 1,043. The annual number of new HIV diagnoses has remained relatively stable at around 1,000 since 2006 (table 11.18).

Transmission of HIV in Australia continues to be mainly through sexual contact between men (67% in 2010), with the rate of exposure through heterosexual contact being 28% in 2010 (table 11.19).

11.18 NEWLY DIAGNOSED HIV CASES(a)(b)—2006–2010

	2006	2007	2008	2009	2010	Total(c)
HIV cases(a)	1 009	1 051	1 012	1 062	1 043	30 486

(a) Not adjusted for multiple reporting. Cumulative to 31 December 2010.

(b) The number of HIV/AIDS diagnoses for each year may be revised over time due to late reports, updated information on exposure and testing history for reported cases, and removal of previously unrecognised duplicate diagnoses.

(c) Includes all cases reported prior to 2006.

Source: *The Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2011.*

11.19 CHARACTERISTICS OF CASES OF NEWLY DIAGNOSED HIV INFECTION, By year of diagnoses(a), Number and distribution of cases

	Units	2004	2005	2006	2007	2008	2009	2010	Total(b)
Total cases	no.	913	965	1 009	1 051	1 012	1 062	1 043	30 486
Males	%	86.0	90.2	85.2	86.8	86.0	86.3	85.5	90.9
State or territory									
New South Wales	%	45.3	42.2	39.0	39.6	36.3	35.7	33.7	52.9
Victoria	%	23.5	26.6	28.3	27.1	28.2	27.3	26.8	22.3
Queensland	%	17.1	17.6	16.4	18.7	19.8	19.7	23.2	12.6
South Australia	%	5.9	5.3	6.0	5.3	4.6	5.0	3.9	5.2
Western Australia	%	5.5	6.6	7.8	7.3	8.1	8.4	9.7	7.5
Tasmania	%	1.0	0.6	0.7	0.7	1.3	1.3	1.0	0.8
Northern Territory	%	0.9	0.3	1.1	0.6	1.1	1.5	0.6	0.9
Australian Capital Territory	%	0.8	0.7	0.6	0.9	0.7	1.1	1.2	0.9
Exposure category(c)									
Male homosexual contact	%	67.4	72.1	67.5	68.2	65.7	64.6	67.0	74.1
Male homosexual contact and injecting drug use	%	4.1	4.5	3.9	2.8	3.3	3.5	2.3	4.2
Injecting drug use(d)	%	4.4	3.4	2.8	2.8	3.2	2.3	2.4	3.8
Heterosexual contact	%	23.8	19.3	25.2	25.1	27.0	28.4	27.7	14.5
Haemophilia/coagulation disorder	%	—	—	—	—	—	—	—	1.1
Receipt of blood/tissue	%	—	0.1	—	—	0.1	0.1	0.1	0.9
Mother with/at risk of HIV infection	%	0.1	0.6	0.6	0.9	0.6	1.1	0.6	0.4
Health care setting	%	0.2	—	—	—	—	—	—	—
Other/undetermined	%	7.4	9.2	6.8	6.5	4.4	5.7	7.4	14.7

— nil or rounded to zero (including null cells)

(a) The number of HIV/AIDS diagnoses for each year may be revised over time due to late reports, updated information on exposure and testing history for reported cases, and removal of previously unrecognised duplicate diagnoses.

(b) Includes all reported cases prior to 2004. Not adjusted for multiple reporting.

(c) The 'Other/undetermined' category was excluded from the calculation of the percentage of cases attributed to each HIV exposure category.

(d) Excludes males who also reported a history of homosexual/bisexual contact.

Source: *The Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2011.*

Children's immunisation

Immunisation programs for children are recognised as an effective public health intervention and have been responsible for eradicating or minimising serious infectious diseases such as measles, diphtheria and polio in Australia.

The Australian Childhood Immunisation Register (ACIR), which commenced operation on 1 January 1996, aims to provide accurate and comprehensive information about immunisation coverage for all children under the age of seven. The ACIR is administered by Medicare Australia and is a key component of initiatives to improve the immunisation status of Australian children.

Immunisation coverage goals for Australia for the year 2000, recommended by the NHMRC, called for 90% or more coverage of children at two years of age, and near universal coverage of children at school-entry age, against diphtheria, tetanus, pertussis (whooping cough), poliomyelitis, measles, mumps, rubella and Hib (Haemophilus influenzae type b).

From 1 July 2010 to 30 June 2011, an estimated 91% of one-year olds, 93% of two-year olds and 89% of five-year olds were fully-immunised as recorded in ACIR.

Health risk factors

Health and wellbeing are affected by a range of socio-economic, biomedical and environmental factors. They are also affected by lifestyle behaviours, known as risk factors, which increase the possibility of ill health, disability, disease or death (AIHW, 2011f). Where people have multiple

risk factors, such as a combination of excessive alcohol intake, smoking and low exercise, their overall risk of disease and poor health increases even further.

Many chronic diseases can be prevented, delayed or improved by addressing lifestyle factors such as smoking, poor diet, insufficient exercise or obesity. As most risk behaviours are modifiable, health policy-makers can achieve population health benefits by targeting risk factors through legislation, education and incentive measures. They can monitor the progress of their efforts through use of population information, such as that presented below.

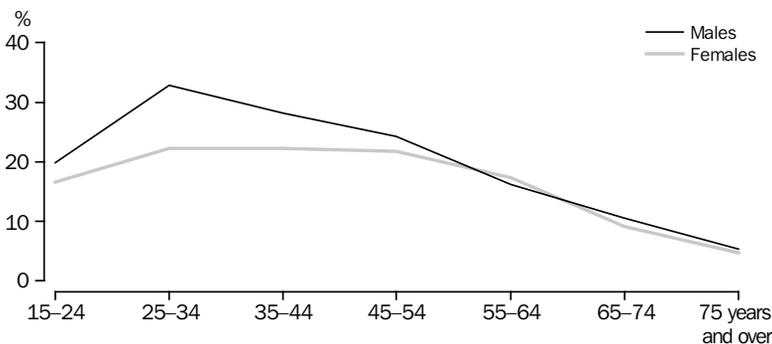
The ABS collects data on a number of lifestyle behaviours that are recognised as risks to health, including tobacco smoking, alcohol consumption, low exercise level, overweight and obesity, and low fruit and vegetable consumption. This section presents findings for these health risk factors.

Smoking

Tobacco smoking is one of the more prominent lifestyle behaviours contributing to health risk in Australia. While rates in general are trending down, there is still some way to go, with around one in five people (20%) aged 15 years and over reporting being current smokers in 2007–08.

Of persons aged 15 years and over, 18% were daily smokers, 2% smoked less often than once a day, 29% were ex-smokers, and 52% reported that they had never smoked. Overall, more males than females were current smokers (22% and 18% respectively), although this is largely driven by higher rates for males in the younger adult age groups (15–44 years) (graph 11.20).

11.20 PERSONS 15 YEARS AND OVER, RATES OF CURRENT SMOKING, By age and sex



Source: ABS data available on request, National Health Survey, 2007–08.

In 2007–08, smokers were more likely to report a combination of risk factors than non-smokers. Around half of current smokers aged 18 years and over led a sedentary lifestyle, doing very little or no exercise (51% compared with 38% of those who had never smoked). Current smokers were also more than three times as likely as people who had never smoked to drink alcohol at levels associated with a high risk of harm (23% compared with 8%).

In terms of associated health outcomes, 2007–08 data showed that people who had ever smoked were over six times more likely to have emphysema and one and a half times as likely to have bronchitis as people who had never smoked. Heart, stroke and vascular disease was also more prevalent in adults who had ever smoked (8%) than those who had never smoked (5%).

Alcohol consumption

Alcohol is widely used and enjoyed in Australian society but the harmful use of alcohol is a problem that globally results in around 2.5 million deaths worldwide each year, and causes harm beyond the physical and psychological health of the drinker. An intoxicated person can harm others or put them at risk of traffic accidents or violent behaviour, and can negatively affect co-workers, relatives, friends or strangers. A significant proportion of the disease burden attributable to harmful drinking arises from injuries, including those due to road traffic accidents, violence, and suicides (WHO, 2011a).

Although low to moderate alcohol consumption may offer some protective health effects, high alcohol consumption is a major determinant of alcohol use disorders (such as alcoholic psychosis and alcohol dependence syndrome), epilepsy, cardiovascular diseases, cirrhosis of the liver and various cancers. As alcohol consumption weakens the immune system, the harmful use of alcohol is also associated with several infectious diseases like HIV/AIDS, tuberculosis and sexually transmitted infections (WHO, 2011a).

In the 2007–08 NHS, people were classified to a health risk level according to the 2001 NHMRC guidelines for alcohol consumption (low risk, risky, or high risk of long-term harm) based on their estimated average daily consumption of alcohol during the previous week. Survey results showed that three in five Australians

aged 18 years and over (62%) drank alcohol in the previous week and of these, over one in five drank alcohol at risky or high risk levels for long-term harm (22%).

Rates of drinking at harmful levels were highest for men aged 25–34 years (17%), and for women aged 18–24 years or 45–54 years (both 14%).

Exercise

Physical activity is an important factor in maintaining good overall health and wellbeing. Being physically active has significant health benefits, including reducing the risk of some chronic conditions, helping to control weight and improving mental wellbeing. Some forms of physical activity may also help manage long-term conditions, such as arthritis and Type 2 diabetes, by reducing the effects of the conditions and improving people's quality of life.

In recent decades, there has been a decline in physical activity due to the increasingly sedentary nature of many forms of work, activities such as watching television or using a computer, and changes in transportation. Sedentary behaviour is believed to be associated with the rise in overweight and obesity, which increases the risk of cardiovascular disease, colon and breast cancers, Type 2 diabetes and osteoporosis (AIHW, 2011g). In 2006–07, the direct health care costs due to physical inactivity in Australia were estimated to be \$1.5 billion, including \$469 million attributable to falls and \$372 million attributable to coronary heart disease (Econtech, 2007).

Worldwide, physical inactivity is the fourth leading risk factor for mortality, contributing to 6% of deaths (WHO, 2010), and is a leading modifiable health risk factor contributing to the burden of disease and injury in Australia (Begg et al., 2007).

In 2007–08, 60% of Australians adults (18 years and over) had done some exercise for fitness, recreation or sport in the week prior to interview, with:

- 44% walking for exercise
- 31% doing moderate exercise (i.e. exercise that caused a moderate increase in heart rate or breathing) and
- 6% doing vigorous exercise (i.e. exercise that caused a large increase in heart rate or breathing).

Women were more likely to walk for exercise than men (46% compared with 41%), and men were more likely to do moderate exercise (34% compared with 29%) or vigorous exercise (16% compared with 10%). Moderate and vigorous exercise were most common among younger age groups, while older people tended to walk for exercise. (Note that people could report more than one type of exercise.)

However, only 38% of Australians aged 18 years and over met the recommended physical activity guidelines of at least 30 minutes of exercise on most days of the week, with each session lasting 10 minutes or more. This was more common for men than women (40% and 36% respectively) and for younger people.

Even when people were exercising, the health benefits accruing from the exercise may have been jeopardised by their work and leisure habits. Prolonged periods of sitting may not only be detrimental to people’s health but may also counteract the benefits of regular moderate to vigorous physical activity (Healy et al., 2008). More than three out of four Australians aged 18 years and over spent between two and six hours a day sitting at leisure activities such as watching television, reading or playing computer games (78%), and almost half (45%) spent most of their time sitting at work.

Almost 40% of Australians aged 18 years and over did no exercise at all in the week prior to the survey.

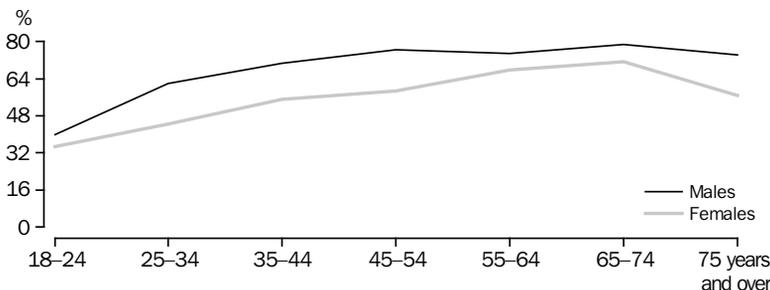
Overweight and obesity

The health consequences of overweight and obesity are many and varied, ranging from an increased risk of premature death to several non-fatal but debilitating complaints that have an adverse effect on people’s quality of life (WHO, 1999). Around 44% of the diabetes burden, 23% of the ischaemic heart disease burden and between 7% and 41% of selected cancer burdens are attributable to overweight and obesity (WHO, 2011b).

Overweight and obesity can affect a person’s ability to work or participate in family and community activities, and can have serious implications for the health sector in terms of cost and burden on services. In 2008, it was estimated that the overall cost of obesity to Australian society and governments was \$58 billion (Access Economics, 2008).

Using measured height and weight data to calculate a person’s body mass index (BMI), ABS data showed that in Australia in 2007–08, around 25% of people aged 18 years and over were obese, 37% were overweight, a further 37% were in the normal weight range and 2% were underweight. More men (68%) were overweight or obese than women (55%). Rates of overweight and obesity generally increased with age, peaking at 65–74 years for both men and women (graph 11.21). (BMI is a simple index of weight for height that is commonly used in classifying people into the following ranges: underweight, normal weight, overweight and obese. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m²).

**11.21 PROPORTION OF AUSTRALIAN ADULTS OVERWEIGHT OR OBESE(a),
By age and sex**



(a) People aged 18 years and over, excluding those for whom measured height and weight were not available.

Source: ABS data available on request, National Health Survey, 2007–08.

After adjusting for age, rates of overweight and obesity in Australian adults increased from 57% in 1995 (65% of men and 50% of women) to 61% in 2007–08 (68% of men and 55% of women).

Overweight and obesity in children is a major health concern. Studies have shown that once children become obese they are more likely to stay obese into adulthood and have an increased risk of developing both short and long-term health conditions, such as Type 2 diabetes and cardiovascular disease (*Australian Social Trends, September 2009*, 4102.0). In 2007–08, one in four children aged 5–17 years (25%) were classified as overweight or obese.

High blood pressure and high cholesterol

High blood pressure, or hypertension, is a major risk factor for a range of health problems, including bleeding from the aorta, chronic kidney disease, heart attack and heart failure, poor blood supply to the legs, stroke and vision problems (*PubMed Health*, 2011). Along with obesity, other major causes of hypertension are diets that are high in salt, excessive alcohol consumption and insufficient physical activity.

In 2007–08, just over 9% of Australians had hypertension or a hypertensive disease. People who were obese had a greater likelihood of having hypertension or a hypertensive disease than those in other weight ranges (16% compared with 11% of overweight people and 8% of people in the normal weight range).

High cholesterol is also considered a risk factor for a number of circulatory conditions. High cholesterol levels were reported by 6% of the population in 2007–08, with the prevalence highest for those in the 65–74 year and 75 years and over age groups (19% and 16% respectively). Around 27% of people with high cholesterol had a heart, stroke or vascular disease, compared with 4% of people who did not report high cholesterol. Over half of all people reporting high cholesterol also reported having hypertension or a hypertensive disease (55% compared with 7% of people without high cholesterol levels). Almost one in five people with high cholesterol had been diagnosed with diabetes (18%, compared with 3% of those who did not report high cholesterol).

Fruit and vegetable intake

Fruit and vegetables contain essential vitamins, minerals and fibre that help reduce the risk of chronic diseases. Regular consumption of fruit and vegetables is associated with reduced risks of cancer, cardiovascular disease, stroke, Alzheimer's disease, cataracts, and some of the functional declines associated with ageing (Liu, 2003). In 2007–08, just over half of children aged 5–7 years (57%), a third of children aged 8–11 years (33%), 5% of people aged 12–18 years, and 6% of people aged 19 years and over ate the recommended daily serves of fruit and vegetables for their age group.

For more information on the consumption of fruit and vegetables in Australia, see the special article *In pursuit of 2 & 5 – fruit and vegetable consumption in Australia* in this chapter.

New Australian Health Survey to provide fresh insights

The ABS is currently conducting the 2011–13 Australian Health Survey (AHS). The AHS builds on previous health surveys and will allow comparisons of health information over time on topics such as obesity, smoking, health conditions and how people manage their health.

The AHS will also collect new information about food and nutrient consumption, detailed physical activity and, for the first time, biomedical measures. These biomedical measures will reveal new insights into heart and kidney disease, diabetes and other chronic conditions by enabling examination of health factors such as cholesterol, glucose and sodium levels. The survey will also allow analysis of the relationship between biomedical measures, lifestyle factors and health outcomes. First results will be available from late 2013.

Health service usage and experiences of care

Evaluating the provision of health services in Australia involves bringing together a number of different types of information. While large amounts of data in relation to health service usage are available from Medicare, the Pharmaceutical Benefits Scheme (PBS) and public hospital collections, these sources are designed primarily for administrative purposes and do not provide representative population level statistics, particularly in relation to issues such as unmet need for services. In addition, while growing worldwide interest in capturing information from a patient's perspective has encouraged hospitals to collect patient experience data in Australia, these collections are limited to local coverage and do not support robust national reporting.

Two ABS collections, the National Health Survey (NHS) and Patient Experience Survey (PEX) address these issues directly and provide information on health service usage and experience of care in Australia. Introduced in 2009, the PEX provides data on access and barriers to a range of health services, complementing data on visits to general practitioners (GPs) and other selected health professionals collected in the NHS.

This section presents self-reported information on health service usage and experiences of Australians aged 15 years and over for their own health. The reference period is the 12 months prior to the 2010–11 PEX, unless otherwise specified. Data were only collected from people living in private dwellings.

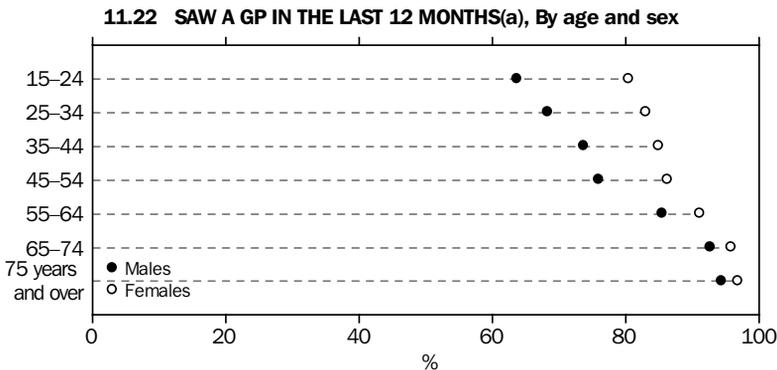
Administrative data on health service provision and financing is available in the next section of this chapter.

Access – use of health services

General practitioners (GPs) are the most used health service providers in Australia. In 2010–11, an estimated 14.5 million people aged 15 years and over (82%) had seen a GP at least once in the previous year, with 11.8 million seeing a GP more than once. Females in every age group were more likely to have seen a GP than males, particularly in the younger age groups (graph 11.22). During 2010–11, 12 million people aged 15 years and over were prescribed medication by a GP, and 6.1 million were referred to a medical specialist. Just over one million people had seen a GP after hours (8%).

GP visits were not necessarily remedial. In 2007–08, 65% of Australians aged 15 years and over had been to a GP for a check-up, rising to 95% for people aged 75 years and over (graph 11.23).

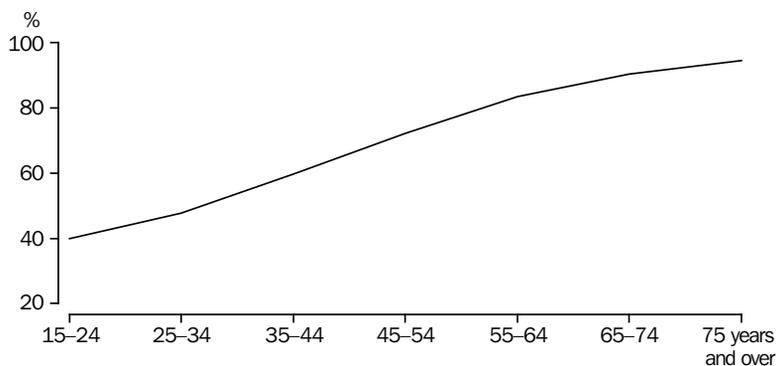
In 2010–11, an estimated 2.7 million people saw a GP for urgent medical care, mostly within four hours of trying to make an appointment (60%). However, nearly 10% of these people did not see a GP until two or more days after first trying to make an appointment. (Note that the definition of 'urgent' was left up to the respondent, but discretionary advice from interviewers was that it should include such things as a rash or fever, and exclude visits to get a certificate for work.)



(a) Persons 15 years and over.

Source: ABS data available on request, Patient Experience Survey, 2010–11.

11.23 PERSONS AGED 15 YEARS AND OVER, CHECK-UPS WITH A GP, By age



Source: ABS data available on request, National Health Survey, 2007–08.

Approximately 2.3 million Australians (13%) had been admitted to hospital in the previous year, 25% of these more than once. About 2.4 million people had visited a hospital emergency department (ED), 28% of them multiple times. People in outer regional and remote areas of Australia were more likely to report visiting an ED (18%) than those in urban areas (12%).

Just under half of people aged 15 years and over reported having a pathology test (49%) in the previous year, and nearly a third reported having an imaging test (32%). Females were more likely to have had diagnostic testing than males.

Unmet need – general health services

In the ABS Patient Experience Survey of 2010–11, all respondents were asked whether there had been any time in the previous year that they had needed health care but could not obtain it. An estimated 2.6% of people reported that there had been times that they had been unable to access health services when they needed them. In 51% of cases, the health service unable to be accessed was a GP, with medical specialists (18%) and hospital care (16%) the next highest services.

The main reasons people gave for not being able to access health care when they needed it were 'waiting times too long or no appointments available' (49%) and 'no service available in the area at the time it was needed' (25%).

Barriers to health service use

Availability

In 2009, 3% of people aged 15 years or over said that they had not been able to see a GP after hours when they had needed to.

In 2010–11, around 21% of people who had visited an ED thought, at the time of visiting, that the care they needed could have been provided by a GP instead. All people who had visited a hospital emergency department in the previous year were asked why they went to an ED rather than a GP, and 29% said it was due to the time of day or day of week that they needed care. Half of the people who visited an ED (49%) reported attending because they considered their condition to be serious or life threatening.

Financial barriers

While health service expenses in Australia are generally at least partly covered by Medicare, some people who needed health services found cost a barrier. In the 2010–11 PEX, need for health services was determined as follows:

- General practitioner: people who had seen or said they needed to see a GP at some time in the previous year
- Medical specialist: people who had been referred to a specialist or said they needed to see a specialist at some time in the previous year
- Dental professional: People who had seen, or said they needed to see, a dental professional at some time in the previous year

11.24 PERSONS WHO NEEDED HEALTH SERVICES(a), But delayed accessing or did not access service due to cost(b)

Type of service	'000	% who needed service
General practitioner	1 205.4	8.2
Medical specialist	809.9	11.9
Dental professional	2 676.0	26.0
Prescription for medication	1 143.9	9.2
Pathology test	257.6	2.9
Imaging test	366.7	6.3

(a) Persons aged 15 years and over who had used, or said they needed to use, selected health services.

(b) At some time in the last 12 months.

Source: ABS data available on request, *Patient Experience Survey, 2010–11*.

- Prescription for medication: people who had been prescribed medication or said they needed prescribed medication at some time in the previous year
- Pathology and imaging tests: people who had been tested, or been referred for a pathology or imaging test, or said they needed a test at some time in the previous year.

In the 2010–11 PEx, all people aged 15 years and over who needed selected health services were asked if they had delayed receiving or had not received that service due to cost. Rates of people finding cost a barrier differed across service types, as shown in table 11.24.

Waiting and travelling times

In 2010–11, around 2.2 million people who had seen a GP (15%) felt that they had waited longer than was acceptable to get an appointment with a GP at some time in the previous year, with more females than males finding the waiting time unacceptable (17% and 13% respectively). Just under 453,000 people who had seen a GP (3%) had to travel more than one hour to see one.

One in five people who were referred to a medical specialist (21%) felt that they had waited longer than was acceptable to see a specialist at some time in the previous year.

Experienced harm or a harmful side-effect

In 2009, over 5% of people aged 15 years and over reported having medication, medical care, treatment or a test that had caused harm or a harmful side-effect at some time in the previous year. Just over half of these people (55%) said that they had been informed of the risk that the

harm or side-effect might occur. Around three-quarters of the people who had experienced harm or a harmful side-effect went to a health professional for their symptoms (74% or 658,600 people).

Health service usage of people with a disability

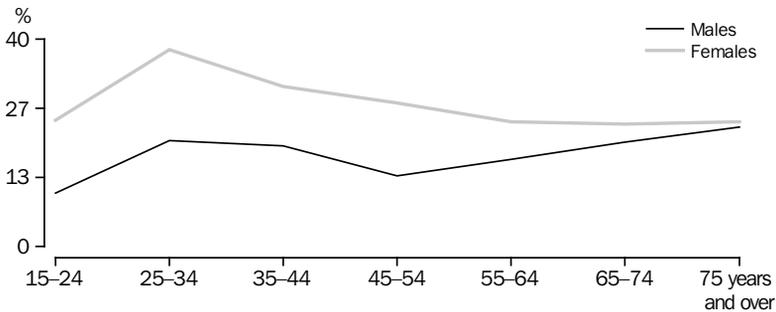
People with a profound or severe disability were much higher users of health services than people without a disability. In 2007–08, people aged 15–64 years with a severe or profound disability were:

- 10 times more likely to have check-ups with a GP at least once a month than people without a disability (29% compared with 3%)
- three and a half times more likely to consult medical specialists (56% compared with 16%), and
- five times more likely to consult both specialists and other health professionals, particularly occupational therapists, and social or welfare workers (41% compared with 8% of people without a disability) (AIHW, 2011h).

Health-related advice from pharmacists

Pharmacists are allied health professionals who focus on safe and effective medication use; however, their role often includes provision of health-related patient care and advice. In 2009, an estimated 23% of Australians aged 15 years or over reported asking a pharmacist for health-related advice (not necessarily for their own health). The majority of these people (79%) reported that the advice met their needs completely and a further 18% reported that it met their needs to some extent.

11.25 PERSONS WHO ASKED PHARMACIST FOR ADVICE IN THE LAST 12 MONTHS(a), by Age and Sex



(a) Persons 15 years and over.

Source: ABS data available on request, Patient Experience Survey, 2010–11.

Overall, females were more likely to have asked for advice than males, particularly in younger age groups (graph 11.25).

Health care delivery and financing

This section draws extensively on material provided by the Australian Government Department of Health and Ageing (October 2011) and is complemented by a special article on private health insurance in Australia.

National health care system

Australia's health care system is funded and administered by several levels of government (national, state/territory and local) and is supported by private health insurance arrangements.

Australia's national public health insurance scheme, Medicare, is funded and administered by the Australian Government and consists of three health care components – medical services (including visits to general practitioners (GPs) and other medical practitioners), prescription pharmaceuticals and hospital treatment as a public patient (the latter is jointly funded by the Australian and state/territory governments).

The Australian and state/territory governments fund and deliver a range of other health services including population health programs, community health services, health and medical research, Aboriginal and Torres Strait Islander health services, mental health services, health workforce and health infrastructure.

The Australian Government is primarily responsible for health service funding; regulation of health products, services and workforce; and national health policy leadership. The states and territories are primarily responsible for the delivery and management of public health services (including public hospitals, community health and public dental care), and the regulation of health care providers and private health facilities. Local governments fund and deliver some health services such as environmental health programs.

This public system is supported by optional private health insurance (and injury compensation insurance) for hospital treatment as a private patient and for ancillary health services (such as physiotherapy and dental services) provided outside a hospital.

Most medical and allied health practitioners are employed in private practice. A small number of doctors and allied health professionals are salaried employees of the various tiers of government.

Role of the Australian Government

The Australian Government has national responsibility for the following major health funding mechanisms:

- The Medicare Benefits Schedule (MBS) component of Medicare provides rebates for medical and hospital services to all Australian residents.

- The Pharmaceutical Benefits Scheme (PBS) component of Medicare provides rebates to private patients for a wide range of prescription pharmaceuticals.
- National Healthcare Specific Purpose Payments (SPPs), which are associated with the National Healthcare Agreement, enable each state and territory to fund a range of public hospital and health services, including the public hospital component of Medicare. National Healthcare SPPs will be replaced by National Health Reform funding from 2012–13.
- The National Health Reform Agreement includes Australian Government growth funding to states and territories for public hospital services. This is a national approach to activity-based funding of public hospital services and block funding for small regional and rural hospitals; and new performance, accountability and transparency mechanisms.
- National Partnership Agreements (NPAs) fund the delivery of specific projects or reforms by states and territories. These currently include hospital reform, preventive health, workforce reform, Aboriginal and Torres Strait Islander health, elective surgery, e-health, vaccines, health infrastructure projects and a range of health services, including cancer screening and health protection programs.
- The private health insurance rebate subsidises the cost of private health insurance premiums, making it easier for Australians to access treatment as private patients in hospital, as well as a range of ancillary health services.
- Grants and payments to government and non-government health service providers for a range of health services (e.g. radiation oncology, pathology and primary care medical services) improve service access for specific population groups, influence the growth and distribution of health services, and improve the quality of service and health outcomes; and
- Health services for war and defence service veterans are provided under a number of schemes administered through the Department of Veterans' Affairs. These include the Local Medical Officer Scheme, the Repatriation Pharmaceutical Benefits Scheme, and the Repatriation Private Patients Scheme (for treatment as a private patient in hospital).

Medicare

Medicare provides universal access to subsidised medical and pharmaceutical services and free hospital treatment as a public patient. Introduced in 1984, Medicare's objectives are to make health care accessible and affordable to all Australians, and to provide a high quality of care.

Medicare Benefits Schedule (MBS)

The MBS provides financial assistance to patients in the form of rebates, to assist in covering the cost of selected professional services rendered by medical practitioners, participating optometrists, practice nurses, dentists and other allied health professionals.

Medicare benefits are based on a schedule of fees, which are set by the Government in consultation with the medical profession. Practitioners are not required to adhere to the Schedule fee, except for optometry, which is a participating scheme under which practitioners sign an undertaking to charge no more than the Schedule fee for the services they perform.

For private hospital treatment or 'hospital substitute treatment' covered by private health insurance, the Medicare benefit is 75% of the Schedule fee. Amounts paid in excess of the rebate may be claimed under private health insurance arrangements. For out-of-hospital services, the Medicare benefit is 100% of the Schedule fee for non-referred (GP) attendances, including practice nurse items, and for all other out-of-hospital services, 85% of the Schedule fee or the Schedule fee less the maximum gap (\$71.20 from 1 November 2010, indexed annually), depending on which is greater. Where practitioners bulk-bill Medicare Australia, they receive the Medicare rebate directly, and they cannot levy additional charges on the patient.

With effect from 1 February 2004, additional benefits of \$5.00 per transaction were paid to GPs as an incentive for bulk-billing patients in metropolitan areas. This incentive has been indexed annually and in 2010 a benefit of \$5.75 applied to bulk-billed services provided by GPs to persons under 16 years of age or to Commonwealth concession card holders.

From 1 May 2004, an incentive with a benefit of \$7.50 per transaction was introduced for GPs practicing in rural areas, Tasmania and eligible metropolitan areas. This incentive has been

indexed annually and in 2010 a benefit of \$8.75 applied to bulk-billed services provided by GPs to persons under 16 years of age or Commonwealth concession card holders.

A number of 'safety net' arrangements apply for services provided out-of-hospital that are not bulk-billed. Under the original Medicare Safety Net, when gap payments (the difference between the MBS Schedule fee and the Medicare rebate) exceed \$399.60 for an individual or family in 2011, they are eligible for 100% of the Schedule fee for out-of-hospital service.

Under the Extended Medicare Safety Net (EMSN), an additional rebate is provided to Australian families and singles who have out-of-pocket costs for Medicare eligible out-of-hospital services once an annual threshold in out-of-pocket costs has been met. In 2011, the annual threshold for Commonwealth concession cardholders, including those with a Pensioner Concession Card, a Health Care Card or a Commonwealth Seniors Card, and people who receive Family Tax Benefits (Part A) is \$578.60. For all other singles and families the annual threshold is \$1,157.50. Once the relevant annual threshold has been met, Medicare will pay for 80% of any future out-of-pocket costs for Medicare eligible out-of-hospital services for the remainder of the calendar year, except for a small number of services where an upper limit or 'EMSN benefit cap' applies.

Medicare benefits do not cover services to public patients in public or private hospitals, services provided under Veterans' Affairs arrangements, some compensation cases, and some services provided under other publicly funded programs.

Medicare levy

When Medicare began in 1984, a levy was introduced as a supplement to other taxation revenue to enable the Australian Government to meet the additional costs of the universal national health care system, which were greater than the costs of the more restricted public health insurance systems that preceded it.

The standard Medicare levy is set at 1.5% of an individual's taxable income (except where an individual is exempt or pays a reduced levy because of low income). Individuals and families on higher incomes who do not have an appropriate level of private hospital cover may also have to pay a Medicare levy surcharge, which is an additional 1% of taxable income. In 2010–11, taxation revenue from the Medicare Levy (including the Medicare Levy Surcharge) was \$8.3 billion.

In 2010–11, Medicare Australia paid benefits of \$16.4 billion, or \$722.98 per person for 319 million items of services, an average of 14.1 services per person (table 11.26).

11.26 MEDICARE SERVICES PROVIDED AND BENEFITS PAID

	SERVICES(a)		BENEFITS(b)(c)	
	Total mill.	Per person no.	Total \$m	Per person \$
2001–02	220.7	11.2	7 829.5	398.42
2002–03	221.4	11.1	8 115.5	407.91
2003–04	226.4	11.2	8 600.0	427.28
2004–05	236.3	11.6	9 922.9	486.54
2005–06	247.4	12.0	10 976.3	530.31
2006–07	257.9	12.2	11 735.6	556.91
2007–08	278.7	13.0	13 006.5	605.00
2008–09	294.0	13.4	14 321.9	652.43
2009–10	308.4	13.8	15 477.1	693.15
2010–11	319.1	14.1	16 377.4	722.98

(a) Including increases in services over time reflect structural changes to the Medicare Benefits Schedule, changes in service provision (services previously provided by state and territory governments under grant arrangements now covered by Medicare), population growth and ageing.

(b) Nominal.

(c) In current prices.

Source: <http://www.health.gov.au/internet/main/publishing.nsf/Content/medstat-jun11-tables-aa>; <http://www.health.gov.au/internet/main/publishing.nsf/Content/medstat-jun11-tables-ab>.

Pharmaceutical Benefits Scheme (PBS)

The Australian Government provides Medicare-eligible people with affordable access to a wide range of necessary and cost-effective prescription medicines through the PBS. The following details relate to charges and 'safety net' levels applying at 1 January 2011.

Medicare-eligible patients who do not hold a Health Care Card, Pensioner Concession Card or Commonwealth Seniors Health Card, are required to pay up to the first \$34.20 for each prescription item for medicines listed on the PBS. Concessional patients who hold a concession card must pay \$5.60 per prescription item.

Under private health insurance, health insurers may offer policies that cover the above costs of the prescription items as part of an episode of hospital treatment or an episode of hospital-substitute treatment.

Individuals and families are protected from large overall expenses for PBS-listed medicines by safety nets. For general patients (non-cardholders), once the eligible expenditure of a person and/or their immediate family exceeds \$1,317.20 within a calendar year, the additional payments the patient has to make per item (co-payment) usually decreases from \$34.20 to the concessional co-payment rate of \$5.60.

For concessional and pensioner patients (cardholders), once their total eligible

expenditure exceeds \$336 within a calendar year, any further prescriptions are usually free for the remainder of that year.

In the 2010–11 financial year, the PBS processed 188.1 million benefit prescriptions, representing a cost to the Australian Government of \$8.8 billion (table 11.27). The number of PBS subsidised prescriptions per person in the 2010–11 financial year was 8.4, compared with 8.3 in 2009–10.

Public hospitals

Australia's public hospital system, which provides the majority of acute-care beds, provides free access to hospital care for public patients. It is jointly funded by the Australian Government and state/territory governments (and can also receive revenue from services to private patients). Public hospitals are run by state and territory governments. Australian Government funding to the states and territories for public hospitals is made through the National Healthcare Agreement and the National Health Reform Agreement between the Australian Government and the states and territories.

In 2006–07, there were 758 public hospitals across Australia, compared with 761 in 2003–04. There was an average of 56,000 beds in public hospitals during 2006–07, representing 68% of all public and private hospital beds. The number of available beds per head of population ranged from 3.3 per 1,000 in the Northern Territory to 4.7 per 1,000 in Tasmania.

11.27 PHARMACEUTICAL BENEFITS SCHEME(a), Subsidised prescriptions(b)

Financial Year	Government\	Script	Average Government cost	Subsidised prescriptions
	cost(c)	volume(d)	per script(d)	per capita(d)
	\$m	million	\$	no.
2003–04	5 607.5	165.9	30.17	8.3
2004–05	6 001.2	170.3	31.17	8.4
2005–06	6 163.1	168.3	32.06	8.2
2006–07	6 428.3	168.5	32.50	8.1
2007–08	7 008.9	171.3	34.58	8.1
2008–09	7 654.7	181.8	36.17	8.4
2009–10	8 342.0	183.9	38.23	8.3
2010–11	8 774.9	188.1	38.99	8.4

(a) Payments for prescription medicines subsidised by the Government under the Repatriation Pharmaceutical Benefits Scheme, administered by the Department of Veterans' Affairs, are excluded.

(b) In current prices.

(c) PBS Government cost is reported on an accrual accounting basis. Categories included are expenditure for Section 85 drugs (Concessional and General), Emergency (Doctor's Bag) Drugs, Highly Specialised Drugs, Section 100 drugs and issue costs of Safety Net cards.

(d) All other information is sourced from the relevant Pharmaceutical Benefits Branch publications and is reported on a cash basis. The data only relate to concessional, General and Doctor's Bag categories.

Source: Medicare Australia Data; Commonwealth Department of Health and Ageing.

Private health insurance

At 30 June 2011, private health insurance was offered by 35 registered health insurers, giving a voluntary option to all Australians for private funding of their hospital and ancillary health treatment. It supplements the Medicare system, which provides a tax-financed public system available to all Australians. Private health insurance can cover part or all of:

- hospital theatre and accommodation charges to private patients in either a public or private hospital
- a portion of medical fees
- allied health services
- programs to manage and prevent chronic disease
- dental services
- aids such as spectacles and
- ambulance transport.

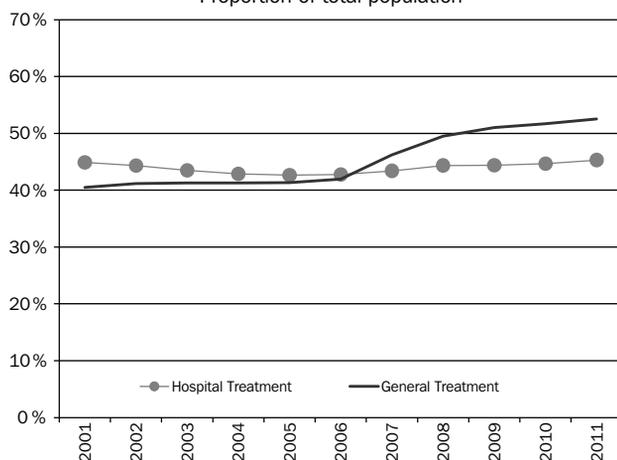
The introduction of a rebate for private health insurance premiums in 1999, and the Government's Lifetime Health Cover policy in 2000, saw private hospital cover increase, with population coverage rates rising from 31% in June 1999 to 43% in June 2000. At 30 June 2011, almost 10.3 million Australians had private hospital insurance cover (45% of the population). Private hospital and general treatment insurance coverage from 2001 to 2011 is shown in graph 11.28.

Household expenditure on health and medical care

The Household Expenditure Survey (HES) provides estimates of expenditure on medical care and health by households across Australia. Expenditure is net of any refunds and rebates received from Medicare, private health insurance companies and employers.

According to the 2009–10 HES, households spent an average of \$65.60 per week on medical care and health expenses. This was approximately 5% of an average household's expenditure on goods and services each week.

11.28 PERSONS WITH PRIVATE HEALTH INSURANCE(a),
Proportion of total population



(a) From 1 April 2007 general treatment policies replaced ancillary policies. General treatment policies cover treatment similar to that previously known as ancillary (e.g. dental) but can also cover hospital-substitute treatment, Chronic Disease Management Programs and hospital-linked ambulance coverage. Many hospital treatment-only policies were reclassified as hospital and general treatment combined policies, causing an artificial increase in the series.

Source: *Private Health Insurance Advisory Council, 2011*, <http://www.phiac.gov.au>.
< <http://www.phiac.gov.au/resources/file/membershipdata/MC%20Jun11.pdf> >

Major items contributing to overall household medical care and health expenditure were accident and health insurance (40%), health practitioners' fees (29%), and medicines, pharmaceutical products and therapeutic appliances (27%). The remainder was mainly taken up by hospital and nursing home charges.

Health practitioners' fees per household averaged \$18.99 a week and were mainly for dental treatments (38%) and specialist doctors' fees (33%). Fees for general practitioners accounted for 9% of all health practitioners' fees, possibly reflecting the higher level of government subsidisation of GP services.

In pursuit of 2 & 5 – fruit and vegetable consumption in Australia

If we are what we eat, then most Australians are at least part 'fruit and veg', but is it a large enough part?

The food that people eat defines to an extent their health, growth and development, with fruit and vegetables playing a major role in this equation. Eating a variety of fruit and vegetables, and enough of them, gives people a better chance of getting all the nutrients and dietary fibre they need (AIHW, 2000), and could help prevent major health conditions such as cardiovascular disease, diabetes, obesity and certain cancers (WHO, 2002).

According to the World Health Organization (WHO), low fruit and vegetable consumption is among the top ten risk factors contributing to global mortality (WHO, 2011). In 2003, low fruit and vegetable consumption was estimated to be responsible for 2.1% of the total burden of disease in Australia (Begg et al., 2007).

In long-running Australian Government campaigns, people are encouraged to 'go for 2 & 5' (i.e. eat two serves of fruit and five serves of vegetables each day). This article looks at the fruit and vegetable consumption of Australians aged 5 years and over to see how well we are

meeting the guidelines.

What should we be eating?

The National Health and Medical Research Council (NHMRC) and the Department of Health and Ageing (DoHA) recommend that people eat the following usual daily serves of fruit and vegetables according to age (table S11.1).

NHMRC and DoHA also recommend that pregnant and breast-feeding women eat 4–5 serves of fruit and 5–7 serves of vegetables a day (NHMRC, 2005).

S11.1 RECOMMENDED DAILY SERVES OF FRUIT AND VEGETABLES

	<i>Fruit</i>	<i>Vegetables</i>
4–7 years	1	2
8–11 years	1	3
12–18 years	3	4
19 years and over	2	5

Source: National Health and Medical Research Council (NHMRC) 2005.

Data source and definitions

This article uses self-reported data from the 2007–08 National Health Survey (NHS) for the number of serves of fruit and vegetables that people usually ate each day. Data for children aged 5–14 years, and for 36% of children aged 15–17 years, was provided by proxy (mostly a parent), in which case the data reflect the parent's knowledge of the child's consumption.

A serve of vegetables was defined as half a cup of cooked vegetables, one medium potato or one cup of salad vegetables (approximately 75 grams). Tomatoes were included as a vegetable rather than a fruit, and legumes were excluded (because the main food material in legumes is the seeds, which are in a separate category).

A serve of fruit was defined as one medium piece or two small pieces of fresh fruit, one cup of diced fruit, a quarter of a cup of sultanas, or four dried apricot halves (approximately 150 grams of fresh fruit or 50 grams of dried fruit).

Fruit and vegetable juices were excluded from consumption measures as their fruit or vegetable content was not able to be accurately gauged.

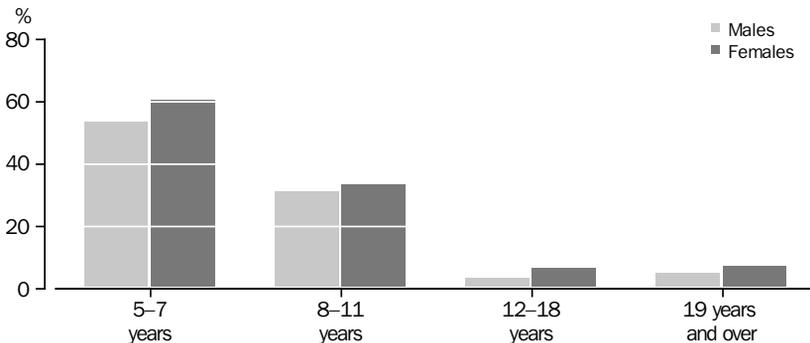
Are Australians meeting the guidelines?

Actually – not many of us. In 2007–08, just over half of all children aged 5–7 years (57%) and a third of children aged 8–11 years (32%) ate the recommended amount of fruit and vegetables but only 5% of people aged 12–18 years and 6% of people 19 years and over did so. Women and girls aged 12 years and over were slightly more likely to have eaten the recommended serves of fruit and vegetables than males the same age, but the difference between boys and girls aged 5–11 years was not statistically significant (graph S11.2).

How much fruit and veg are we actually eating?

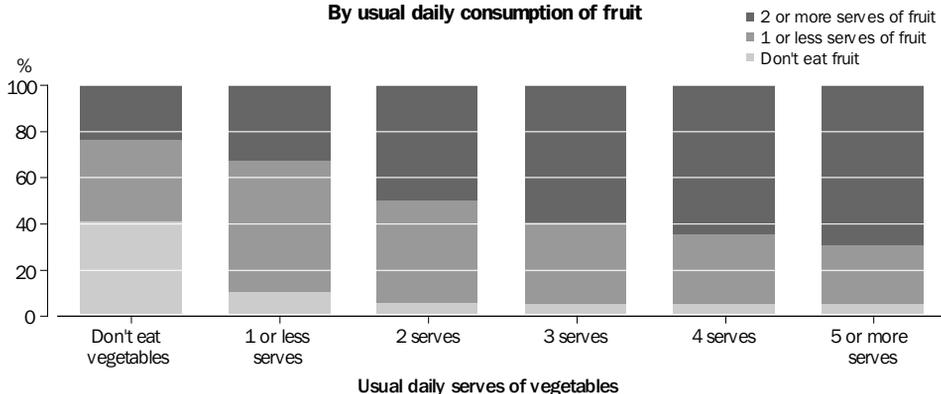
In 2007–08, most Australians ate at least some fruit and vegetables on a typical day. While not many adults aged 19 years and over met their '2 & 5', a number of them got close. Around 9% usually ate five or more serves of vegetables and one or more serves of fruit a day; a further 11% usually ate four serves of vegetables and one or more serves of fruit a day; and 23% usually ate three serves of vegetables and one or more serves of fruit a day.

S11.2 MET RECOMMENDED GUIDELINES FOR FRUIT AND VEGETABLE CONSUMPTION, by Age and Sex



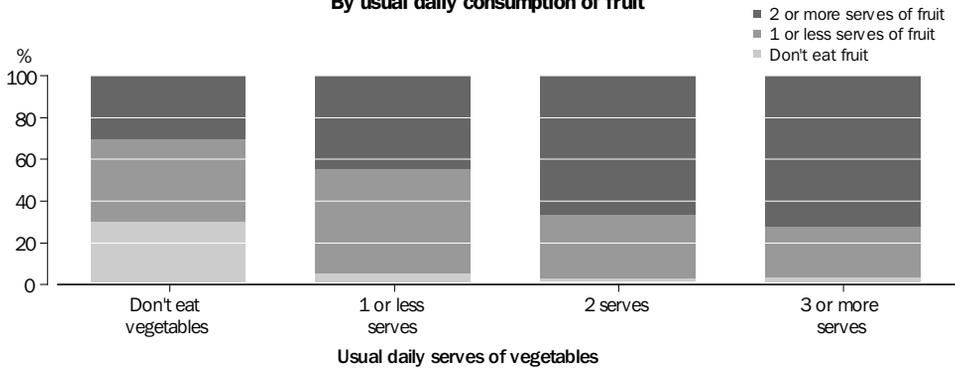
Source: ABS National Health Survey, 2007–08.

S11.3 PERSONS 19 YEARS AND OVER, Usual daily consumption of vegetables By usual daily consumption of fruit



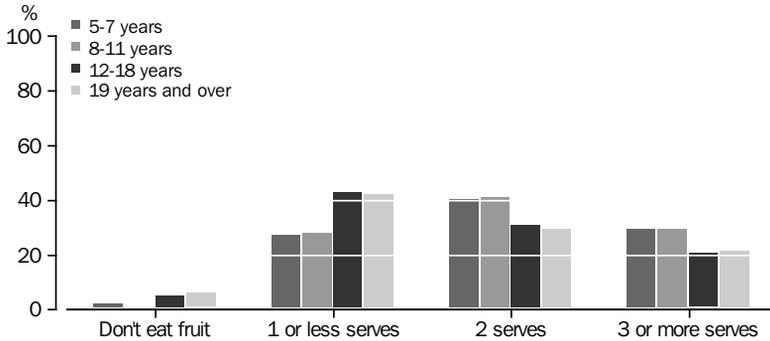
Source: ABS data available on request, National Health Survey, 2007–08.

**S11.4 CHILDREN 5 TO 18 YEARS, Usual daily consumption of vegetables
By usual daily consumption of fruit**



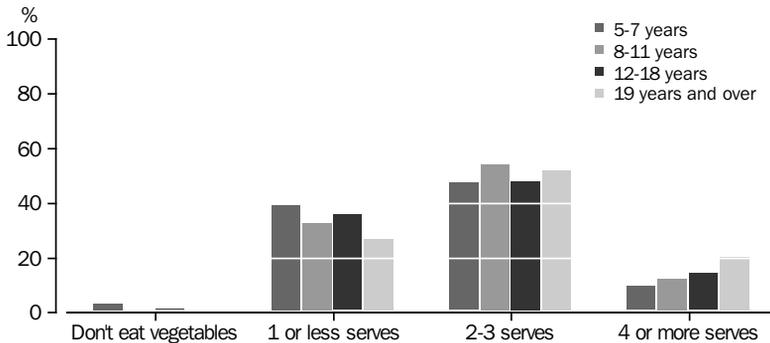
Source: ABS data available on request, National Health Survey, 2007–08.

**S11.5 ALL PERSONS 5 YEARS AND OVER, Usual daily serves of fruit
By age**



Source: ABS data available on request, National Health Survey, 2007–08.

**S11.6 ALL PERSONS 5 YEARS AND OVER, Usual daily serves of vegetables
By age**



Source: ABS data available on request, National Health Survey, 2007–08.

In general, the more vegetables that people ate, the more fruit they consumed. Around 40% of adults aged 19 years and over that reported eating no vegetables on a usual day also usually ate no fruit, and a further 35% ate one serve of fruit or less per day. On the other hand, 51% of people who reported usually eating two serves of vegetables a day, and 70% of people who ate the recommended five or more serves of vegetables a day also ate the recommended two or more serves of fruit a day (graph S11.3).

Consumption patterns for children aged 5–18 years were similar to those of adults, as shown in graph S11.4.

Children aged 5–11 years generally ate more fruit than older children and adults. Seven out of ten children aged 5–7 years (70%) and 8–11 years (71%) ate two or more serves of fruit per day, compared with 52% of people aged 12 years and over (graph S11.5). This story was more mixed for vegetable consumption, with 57% of children aged 5–7 years and 67% of children aged 8–11 years eating two or more serves of vegetables a day, compared with 63% of older children and 72% of adults (graph S11.6).

Men aged 19 years and over were more likely to eat no fruit (8%) than women of the same age (5%), and were also more likely to eat only one or less serves of vegetables a day (32% compared with 22%).

What we spend on fruit and veg

In 2010, Australian households, on average, spent slightly less each week on fruit and vegetables than on meat and quite a lot less than they spent on takeaway and fast food. Households spent an average of \$13.70 per week on vegetables and \$9.60 a week on fresh fruit, compared with \$24.86 on meat, \$4.89 on fish and other seafood, \$15.07 on dairy products, \$30.50 on takeaway and fast food, and \$11.77 on confectionary (including potato crisps).

Has our consumption changed over time?

In 2007–08, 13% of people aged 12 years and over said that their fruit intake had increased over the past year, with 8% reporting a decrease. Around 14% of people aged 12 years and over said that their vegetable consumption had increased over the past year, while 6% said that it had decreased.

After adjusting for changes in the age of the population, fruit consumption stayed relatively similar between 2001 and 2007–08, with 59% of people aged 12 years and over in 2001 usually eating two or more serves of fruit a day compared with 57% in 2007–08. However, vegetable consumption that approached or met guidelines for this age group, went down in this time, with only 20% of people aged 12 years and over in 2007–08 usually eating four or more serves of vegetables, compared with 30% in 2001.

National Nutrition and Physical Activity Survey

ABS is currently conducting the 2011–13 Australian Health Survey (AHS), which includes the National Nutrition and Physical Activity Survey (NNPAS). This will be the first nationally representative nutrition survey since 1995. Data from NNPAS will provide detailed information about the foods, nutrients and dietary supplements consumed by the Australian population. In addition to answering questions about what foods people eat and the adequacy of their diets, it will provide information about other risk factors such as smoking, levels of overweight and obesity, and the types and amounts of physical activity undertaken. As a part of the AHS, participants are also invited to voluntarily provide a blood and urine samples for analysis. These will measure key biomedical indicators such as cholesterol, sodium and folate levels and provide objective measures of the risk factors and the prevalence of conditions such as diabetes, cardiovascular and kidney disease. The first detailed nutrition results are expected to be available from late 2013.

What affects our consumption?

Environmental and economic factors may affect people's consumption of fruit and vegetables, while factors such as physical activity, other food choices, smoking, and alcohol consumption can modify the health impact of fruit and vegetables for better or worse (AIHW, 2000).

While geographical remoteness had some effect on people's consumption in 2007–08, the effect differed between fruit and vegetables. After adjusting for age, people in major cities and inner regional areas were slightly more likely to eat two or more serves of fruit than people in outer regional/remote areas (54% and 53% respectively compared with 49%). People in both inner regional and outer regional/remote areas ate more vegetables than people in major cities, with 47% and 46% respectively eating 3 or more serves a day compared with 39% of people in major cities.

People who lived in areas of most disadvantage (defined in terms of attributes like income, unemployment and educational attainment) reported eating less fruit than those in areas of least disadvantage. After adjusting for age, people in the most disadvantaged areas were almost twice as likely to eat no fruit (7% compared with 4%), and less likely to eat two or more serves of fruit per day (49%) than people who lived in areas of least disadvantage (57%). There was no significant difference in vegetable consumption between the two groups.

Country of birth

People's country of birth had some effect on consumption, but the effect differed for fruit and vegetables. In 2007–08, Australians born overseas were more likely to eat two or more serves of fruit a day (58% compared with 52% for those born in Australia), but less likely to eat three or more serves of vegetables a day (38% compared with 43%). Males born in Australia were the most likely to eat no fruit (8% compared with 4% of males born overseas). For females, 5% of those born in Australia and 3% of those born overseas ate no fruit).

Risk factors

Smoking, alcohol consumption and levels of physical activity are all factors that are linked to health. Data show that risky levels of these key factors are also associated with low levels of fruit and vegetable consumption. In 2007–08, people aged 18 years and over who consumed alcohol at risky or high risk levels (12%) or were current smokers (14%) were twice as likely to eat no fruit as the national average (6%), and much less likely to consume two or more serves of fruit a day (37% and 32% compared with an average of 51%).

Women who smoked were four times as likely as women who had never smoked to eat no fruit (13% compared with 3%), and much less likely to eat the recommended two serves a day (37% compared with 62% of women who had never smoked). Women who consumed alcohol at risky/high risk levels were also more likely than women who had never consumed alcohol to eat no fruit (9% and 3% respectively), and less likely to eat two or more serves of fruit a day (44% compared with 63%).

Fruit consumption patterns for men who smoked, and consumed alcohol at risky/high risk levels were similar to those of women; however, the differences between men with and without smoking and risky/high risk drinking behaviours were less marked than they were for women. The effect of these behaviours on vegetable consumption was less obvious, although people with risky behaviours reported eating fewer serves of vegetables on the whole.

People who exercised at moderate or high levels were more likely to eat two or more serves of fruit a day (60%) than people who did little or no exercise (48%). They were also more likely to eat three or more serves of vegetables a day (48% compared with 42%).

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Co-operatives in private health insurance in Australia

In 2012, Australia celebrates the United Nations International Year of Co-operatives. This article was contributed by The Hospitals Contribution Fund (HCF) and recognises the year by looking at the role of co-operatives in private health insurance in Australia.

Private health insurance is a major contributor to financing health services in Australia, contributing about 11% of national health expenditure (AIHW, 2011). Policyholders are supported by the Australian Government, which provides a 30% rebate on paid contributions (35% for those over 65 years and 40% for those over 70). Private health insurance co-exists with public funding of health services by the Australian, state and territory governments (see *Health care delivery and financing* earlier in this chapter for details).

The private health insurance industry is heavily regulated. Insurers must satisfy legislative requirements for community rating, coverage of policies, minimum benefits, maximum waiting periods, portability of entitlements and quality assurance. Community rating refers to the prohibition of discrimination (e.g. based on age or risk rating) under the *Private Health Insurance Act 2007* (Cwlth); community rating requirements include the need to seek approval from the Government for all premium changes and a 12% limit on discounts offered to policyholders. Quarterly reporting of financial and statistical performance to an industry regulator (the Private Health Insurance Administration Council) is mandatory, and an ombudsman (the Private Health Insurance Ombudsman) provides a complaints resolution referral service.

Private health insurance in Australia has a long history, starting with the friendly society movements of the 1840s. Government subsidies for hospital and medical services

from 1953 led to new players entering the field, some from employer sponsorship. Additional health insurers started up, following further major legislative changes, in 1970 and again in 1984. By the mid 1980s, Australia had its first for-profit health insurer. A number of structural changes in the industry have occurred since then, with more insurers becoming for-profit entities, a number of mergers, and a privatisation and subsequent ASX listing. This rationalisation in the industry has been driven by alignment of interests, financial rescues and other factors.

At the start of 2012, the not-for-profit sector of the private health insurance industry comprised 27 of the 35 registered insurers. They ranged in size from 1.4 million members down to just 4,000 (excluding one that is registered but not operating yet). At the end of June 2011, the not-for-profit sector had 32% of the market share of the private health insurance industry (based on premium revenue shown in PHIAC, 2011). Most private health insurers share commercial affiliations through their common interests. These are driven by the increasing complexity of operations, service delivery and regulation/compliance. HAMBS, a not-for-profit co-operative company formed by a number of private health insurers, provides computer software (the Hospital and Medical Benefits System), in competition with commercial suppliers. The Australian Health Service Alliance (AHSA) and the Australian Regional Health Group (AHRG) provide collective negotiation advice and associated services for member funds.

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EDUCATION AND TRAINING

Education and training makes an essential and diverse contribution to the prosperity and wellbeing of Australian society. By providing individuals with the information and skills they need to obtain rewarding work and contribute to the knowledge economy, the education sector helps all Australians to participate fully in modern society.

Education and training can be distinguished from a more general concept of 'learning' in that it comprises the deliberate, organised sharing of knowledge and/or skills. Education and training plays a vital role driving the competitiveness, efficiency and innovation that characterise modern economic activity.

Educational activity in Australia is measured by participation (current or recent study), attainment (completion of formal and non-formal courses, or results of school-based national testing) and educational resources (finance, infrastructure and human resources).

Data for maintaining these measures are gathered from diverse sources, including reporting requirements from education providers, results of surveys such as the Australian Bureau of Statistics (ABS) annual Survey of Education and Work, and performance and budget statements from Commonwealth, state and territory government agencies.

Information on the Education and training industry can be found in chapters 8 *Labour*, 15 *Industry structure and performance*, 22 *Service industries*, 25 *Information and communication technology* and 26 *Research and innovation*.

Education and training overview

Formal education in Australia may be categorised into four broad areas: early childhood education, schooling, vocational education and training (VET) and higher education.

Early childhood education encompasses programs in preschools and other child care settings. It is aimed at improving children's readiness for school. Such programs are seen as particularly important for promoting social inclusion by minimising the educational gap that may be experienced by disadvantaged children upon commencement of school. They thereby ensure that all children are able to participate fully in subsequent learning opportunities.

Schooling prepares children for adult life by developing essential life skills such as literacy and numeracy, as well as by providing a foundational knowledge of the world around them. As schooling progresses from primary through to secondary and senior secondary education, subject matter becomes increasingly specialised. Recognition of the level of schooling attained is usually through the highest school year completed (e.g. Year 10), or by a Year 12 or equivalent Senior Secondary Certificate upon completion of the full secondary school program and any required examinations.

The primary goal of VET is to provide students with the skills and practices required to pursue a particular occupation or workplace task safely and effectively. VET can begin in secondary schooling and continues to develop people's skills throughout their working lives. VET is often delivered in close association with workplaces, such as through the Australian Apprenticeships Scheme, where training through a TAFE college or other accredited provider is delivered alongside relevant work experience.

Higher education is characterised by intensive study over a number of years to achieve a recognised high-level qualification. Most higher education takes place within accredited universities or similar tertiary-level institutions.

Formal recognition of attainment of post-school educational qualifications is systemised through the Australian Qualifications Framework (AQF). The AQF describes the levels of understanding and skill expected to be acquired through

completion of a course at a given level, and the type of courses pursued. Most formal VET study results in the award of a Certificate level qualification (progressing from Certificate I to Certificate IV), a Diploma or an Advanced Diploma. Higher education classifications of level include Bachelor degree level (typically a three- or four-year course) or postgraduate study levels such as a Masters degree or Doctoral degree.

Courses delivered through workplaces, adult and community education (ACE) centres, and other private providers may involve structured delivery of skills and knowledge, but not be aimed at attaining a formal qualification. Such programs are referred to as 'non-formal' education and training. Non-formal programs make a major contribution to the continuous development and refreshing of skills and knowledge in areas as diverse as general workplace best practice, recreational and life skills, or occupational training. Many non-formal programs include certification of competencies; however, these are highly diverse and not recognised within the formal AQF levels.

Government responsibilities in education

Under the Commonwealth Constitution, the state and territory governments are responsible for providing schooling to all school-age children. They have the major financial responsibility for government schools, contribute supplementary funds to non-government schools and regulate school policies and programs. They determine curricula, course accreditation, student assessment and awards for both government and non-government schools. State and territory governments are also responsible for the administration and major funding of vocational education and training (VET) and for legislation relating to the establishment and accreditation of higher education courses.

The Commonwealth government has special responsibilities in education and training for Aboriginal and Torres Strait Islander peoples, migrants, international partnerships in education, and providing financial assistance for students. It is principally responsible for funding non-government schools and higher education institutions, and provides supplementary funding for government schools and VET.

Education reform agenda

In 2008, the Council of Australian Governments (COAG) committed to a comprehensive education reform agenda for Australia. The agenda has impacts on education and training policy at all levels as part of broader reforms under the Inter-Governmental Agreement on Federal Financial Relations.

Under the National Education Agreement, Australian governments have agreed to work together toward the objective that all Australian school students will acquire the knowledge and skills to participate effectively in society and employment in a globalised economy.

The five outcomes of the National Education Agreement are:

- All children are engaged in and benefitting from school.
- Young people are meeting basic literacy and numeracy standards, and overall levels of literacy and numeracy achievements are improving.
- Australian students excel by international standards.
- Young people make a successful transition from school to work and further study.
- Schooling promotes social inclusion and reduces the educational disadvantage of children, especially Aboriginal and Torres Strait Islander children.

There is a suite of national partnerships associated with the funding and implementation of specific programs under the National Education Agreement:

- National Partnership on Improving Teacher Quality
- National Partnership on Literacy and Numeracy
- National Partnership on Low Socio-Economic Status School Communities
- National Partnership on Early Childhood Education
- National Partnership on National Quality Agenda for Early Childhood Education and Care
- National Partnership on Indigenous Early Childhood Development and

- National Partnership on Youth Attainment and Transitions.

The National Agreement for Skills and Workforce Development sets goals for developing the skills of the Australian people and ensuring that the present and future workforce needs of Australian employers are met.

The four outcomes associated with the National Agreement for Skills and Workforce Development are:

- The working age population has gaps in foundation skills levels reduced to enable effective educational, labour market and social participation.
- The working age population has the depth and breadth of skills and capabilities required for the 21st century labour market.
- The supply of skills provided by the national training system responds to meet changing labour market demand.
- Skills are used effectively to increase labour market efficiency, productivity and innovation, and to ensure increased utilisation of human capital.

There are two national partnerships associated with the National Agreement for Skills and Workforce Development:

- National Partnership on Youth Attainment and Transitions
- National Partnership on the Productivity Places Program.

These national partnerships and related reports can be found on the COAG Reform Council website.

Early childhood education

Early childhood education in Australia encompasses early learning programs in preschools and other organisations, and the skills development of children from birth onwards. A number of studies at the domestic and international level have noted that young children who do not have appropriate learning opportunities may suffer from adverse outcomes later in life. Research also indicates that a child's brain undergoes the most rapid development in the first five years of life. This has prompted

policy-makers and education providers to introduce formal programs to improve access and participation in early childhood education for children in the year or two before full-time school. Such programs, aimed at raising children's readiness for school, are generally available in preschools and in a range of child care settings.

Preschool

A preschool program is a structured, play-based learning program, primarily aimed at children in the year or two before commencing full-time school. Depending on the service models in each state and territory, preschool programs may be delivered by government or non-government schools, government or community preschools, or by child care providers. Educational programs or curricula may be provided in long day care centres or other settings.

Preschool programs in long day care centres are structured and planned as part of an early childhood education program with specific educational aims and objectives. Long day care preschool programs are aimed at children who are at least three years of age, although some younger children may participate in such programs.

Childhood Education and Care Survey

The 2008 ABS Childhood Education and Care Survey (CEaCS) showed that of the 1,028,000 children aged four to eight years who were attending school in June 2008, 82% had attended a preschool program in the year prior to starting school. Of those children who had attended a preschool program, parents reported that the vast majority (94%) made a good adjustment to school compared with 88% of children who did not attend a preschool program in the year prior to starting school. For more information, see *Childhood Education and Care, Australia, June 2008* (4402.0).

According to the 2008 ABS CEaCS, 257,000 children attended preschool in the reference week, of whom three out of five (61%) were aged four years. Among all four-year olds, 60% were attending preschool in the surveyed week compared with only 11% of five-year olds (the majority of five-year olds having already commenced school).

Graph 12.1 shows that, between 1993 and 2008, the proportion of four-year olds attending preschool fluctuated between 46% and 62%, whereas the proportion attending long day care centres increased steadily (from 12% in 1993 to 30% in 2008).

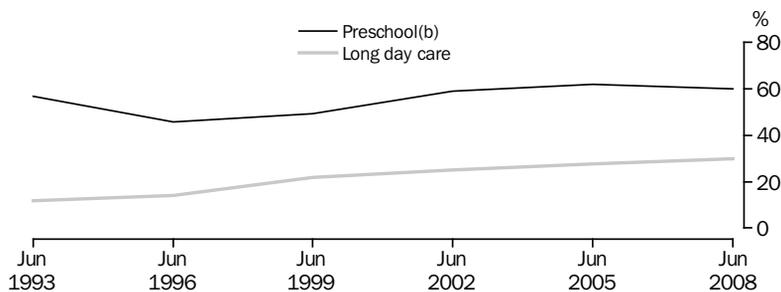
National Early Childhood Education and Care Collection

In 2008, the importance of education in the early years of a child's development was formally acknowledged through the Council of Australian Governments' endorsement of 'universal access' to early childhood education in the National Partnership Agreement on Early Childhood Education. Under this agreement, Commonwealth, state and territory governments committed to ensuring that all children will have access to a quality early childhood education program by 2013, delivered by a four-year university-trained early childhood teacher, for 15 hours a week, 40 weeks a year, in the year before full-time schooling.

As a result of this agreement, the ABS established the National Early Childhood Education and Care Collection, the aim of which is to provide comparable jurisdictional statistics on early childhood education and care.

The ABS publication *Experimental Estimates of Preschool Education, Australia, 2010* (4240.0), presents experimental estimates of counts of children in the year before full-time school who were enrolled in, and attending, preschool programs together with total episodes of preschool enrolments and attendances. The data are collected from existing administrative datasets. A key collection challenge involves aligning the data standards required for this collection with the pre-existing jurisdictional data collections and recording methods. The ABS is working with the Australian Institute of Health and Welfare and all states and territories in collection development activities focused on improving coverage and alignment of data collection standards.

12.1 PARTICIPATION OF FOUR-YEAR OLDS(a)—June



(a) Refers to children who attended in the reference week. Some children will be included in both categories.

(b) Excludes preschool programs in long day care centres.

Source: *Childhood Education and Care, Australia (4402.0)*.

Primary and secondary education

Schooling structures

The basic structure of schooling in Australia is a period of primary school followed by a period of secondary school. Primary school generally consists of 'years' ranging from Pre-Year 1 to Year 6/7, while secondary school generally consists of years ranging from 7/8 to 12, depending on the state or territory (figure 12.2).

The National Youth Participation Requirement (NYPR), agreed by the Council of Australian Governments in 2009, harmonised the compulsory school age across states and territories. From January 2010, the compulsory commencement age for schooling is six years for all states and territories, except Tasmania, where it is five years. However, most children commence the preliminary year of formal schooling, Pre-Year 1, between four and a half and five and a half years of age. Under the 2009 decision, there is now a mandatory requirement for all young people to participate in schooling until they complete Year 10 and to participate until the age of 17 years in full-time (at least 25 hours per week) education, training, employment, or a combination of these activities.

School organisation and operation

Schools in Australia may be classified as either government or non-government schools. Government schools are the direct responsibility

of the Director-General of Education (or equivalent) in each state or territory and receive funding from the relevant state or territory government. Non-government schools can be further classified, based on self-identification of the school's affiliation. Non-government schools are grouped for reporting as Catholic (including Catholic affiliated independent schools) or independent (other non-government schools, including Anglican). Non-government schools operate under conditions determined by state and territory government regulatory authorities and receive funding from the Australian Government and relevant state or territory government.

Within national frameworks, curriculum and course offerings have historically been determined by state and territory education departments or at a school level. However, these approaches came under review in 2009, when the Australian Curriculum, Assessment and Reporting Authority was established to develop a nationally agreed education program. Since then, there has been increasing harmonisation in the field of education including:

- nationally consistent school participation policies through the National Youth Participation Requirement
- establishment of an Australian Curriculum that outlines:
 - key learning areas (such as English, mathematics, science and history) and other subjects to be developed (such as geography, languages, the arts, economics, business, civics and citizenship, health

12.2 SCHOOLING STRUCTURES, States and territories(a)(b)—2011

	Pre-Year 1(c)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
NSW													
Vic.													
Qld													
SA													
WA													
Tas.													
NT													
ACT													



Primary School



Secondary School

- (a) Some states and territories are structured so that Years 11 and 12 are delivered in separate establishments to other secondary years.
- (b) The National Youth Participation Requirement came into effect from 1 January 2010 for each state and territory and required that:
- all young people participate in schooling (meaning in school or an approved equivalent) until they complete Year 10 and
 - all young people who have completed Year 10 participate full-time (defined as at least 25 hours per week) in education, training or employment, or a combination of these activities, until aged 17 years.
- (c) Pre-Year 1 is known as Kindergarten in NSW and ACT, Preparatory in Tas. Vic. and Qld, Pre-primary in WA, Reception in SA and Transition in NT.

Source: *Schools, Australia (4221.0)*.

and physical education, information and communication technology, and design and technology)

- national general capabilities (literacy, numeracy, information and communication technology competence, critical and creative thinking, ethical behaviour, personal and social competence, and intercultural understanding)
- national cross-curriculum priorities (Aboriginal and Torres Strait Islander histories and cultures, Asia and Australia's engagement with Asia, and sustainability)
- a national assessment reporting program aligned to the national curriculum, and
- improved consistency of terminology.

Primary schooling

Primary schooling is generally provided in a structured learning environment delivered by a single qualified teacher. Primary school usually runs as a five-day school week, spread across four terms consisting of about ten weeks each. Students in primary schools should have the opportunity to learn in the key content areas identified in the Australian Curriculum but may also undertake learning in other areas such as

religious instruction, foreign and community languages, and specific music courses.

Secondary schooling

Secondary schooling generally differs from primary schooling in the mode of delivery and variety of subject matter students may study. Secondary teachers commonly specialise in a specific subject area and so secondary students move regularly between classes and have contact with different teachers. While some core subjects, or content areas, are compulsory – particularly for satisfying certification requirements – there is increased choice for secondary students in the types of subjects that they study. Secondary schooling is usually provided during a five-day school week, spread across three or four terms depending on the state or territory.

There is some variation in the structure of secondary schooling throughout Australia, with some states and territories providing Years 11 and 12 in separate institutions to other secondary years. These Year 11 and 12 schools may be known as colleges or senior secondary schools.

Remote and rural education

There is a variety of options employed to assist with delivering education to students in remote locations.

Student boarding facilities overcome the issue of remoteness by locating the student at or near their school. While boarding schools are traditionally associated with the non-government sector, a small number of government schools address the issue similarly, with a location near residential hostels.

Some states and territories have established remote community centres with specifically trained staff to assist in the service delivery of education. Examples include the Homeland Learning Centres and Catholic Aboriginal and Torres Strait Islander schools in the Northern Territory that are established to provide schooling for children in remote Aboriginal and Torres Strait Islander communities. For more information on Aboriginal and Torres Strait Islander students, refer to the *Aboriginal and Torres Strait Islander Peoples* chapter.

Virtual learning is likely to occur in many schools to some degree, particularly with the increased availability of enabling technology such as the Internet, which can facilitate discussion boards, web cam and voice over Internet protocols. Virtual learning can be seen as a further development of ‘schools of the air’, the first of which was established in Australia in 1951 using a two-way radio.

Home-schooling is also an option for students, including remote students, and may be complemented with virtual classroom learning. Home-schooling is available to students who meet the criteria set down by the relevant state or territory department of education. They must be enrolled as a student at a day school and be available when required for assessment against the regular school curriculum.

Vocational education and training

Vocational education and training (VET) provides skills and knowledge in preparation for entering the workforce through a national training system. VET may complement secondary studies or be undertaken in place of secondary schooling after Year 10. VET may be school-based, undertaken through a TAFE or through a registered training organisation. VET may also contribute to senior secondary certification, a trade qualification or be undertaken for personal reasons. Refer to the *Vocational education and training (VET)* section below for more information.

Special education

Students with impairments may be entitled to support that assists in providing them with an equal opportunity to participate in education. There are currently a variety of models across the states and territories for funding students with impairments to participate in education.

There are two main approaches to supporting students with impairments. They may receive additional resources within a mainstream school or attend a school with conditional enrolment that specialises in supporting students with certain impairments. The Commonwealth Government funds states and territories, non-government authorities and community groups to assist in service provision, maintenance and upgrading of special education facilities.

Schools

There were 9,468 schools operating in Australia in 2010, of which 71% were government schools. Of the non-government schools, nearly two-thirds were Catholic (table 12.3).

The number of combined schools (schools that have both primary and secondary years) continued to grow in 2010, while the number of schools teaching only primary or only secondary years continued to decline slowly. In 2010, primary schools outnumbered secondary schools almost five to one.

About 4% of the schools in Australia were categorised as special schools in 2010.

Teaching staff

Teaching staff can be employed on a full-time or part-time basis and some teaching staff split their time between teaching and non-teaching roles. As a result, full-time equivalent (FTE) measures are used to compare teaching staff in schools (table 12.4).

In 2010, 65% of FTE teaching staff were in government schools compared with 35% in non-government schools. The proportions of FTE students in government and non-government schools were very similar to the proportions of teaching staff (66% and 34% respectively).

In 2010, 69% of all FTE teaching staff were women, who comprised 81% of FTE teaching staff in primary schools and 40% in secondary schools.

12.3 SCHOOLS AND STUDENTS—August 2010

	NON-GOVERNMENT SCHOOLS				All schools no.
	Government schools no.	Catholic no.	Independent no.	Total no.	
Schools					
Primary	4 879	1 230	248	1 478	6 357
Secondary	1 034	303	72	375	1 409
Combined	498	148	640	788	1 286
Total(a)	6 743	1 708	1 017	2 725	9 468
Students(b)					
Primary	1 392 938	390 831	231 248	622 079	2 015 017
Secondary	911 321	323 080	261 457	584 537	1 495 858
Total	2 304 259	713 911	492 705	1 206 616	3 510 875

(a) Special schools are included in the total count only.

(b) Includes students in combined schools.

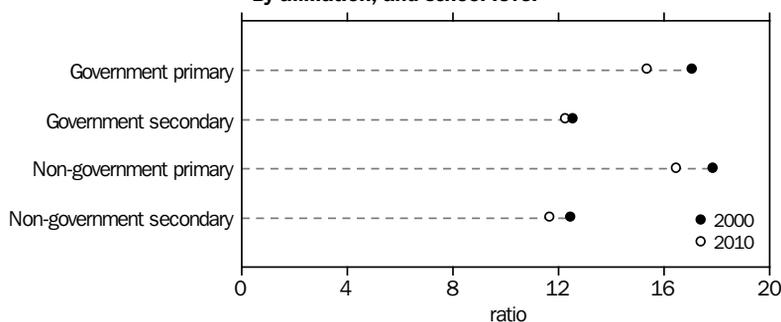
Source: ABS data available on request, 2010 National Schools Statistics Collection.

12.4 FULL-TIME EQUIVALENT (FTE) TEACHERS AND STUDENTS, By sex and school affiliation—August 2010

	NON-GOVERNMENT SCHOOLS				All schools (FTE)
	Government schools (FTE)	Catholic (FTE)	Independent (FTE)	Total (FTE)	
Teachers					
Males	47 596.4	14 548.5	14 682.6	29 231.1	76 827.5
Females	116 101.0	32 842.5	25 650.8	58 493.3	174 594.3
Persons	163 697.4	47 391.0	40 333.4	87 724.4	251 421.8
Students					
Males	1 180 258.7	357 539.0	245 909.5	603 448.5	1 783 707.2
Females	1 111 539.3	356 084.5	246 236.3	602 320.8	1 713 860.1
Persons	2 291 798.0	713 623.5	492 145.8	1 205 769.3	3 497 567.3

Source: ABS data available on request, 2010 National Schools Statistics Collection.

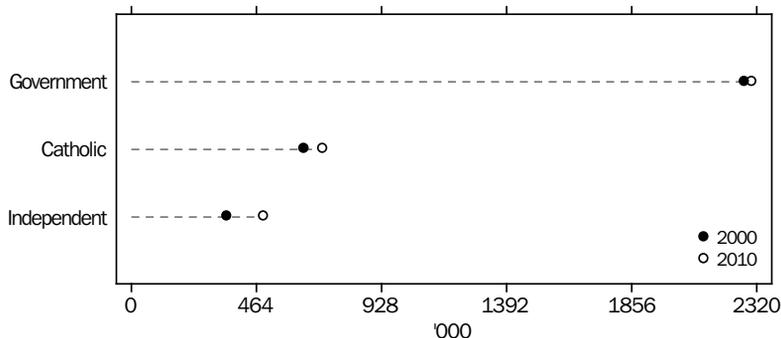
12.5 FULL-TIME EQUIVALENT STUDENT TO TEACHING STAFF RATIOS(a), By affiliation, and school level



(a) This graph should not be used as a measure of class size.

Source: ABS data available on request, 2010 National Schools Statistics Collection.

12.6 NUMBER OF STUDENTS(a), By category of school



(a) Includes full-time and part-time students.

Source: ABS data available on request, 2010 National Schools Statistics Collection.

Student to teacher ratios

Student to teaching staff ratios are calculated as the FTE value of school students divided by the FTE value of teaching staff. Over the 10-year period, 2000 to 2010, the national student/teacher ratio for both school levels fell from 15.0 to 13.9. This decline was more marked in primary schools where the student/teacher ratio fell from 17.4 to 15.8. In 2000, student/teacher ratios were similar for government and non-government schools nationally at 15.0 and 14.8 respectively. By 2010, these ratios had decreased to 14.0 for government schools and 13.7 for non-government schools.

Graph 12.5 compares student/teacher ratios by affiliation and school level for 2000 and 2010.

School students

In 2010, there were 3.5 million students in Australian schools, two-thirds of whom were in government schools and one-third in non-government schools (table 12.7). Since 2000, the number of school students has increased by 7%. This growth reflects a 1% increase in government student numbers, an 11% increase in Catholic student numbers and a 37% increase in Independent student numbers over that time (graph 12.6).

In 2010, two-thirds of all school students attended government schools, which accounted for 69% of all primary students and 61% of secondary students. Catholic and independent

schools accounted for 19% and 12% of primary students respectively, and 21% and 18% of secondary students.

Students identifying as being of Aboriginal and Torres Strait Islander origin

There were 163,000 students who identified as being of Aboriginal and Torres Strait Islander origin in Australian schools in 2010 – about 5% of the national student population. By jurisdiction, enrolments of Aboriginal and Torres Strait Islander students varied from about 1% in Victoria to 41% in the Northern Territory (graph 12.8).

Between 2000 and 2010, the number of Aboriginal and/or Torres Strait Islander students increased by almost 50%. This probably occurred as a result of several factors, including actual increases in student numbers, improved data quality and changing attitudes towards identification.

In 2010, 85% of Australian students who identified as being of Aboriginal and Torres Strait Islander origin were enrolled in government schools, 9% were in Catholic schools and about 5% in independent schools. This distribution was fairly constant across all years.

Aboriginal and Torres Strait Islander students were under-represented in non-government schools in all states and territories. Overall, about one-third of all students were enrolled in non-government schools compared with one in seven Aboriginal and Torres Strait Islander students.

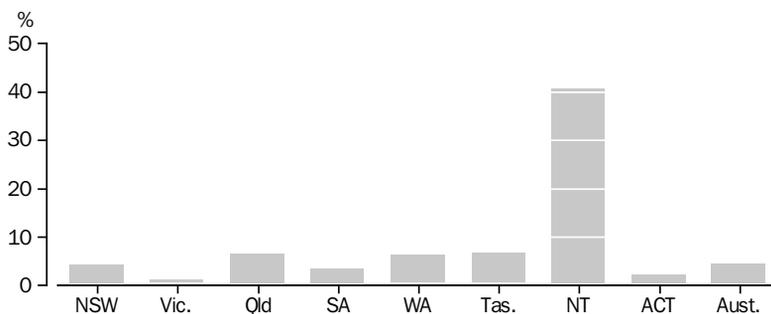
12.7 PROPORTION OF STUDENTS, By year/school level and school affiliation—August 2010

Year/school Level	NON-GOVERNMENT SCHOOLS			Total %
	Government schools %	Catholic %	Independent %	
Primary				
Pre-Year 1	70.0	19.4	10.6	100.0
Year 1	69.4	19.9	10.7	100.0
Year 2	69.4	19.9	10.7	100.0
Year 3	68.5	20.1	11.4	100.0
Year 4	69.0	19.7	11.2	100.0
Year 5	68.4	19.6	12.0	100.0
Year 6	68.3	19.3	12.4	100.0
Year 7 primary(a)	66.6	17.6	15.8	100.0
Ungraded primary	92.9	1.5	5.6	100.0
Total Primary	69.1	19.4	11.5	100.0
Secondary				
Year 7 secondary(a)	59.1	24.4	16.5	100.0
Year 8	59.4	22.8	17.8	100.0
Year 9	60.6	22.0	17.4	100.0
Year 10	61.3	21.2	17.5	100.0
Year 11	61.7	20.5	17.8	100.0
Year 12	59.2	21.5	19.2	100.0
Ungraded secondary	96.8	1.3	1.8	100.0
Total Secondary	60.9	21.6	17.5	100.0
All students	66.0	20.3	14.0	100.0

(a) Year 7 is classified as primary school in Qld, SA and WA, and secondary school in other states and territories.

Source: ABS data available on request, 2010 National Schools Statistics Collection.

12.8 STUDENTS IDENTIFYING AS ABORIGINAL AND TORRES STRAIT ISLANDER(a), By state and territory—August 2010



(a) Proportions are calculated separately for each state and territory and the Australian total.

Source: ABS data available on request, 2010 National Schools Statistics Collection.

Student engagement

There are a number of measures of student engagement in schooling. These measures mostly focus on providing indicators of the level of participation in school by young people and whether students stay in school and progress through the years at expected rates.

The apparent retention rate (ARR) is a commonly used measure of student engagement and

provides an indicator of the success of education systems in keeping students in school. The ARR measures the number of students in a designated year of education expressed as a percentage of their cohort group from the year that those students were likely to have commenced secondary school. Care should be taken in interpreting apparent retention rates as the calculation does not take into account a range of factors such as overseas migration, repeating

students, mature-age students, changes in study patterns from full-time to part-time or part-time to full-time and other net changes to the school population.

In 2010, the national apparent retention rate for all full-time students in Year 12 was 78%. There was an observable gap between males and females, with the male retention rate at 73% and female rate at 83%. There has continued to be an observable difference in retention between the sexes since 2000, with the gap remaining reasonably consistent over that time (graph 12.9).

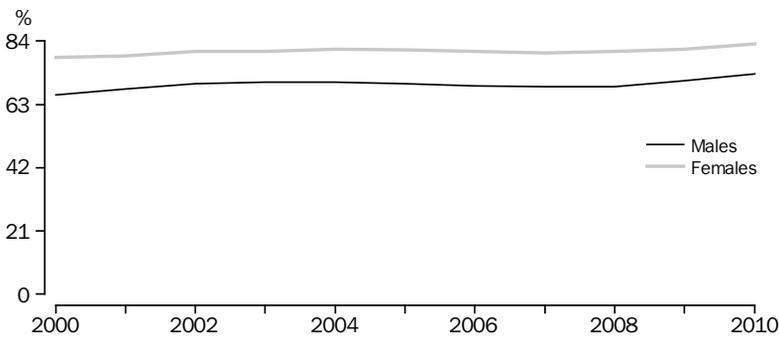
Between 2000 and 2010, the gap in retention rates to Year 12 between non-Indigenous students and those identifying as of Aboriginal and Torres Strait Islander origin remained high, ranging

between 28 and 39 percentage points, with the difference at 2010 being 32 percentage points (graph 12.10).

Vocational education and training (VET)

Vocational education and training (VET) is a fundamental driver of a skilled Australian workforce. VET includes courses which lead to formal qualifications in a wide range of trade and professional fields, as well as course components aimed at developing or refining specific work-related skills or workplace practices. Most VET courses which lead to a formal qualification are delivered at the Certificate I-IV or Diploma/Advanced diploma levels.

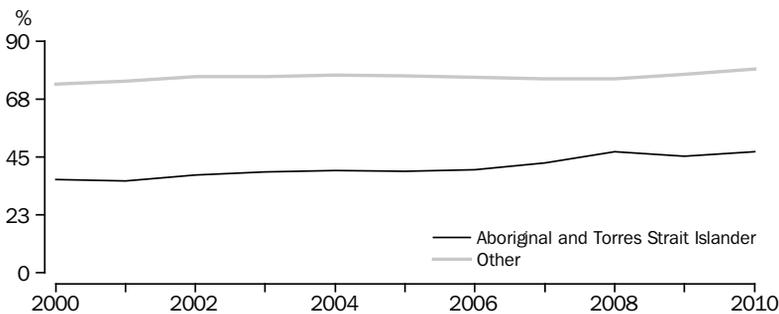
12.9 APPARENT RETENTION RATES(a), By sex—Year 7/8 to 12



(a) Full-time students only.

Source: ABS data available on request, 2010 National Schools Statistics Collection.

12.10 APPARENT RETENTION RATES(a)(b), By Year 7/8 to 12



(a) Full-time students only.

(b) Other series includes non-Indigenous students and those whose status was 'not stated'.

Source: ABS data available on request, 2010 National Schools Statistics Collection.

There were 2,794 registered training providers in Australia in 2010. While many of these are private providers, government-funded providers such as technical and further education (TAFE) colleges tend to be larger, multi-purpose institutions, meaning that most VET students (74%) are engaged with government providers.

Publicly funded VET is provided by TAFE colleges as well as by higher education institutions, secondary schools and colleges, agricultural and technical colleges, and adult and community organisations. Private providers of VET include private training organisations, business colleges, industry associations, adult and community organisations and employers.

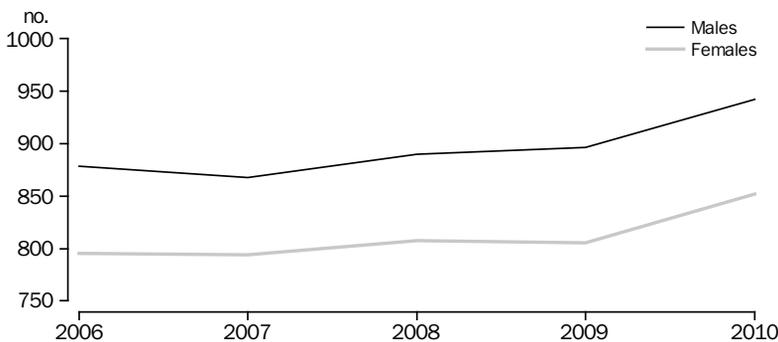
In 2010, there were approximately 1.8 million

students enrolled in publicly funded VET courses (table 12.12), of whom just over half (54%) were under 30 years of age. Between 2006 and 2010, VET student numbers grew about 7% for both males and females (graph 12.11).

Among younger age groups, males were more likely than females to be studying in publicly funded VET courses, comprising 56% of enrolments for those under 30 years of age. Females comprised a greater share of older VET students. Overall, just over half (52%) of publicly funded VET students were male.

VET courses are classified according to specific fields of education. Table 12.13 shows the number of course enrolments in 2010 in 11 broad fields of education and for mixed field programs.

12.11 VET STUDENTS



Source: National Centre for Vocational Education Research, Students and Courses Collection, Student Characteristics, 2010.

12.12 VET STUDENTS, Publicly funded vocational and preparatory courses(a), By age—2010

	Males no.	Females no.	Persons(b) no.
15–19 years	258 172	203 334	462 017
20–24 years	178 446	127 986	306 981
25–29 years	104 476	87 284	192 202
30–39 years	159 572	149 811	310 113
40–49 years	122 728	148 771	272 298
50–59 years	78 286	92 725	171 485
60 years and over	30 634	32 381	63 216
Total(c)	935 763	846 748	1 787 196

(a) Includes all VET delivery by TAFE and other government providers, multi-sector higher education institutions, registered community providers and publicly funded delivery by private providers. Fee-for-service VET delivery by private providers has been excluded. School students undertaking VET in schools have also been excluded. A student is an individual who was enrolled in a subject or completed a qualification at any time in 2010.

(b) Includes 'sex not stated'.

(c) Includes 'age not known'.

Source: National Centre for Vocational Education Research, data available on request, National VET Provider Collection.

12.13 COURSE ENROLMENTS(a), By course field of education and sex, Australia—2010

<i>Course field of education</i>	<i>Male</i> no.	<i>Female</i> no.	<i>Not known</i> no.	<i>Total</i> no.
Natural and physical sciences	3 800	5 009	5	8 814
Information technology	32 300	17 725	17	50 042
Engineering and related technologies	334 436	32 231	537	367 204
Architecture and building	165 338	11 806	344	177 488
Agriculture, environmental and related studies	71 217	23 630	126	94 973
Health	40 887	77 245	236	118 368
Education	32 764	42 562	181	75 507
Management and commerce	150 616	280 349	1 044	432 009
Society and culture	64 119	180 221	662	245 002
Creative arts	26 931	36 397	61	63 389
Food, hospitality and personal services	83 832	135 493	375	219 700
Mixed field programmes	173 049	188 153	551	361 753
Total	1 179 289	1 030 821	4 139	2 214 249

(a) Includes all VET delivery by TAFE and other government providers, multi-sector higher education institutions, community providers, and publicly funded delivery by private providers. Fee-for-service VET delivery by private providers has been excluded. Secondary school students undertaking VET in schools have also been excluded.

Source: National Centre for Vocational Education Research, National VET Provider Collection.

Since students may be enrolled in more than one VET course, the number of course enrolments is greater than the total number of students. In 2010, there were 2.2 million course enrolments taken up by 1.8 million students.

The most common broad fields of study for VET courses were Management and commerce (20%), Engineering and related technologies (17%), Society and culture (11%), and Food, hospitality and personal services (10%). Each of these fields is strongly linked to gender, with courses in Management and commerce, Society and culture, and Food, hospitality and personal services all being predominantly studied by females (65%, 74% and 62%, respectively), while most students studying Engineering and related technologies were male (91%). Education and Creative arts had more even distributions of male and female course participants.

Mixed field programs, which either encompass multiple fields of study or are more generalist in nature, such as bridging and enabling courses, comprised 16% of VET course enrolments, with participation divided almost evenly between males and females.

Apprenticeships and traineeships

Of 441,000 apprentices and trainees, 204,000 or nearly half (46%) were in the Technicians and trades occupations (table 12.14). Two specific trades occupations: Automotive and engineering (50,000 apprenticeships) and

Construction (55,000 apprenticeships) were the largest occupations for apprenticeships/traineeships, with the exception of the broad Clerical and administrative occupation (68,000 apprenticeships).

Males comprised two-thirds (66%) of all apprenticeship/traineeship participants, and more than 98% of participants in three trades occupations – Automotive and engineering, Construction and Electro-technology and telecommunications. Males also comprised more than 70% of participants in the other major trades occupations of Engineering, ICT and science, Food trades, and Skilled animal and horticultural workers, as well as two non-trade occupation groups, Machinery operators and drivers and Labourers.

Females were more highly represented than males in four non-trade occupation groups – Managers, Community and personal service, Clerical and administrative and Sales. Community and personal service workers recorded the highest share of female participants at 72%.

Staff

In 2010, there were 36,000 VET teachers employed in TAFE and other VET institutions in Australia (table 12.15). Slightly more than half of these were female (54%). Three-quarters of male VET teachers were full-time, compared to approximately half of female VET teachers.

12.14 APPRENTICES AND TRAINEES IN TRAINING, By occupation(a)—31 March 2010

	Male no.	Female no.	Total(b) no.
Technicians and trades workers			
Engineering, ICT and science technicians	4 981	1 543	6 524
Automotive and engineering trades workers	49 392	970	50 364
Construction trades workers	54 314	534	54 849
Electrotechnology and telecommunications trades workers	33 100	643	33 744
Food trades workers	14 109	5 003	19 113
Skilled animal and horticultural workers	6 504	1 933	8 437
Other technicians and trades workers	16 799	14 458	31 257
<i>Total Technicians and trades workers</i>	<i>179 198</i>	<i>25 084</i>	<i>204 287</i>
Managers	5 729	10 898	16 627
Professionals	1 549	1 156	2 705
Community and personal service workers	13 416	34 325	47 741
Clerical and administrative workers	25 843	41 945	67 788
Sales workers	17 168	27 680	44 850
Machinery operators and drivers	27 879	3 266	31 146
Labourers	17 959	7 548	25 507
Total	288 742	151 902	440 650

(a) Classified according to the Australian and New Zealand Standard Classification of Occupations, First Edition, 2006 (1220.0).

(b) Includes sex not stated.

Source: National Centre for Vocational Education Research, National Apprentice and Trainee collection.

12.15 VET TEACHERS(a)—2010

	Full-time '000(b)	Part-time '000	Total '000
Males	12.4	4.1	16.6
Females	10.0	9.6	19.6
Persons	22.4	13.8	36.2

(a) Annual average of quarterly data.

(b) Refers to persons working 35 hours or more in the survey week.

Source: Labour Force, Australia, Detailed, Quarterly, Aug 2011 (6291.0.55.003).

Work-related training

Many workers seek, or are provided with, training courses specifically to meet the skill and practice needs of their workplace. Table 12.16 shows the proportion of workers who had, in the previous year, participated in a work-related non-formal course, by sex, work hours and occupation (as at 2009). Non-formal learning refers to structured taught learning, but unlike formal learning, does not lead to a recognised qualification, per the Australian Qualification Framework (AQF).

Workers in the occupational categories of Community and personal service workers (36%) and Professionals (33%) were much more likely to have participated in work-related non-formal courses than were those in other professions.

The lowest rates of participation were reported in the Sales workers and Labourers occupations, both at 15%.

Overall, there was little difference in the participation rates of males and females, at 23% and 24% respectively. However, there was some variation by occupation group. Males were more likely than females to have participated in a work-related course in the Community and personal services occupation (41% compared with 33% for females). In contrast, female Professionals (36%) were more likely to have participated in a course than male Professionals (30%).

People working full-time were much more likely to report that they had participated in a work-related course, at 26% of workers, than were part-time workers (18%). Full-time Sales workers were twice as likely as part-time Sales workers to have participated in a work-related course (22% compared with 11%).

Higher education

Australia's higher education system plays a vital role in the nation's intellectual, economic, cultural and social development. In addition to their contribution to advanced research in a number of fields, higher education institutions also impart high level skills and knowledge.

**12.16 PARTICIPATION IN NON-FORMAL WORK-RELATED TRAINING COURSES(a)(b),
By occupation and sex—2009**

	Full-time %	Part-time %	Males %	Females %	Total %
Managers	26.5	14.0	23.4	27.6	24.8
Professionals	35.5	26.1	29.9	36.4	33.2
Technicians and trades workers	19.8	12.2	19.2	15.9	18.7
Community and personal service workers	40.5	31.3	40.5	33.5	35.6
Clerical and administrative workers	22.2	14.9	21.2	18.9	19.5
Sales workers	21.9	10.6	17.4	14.0	15.3
Machinery operators and drivers	21.8	14.1	21.5	12.2	20.7
Labourers	19.1	10.3	16.3	12.6	14.9
Total	26.4	17.6	22.9	24.5	23.6

(a) Proportion of persons in occupation participating in a work-related course in the previous 12 months.

(b) Classified according to the Australian and New Zealand Standard Classification of Occupations, First Edition, 2006 (1220.0).

Source: ABS data available on request, *Survey of Education and Training, 2009*.

Tertiary qualifications are an explicit requirement for the lawful practice of a number of professions, such as law and medicine, and are often essential prerequisites for many others.

Providers of higher education that receive funding from the Australian Government can be publicly or privately operated, and can be either self-accrediting or non self-accrediting institutions. Self-accrediting institutions primarily include universities, and have the authority to award formal qualifications. Non self-accrediting higher education providers are accredited by state and territory authorities. They are mainly private providers of varying sizes, and include business colleges and other providers that offer courses in areas such as information technology, natural therapies, hospitality, health, theology, law and accounting.

Admission to higher education programs is usually through the achievement of a tertiary entrance ranking based on assessment at senior secondary school, the completion of adult entry exams or bridging courses, or recognition of appropriate prior learning or experience in professions relevant to the field of study chosen.

Higher education providers offer a range of undergraduate and post-graduate courses including traditional academic areas of learning and research, as well as more practical courses with a vocational orientation. Courses may vary in form, entry requirements, duration and method of assessment. For instance, courses can be full-time or part-time, delivered on-

campus, by distance education, or a mix of these modes. In addition, some institutions offer courses which associate full-time study with periods of employment. Courses cover many disciplines such as the humanities, social sciences, education, physical and life sciences, mathematics, information technology, visual/performing arts, engineering, health sciences, commerce, economics, law and agriculture.

Students and courses

In 2010, there were 1.2 million higher education students in Australia, of whom 857,000 (72%) were domestic students and 335,000 (28%) were international students. Of domestic higher education students, 61% were aged between 15 and 24 years. An even greater proportion (70%) of international students were aged 15–24 years, with over half (55%) being aged 20–24 years. There were more domestic students than international students in each age group in 2010 (graph 12.17).

Over half (58%) of domestic higher education students were female, while international students were almost evenly split between male and female.

Between 2005 and 2010, the number of students in higher education rose by approximately 25% from 957,000 to 1.2 million, with international student numbers growing at a faster rate than domestic student numbers until 2009.

In 2010, just under 1 million (81%) of higher education students were studying internally (on-campus), 12% were external students and

the remaining 7% were in multi-modal programs (partially delivered on campus and partially through distance and/or online delivery). Of the internal students, 77% were studying full-time and 23% were studying part-time (table 12.18). A similar distribution was found among students in multi-modal programs. In contrast, the ratios were reversed among students studying externally, with 79% studying part-time and 21% studying full-time.

Two-thirds (66%) of all higher education students in 2010 were studying at the Bachelor degree level, with most of the remainder (20%) studying at postgraduate degree level (Masters degree or Doctoral degree) and about 7% were studying at graduate diploma or graduate certificate level (table 12.19). Some fields of higher education showed a higher proportion of students studying at postgraduate degree levels, such as Information technology (29%), Agriculture, environment and related studies (28%) and Management and commerce (25%).

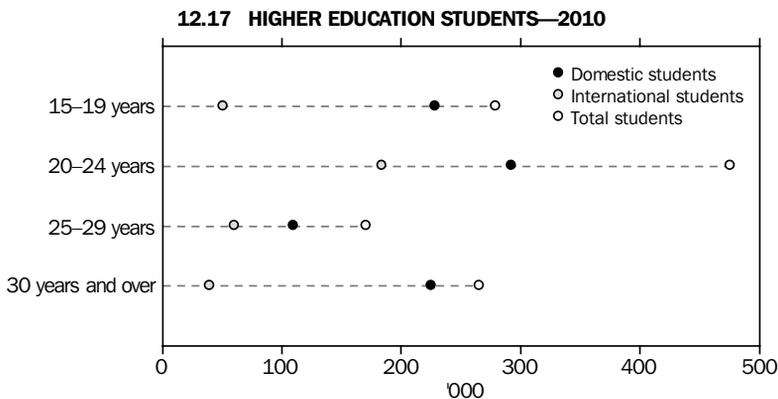
Particular professional requirements can shape the level at which students are pursuing study.

For example, a Graduate Diploma in Education/ Graduate Certificate is a common pathway into teaching at secondary school level in Australia, reflected in the comparatively high proportion (15%) of Education students studying at this level.

Staff

Higher education staff may be classified as being in either academic (engaged in teaching, including supervision of post-graduate study) or non-academic (such as student support, corporate services or governance) roles. There were 48,000 academic staff in Australian higher education institutions in 2011 and 61,000 non-academic staff (table 12.20).

While two-thirds (66%) of non-academic staff in 2011 were female, more than half (56%) of academic staff were male, though this represented a slight decrease from 59% in 2006. The majority (58%) of senior lecturers in 2011 were male, a slight decrease from 63% in 2006. Almost three-quarters (73%) of academic staff above senior lecturer in 2011 were male, down slightly from 77% in 2006.



Source: DEEWR Higher Education Statistics, All Students, 2010.

12.18 HIGHER EDUCATION STUDENTS, By mode of study and full or part-time load—2010

	FULL-TIME STUDENTS		PART-TIME STUDENTS		TOTAL	
	'000	%	'000	%	'000	%
Internal	743.1	77.1	221.3	22.9	964.4	100.0
External	31.4	21.5	114.9	78.5	146.3	100.0
Multi-modal	63.8	77.9	18.1	22.1	81.9	100.0
All students	838.3	70.3	354.3	29.7	1 192.7	100.0

Source: DEEWR Higher Education Statistics, All Students, 2010.

12.19 HIGHER EDUCATION STUDENTS, By level and field of education—2010

		Postgraduate degree	Graduate diploma / Graduate certificate	Bachelor degree	Advanced diploma / Diploma	Total(a)
Natural and physical sciences	%	17.4	2.6	79.0	0.6	100.0
Information technology	%	28.8	4.0	63.3	3.2	100.0
Engineering and related technologies	%	18.8	2.4	72.1	5.3	100.0
Architecture and building	%	22.0	3.1	73.4	1.2	100.0
Agriculture, environmental and related studies	%	28.0	5.9	63.3	2.8	100.0
Health	%	16.0	7.3	75.6	0.8	100.0
Education	%	21.4	15.5	61.2	0.5	100.0
Management and commerce	%	24.6	5.2	64.5	5.6	100.0
Society and culture	%	16.7	8.1	70.3	2.8	100.0
Creative arts	%	10.2	2.6	79.3	4.5	100.0
Total	%	20.2	6.6	66.4	3.4	100.0
Total	no.	241 380	79 075	791 577	40 844	1 192 657

(a) Total includes 'Other', including level not specified and non-award programs.

Source: DEEWR Higher Education Statistics, All Students, 2010.

12.20 HIGHER EDUCATION STAFF—2011

	Males %	Females %	Total %	Total '000
Academic classifications	56.4	43.6	100.0	48 325
Above senior lecturer	72.7	27.3	100.0	12 574
Senior lecturer (Level C)	57.8	42.2	100.0	11 149
Lecturer (Level B)	48.5	51.5	100.0	16 316
Below lecturer (Level A)	45.1	54.9	100.0	8 286
Non-academic classifications	34.4	65.6	100.0	61 199
All classifications	44.1	55.9	100.0	109 524

Source: DEEWR Selected Higher Education Statistics, Staff Numbers, 2011.

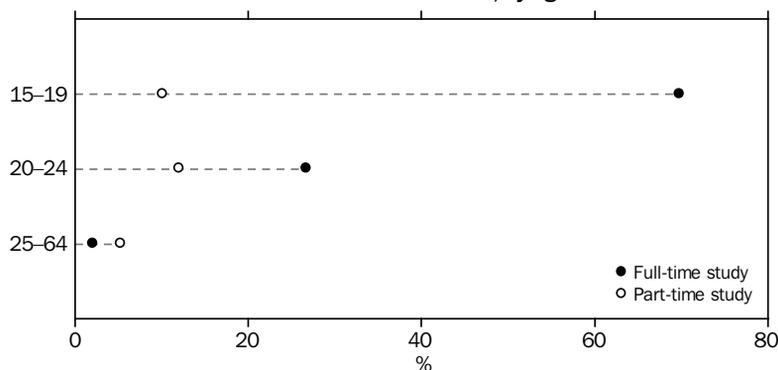
Participation in education

Of people aged 15–19 years, 70% were participating in full-time study in 2011, with an additional 10% participating in part-time study. For 20–24 year olds, 27% were studying full-time and a further 12% were studying part-time. For people aged 25–64, full-time study (2%) was less common than part-time study (5%) (graph 12.21).

A high proportion of young people aged 15–24 years participate in study. Many young people continue in full-time education immediately

after completing compulsory schooling, either continuing with further schooling or in other forms of education such as TAFE or university. In 2011, 72% of 15–19 year olds were in full-time education (including 52% still at school) and a further 7% were participating in part-time study (table 12.22). In the 20–24 years age cohort, 29% were undertaking full-time study and 11% part-time study. People over 24 years may return to study in order to upgrade their skills or to gain new skills; almost one in ten (9%) people aged 25–64 years were studying in 2010, 3% full-time and 6% part-time.

12.21 PARTICIPATION IN EDUCATION, By age—2011



Source: ABS data available on request, Survey of Education and Work, 2011.

12.22 EDUCATION PARTICIPATION RATES, By age—May 2011

	15-19 years %	20-24 years %	25-64 years %
Attending school	52.0	0.1	—
Attending tertiary(a)			
Full-time	19.5	29.3	2.6
Part-time	7.1	11.1	5.9
Total	26.5	40.4	8.5
Total Attending	78.6	40.6	8.5
Not attending	21.4	59.4	91.5
Total	100.0	100.0	100.0

— nil or rounded to zero (including null cells)

(a) Educational institutions other than schools.

Source: ABS data available on request, 2011 Survey of Education and Work.

Education and work

Many people combine work and study, with individual choices based on perceptions of which level of study and type of work will best help them achieve their goals. In May 2011, labour force participation was greatest for those undertaking a Certificate III or IV (83% of those aged 15–24) and lowest among those in school (33%). Work and study combinations are influenced by age (graph 12.23). Students aged 15–24 years were less likely to be employed in

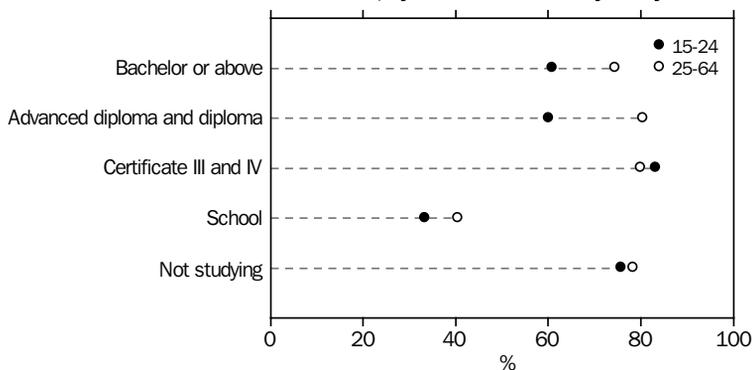
2011 than students aged 25–64 years (except for those studying at the Certificate III/IV level).

A high proportion of young people combine study and employment. Of 1.2 million young people aged 15–19 years enrolled in study, 513,000 (44%) had either full-time or part-time employment. Among people aged 20–24 years enrolled in study, 435,000 (64%) out of 680,000 had full-time or part-time employment (table 12.24).

The term ‘fully engaged’ refers to an individual’s participation in work and/or study considered equivalent to a full-time load. Full-time engagement includes full-time work, full-time study, or a combination of both part-time work and part-time study. Young people who are not fully engaged with work or study over a prolonged period may be at risk of longer-term marginal attachment to the labour market.

In 2011, 86% of young people aged 15–19 years and 78% of those aged 20–24 years were fully engaged in education/training or work (table 12.24). Conversely, 14% and 22% of each age group, respectively, were not fully engaged. While some young people were participating in education or work at a part-time level, 8% of all 15–19 year olds and 12% of 20–24 year olds were not engaged at all in education/training or work.

12.23 PARTICIPATION IN EMPLOYMENT, By educational activity—May 2011



Source: ABS data available on request, Survey of Education and Work, 2011.

12.24 YOUTH PARTICIPATION IN EDUCATION, By labour force status—May 2011

	ENROLLED IN ALL STUDY(a)			Not enrolled '000	Total '000
	Full-time '000	Part-time '000	Total '000		
15-19 YEARS					
In the labour force					
Employed					
Full-time	10.0	83.2	93.2	108.3	201.5
Part-time	405.7	14.1	419.7	82.3	502.0
Total	415.7	97.3	513.0	190.6	703.5
Unemployed	65.1	4.7	69.9	50.7	120.6
Not in the labour force	583.3	5.9	589.3	64.3	653.5
Total	1 064.1	107.9	1 172.1	305.5	1 477.6
20-24 YEARS					
In the labour force					
Employed					
Full-time	23.2	134.3	157.5	613.2	770.7
Part-time	241.2	35.8	277.0	160.2	437.2
Total	264.4	170.1	434.5	773.4	1 207.9
Unemployed	26.2	6.7	32.9	80.4	113.2
Not in the labour force	201.1	11.7	212.9	110.9	323.7
Total	491.7	188.5	680.2	964.6	1 644.8

(a) All persons participating in education, including those whose study will not lead to a qualification.

Source: ABS data available on request, 2011 Survey of Education and Work.

The Australian Longitudinal Learning Database (ALLD)

High-quality education, starting from early childhood through to young adulthood and beyond, is central to Australia's future prosperity and social cohesion. Currently, data collected in the early childhood, education and training sectors are somewhat fragmented and sector specific. They are collected from a variety of sources and provide a good deal of information on participation in education and training, but much less on educational pathways and outcomes for students. There is currently no repository for nationally comparable and consistent data across education and training sectors and federal, state and territory jurisdictions.

Concept of the ALLD

With the sponsorship of the Strategic Cross-Sectoral Data Committee, comprising senior officials across various levels of government, education sectors and relevant information agencies, the ABS has developed a model to show how administrative data could be structured into a student-centred longitudinal database. The model would bring together information on early childhood education, schooling, vocational education and training (VET) and higher education (figure 12.25). Other information could also be incorporated, such as childhood development information from the Australian Early Development Index (AEDI), or the results of literacy and numeracy testing and academic results. Linking these data to population data sources, particularly to the ABS Census of Population and Housing, would provide a comprehensive and coherent national picture of education and training from administrative sources with the contextual factors that influence learning. All of this information could be stored in an enduring, linked statistical and researchable database, with in-built privacy protection.

Construction of the ALLD

The ALLD would be able to provide information at national, state and territory, and small area levels. However, strict ABS confidentiality methods would ensure that no individual or educational institution (e.g. a school) would be identifiable upon release.

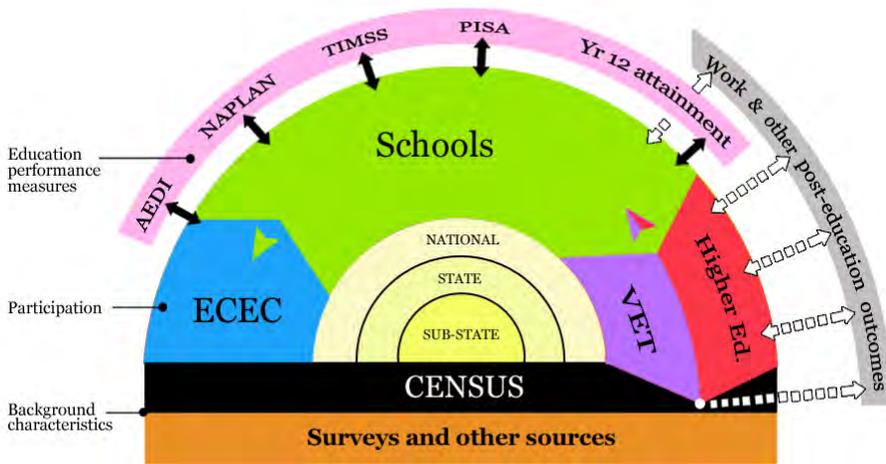
Key benefits of the ALLD

By using data linkage methods, the ALLD would be a cost-effective way of improving data availability without imposing undue burden on respondents or data agencies. As the database would focus on students rather than institutions, there is great potential to establish an integrated picture of education outcomes, pathways and transitions from across the various education sectors. Linking the Census with education data would also provide a greater understanding of the relationships between educational participation and non-participation rates of children and socio-economic characteristics. Overall, the ALLD, as a longitudinal researchable database, would have the ability to create a comprehensive picture of the education characteristics and outcomes of students throughout Australia. By giving policy-makers and the public a clearer understanding of the factors affecting educational outcomes, the ALLD offers the potential to improve outcomes for Australia's children.

Next steps

The ABS will continue consultations with data custodians to foster data sharing and integration and progress the development of the ALLD.

12.25 ALLD overview(a)



(a) ECEC: Early childhood education and care; VET: Vocational education and training; AEDI: Australian Early Development Index; NAPLAN: National Assessment Program - Literacy and Numeracy; TIMSS: Trends in International Mathematics and Science Study; PISA: OECD Programme for International Student Assessment.

Source: *Concept Paper: Australian Longitudinal Learning Database (ALLD)*.

Educational attainment

Formal educational qualifications are a desired outcome of most study at educational institutions. When issued by an accredited authority they denote a particular level of knowledge, skills and competencies.

Formal qualifications assist graduates when entering the labour market, they help employers to select appropriate personnel, and enable clients to assess the quality of professional services. The classification of educational attainment through the formal Australian Qualifications Framework (AQF) assists in measuring the stock of available skills in a community, enabling policy-makers to monitor the supply of skilled personnel compared with the demand for those personnel, and to plan for the direction of future educational focus.

In 2011, of Australia's resident population of 14.8 million people aged 15–64 years, 8.4 million (57%) held at least one formal (non-school) qualification. Approximately 3.5 million had completed a Bachelor degree or above. A further

1.4 million reported an Advanced diploma or Diploma, 2.6 million a Certificate III or IV and 0.5 million a Certificate I or II as their highest qualification.

Just over two-thirds of 15–64 year olds (69%) who had attained Year 12 went on to complete a qualification, the majority obtaining a Bachelor degree or above. In contrast, only a minority of people who had not completed Year 12 (45%) went on to obtain a qualification, most commonly at the Certificate level (table 12.26).

Almost two-thirds (64%) of 25–64 year olds had completed a non-school qualification compared to 28% of 15–24 year olds, many of whom would still be completing their studies (table 12.27). Among the 10-year age cohorts, people aged 25–34 years were the most likely to have a qualification (69%).

In 2011, 35% of people aged 25–34 years had a Bachelor degree or above, compared with 21% of 55–64 year olds. In comparison, a similar proportion of 25–34 year olds and 55–64 year olds (19% and 18%) had completed a Certificate III/IV.

12.26 LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION, By highest year of school completed(a)—May 2011

Level of education	HIGHEST YEAR OF SCHOOL COMPLETED				
	Year 12	Year 11	Year 10	Year 9 or below(b)	
Postgraduate degree	%	7.7	0.5	0.4	0.1
Graduate diploma/Graduate certificate	%	3.3	0.8	0.5	0.1
Bachelor degree	%	28.5	3.0	1.4	0.7
Advanced diploma/Diploma	%	11.7	8.1	5.9	1.8
Certificate III/IV	%	12.7	24.2	27.6	13.6
Certificate I/II	%	2.6	5.7	5.4	3.5
Total with non-school qualification(c)	%	69.1	45.4	44.4	22.0
Total without non-school qualification	%	30.9	54.6	55.6	78.0
Total	%	100.0	100.0	100.0	100.0
Total	'000	8 490.8	1 621.3	3 353.4	1 382.6

(a) Persons aged 15–64 years.

(b) Includes persons who never attended school.

(c) Includes certificate not further defined and level not determined.

Source: ABS data available on request, 2011 Survey of Education and Work.

12.27 LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION, By age—May 2011

Level of education	AGE GROUPS (YEARS)					Total(a)	
	15–24	25–34	35–44	45–54	55–64		
Postgraduate degree	%	0.4	6.4	6.2	5.3	4.7	4.6
Graduate diploma/Graduate certificate	%	0.1	1.9	2.5	3.2	3.1	2.1
Bachelor degree	%	7.4	26.8	21.2	15.1	13.3	17.0
Advanced diploma/Diploma	%	4.2	9.6	11.1	11.7	9.1	9.1
Certificate III/IV	%	10.5	19.0	20.2	19.4	18.3	17.4
Certificate I/II	%	3.5	2.7	3.9	3.9	4.6	3.7
Total with non-school qualification(b)	%	28.2	69.4	67.8	61.1	55.9	56.5
Total without non-school qualification	%	71.8	30.6	32.2	38.9	44.1	43.5
Total	%	100.0	100.0	100.0	100.0	100.0	100.0
Total	'000	3 122.5	3 215.9	3 118.1	2 969.3	2 422.3	14 848.1

(a) Persons aged 15–64 years.

(b) Includes certificate not further defined and level not determined.

Source: Education and Work, Australia, May 2011 (6227.0).

In the five years 2006 to 2011, the proportion of people aged 15–64 years with a Bachelor degree or above increased from 21% to 24%, while the proportion aged 25–34 years with a Bachelor degree or above increased from 29% to 35%. The proportion of women aged 25–34 years with a Bachelor degree or above increased from 32% to 40%, while the corresponding proportion of men in that age group increased from 26% to 30% (graph 12.28).

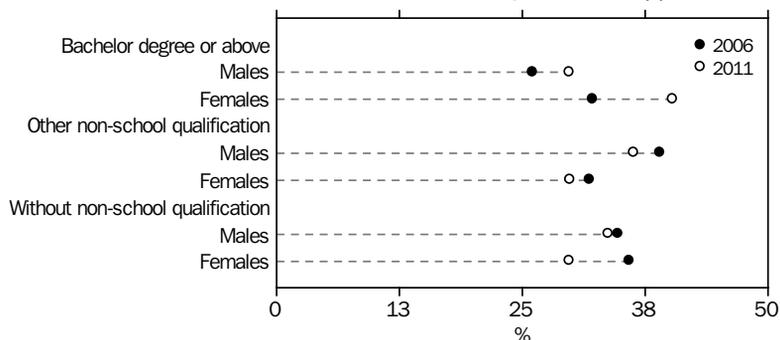
Over half of people aged 15–64 years with a qualification held their highest qualification in one of the three broad fields of Management and commerce (24%), Engineering and related technologies (17%) or Society and culture (14%) (table 12.29). A similar proportion of people in each 10-year age cohort had completed their highest non-school qualification in Society and

culture (13% and 14%). A higher proportion of people in older cohorts had completed their highest qualification in Engineering and related technologies, while a slightly higher proportion of young people had completed their highest qualification in Management and commerce.

Financing education

This section provides an overview of the sources and distribution of funds in the delivery of education and training in Australia. As most of these funds can ultimately be traced back to government outlays, most of the tables relate to government finance statistics (GFS). GFS data are compiled in accordance with the International Monetary Fund's *Government Finance Statistics Manual 2001*. GFS education data relate to the activities of the Australian,

12.28 LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION(a)



(a) Persons aged 25–34 years.

Source: ABS data available on request, Survey of Education and Work 2006, 2011.

12.29 MAIN FIELD OF HIGHEST NON-SCHOOL QUALIFICATION, By age—May 2011

Field of highest non-school qualification	AGE GROUP (YEARS)					Total(a)
	15–24	25–34	35–44	45–54	55–64	
	'000	'000	'000	'000	'000	'000
Natural and physical sciences	29.1	83.9	74.3	59.1	55.7	302.1
Information technology	41.3	130.6	80.6	44.8	22.0	319.2
Engineering and related technologies	111.0	331.7	337.9	348.9	299.1	1 428.7
Architecture and building	63.7	128.9	132.1	119.3	79.6	523.6
Agriculture, environment and related studies	26.6	61.9	63.2	45.3	26.9	223.9
Health	67.6	203.1	209.0	222.1	139.9	841.6
Education	26.4	121.9	149.5	144.0	144.0	585.8
Management and commerce	216.9	570.5	521.1	411.4	284.8	2 004.6
Society and culture	124.5	295.3	295.0	244.4	191.6	1 150.8
Creative arts	58.8	130.2	100.3	60.3	37.8	387.4
Food, hospitality and personal services	101.3	140.0	123.8	83.2	51.4	499.6
Other(b)	12.6	33.6	28.7	31.0	20.2	126.1
Total	879.9	2 231.6	2 115.4	1 813.7	1 352.9	8 393.5

(a) Persons aged 15–64 years.

(b) Includes 'Field not determined' and 'Mixed field programmes'.

Source: Education and Work, Australia, May 2011 (6227.0)

state and territory governments and, for the purposes of the data presented here, represent the general government sector only. (The general government sector refers to the main functions of government, that is, the provision of non-market services, the regulation of economic and social conditions, and the redistribution of income within the community; these activities are primarily financed by taxation and carried out by government entities.)

While government finance statistics provide an important perspective on education funding, a

wider presentation using national accounting data is also important. National accounts data are compiled in accordance with the United Nations *System of National Accounts*. Within the national accounts framework, the household sector includes both individuals and private non-profit institutions serving households (e.g. non-government schools).

Data for individual time periods are expressed in 'current prices', that is, in terms of prices prevailing at the time. Consequently, changes over time may be affected by price changes.

Education expenses

Final expenditure on education

Between 2006–07 and 2010–11, national education expenditure in Australia rose from \$64 billion to \$94 billion (table 12.30). Education spending as a proportion of Australia's GDP rose over the same period from 5.3% to 7.1%.

This peak in education spending featured a doubling of government expenditure on gross fixed capital formation, from \$5.5 billion in 2008–09 to \$11.1 billion in 2009–10, stabilising around this level in 2010–11. The spending increase was associated with the Commonwealth Government's *Building the Education Revolution* program.

General government expenses

Operating expenses on education are categorised into five main economic types: capital transfers,

current transfers, depreciation, non-employee expenses and employee expenses (graph 12.31). The total of all levels of government employee expenses, at 49%, comprised just under half of the total education expenditure. Non-employee expenses and current transfer expenses were each 22% of the total education expenses recorded in 2009–10.

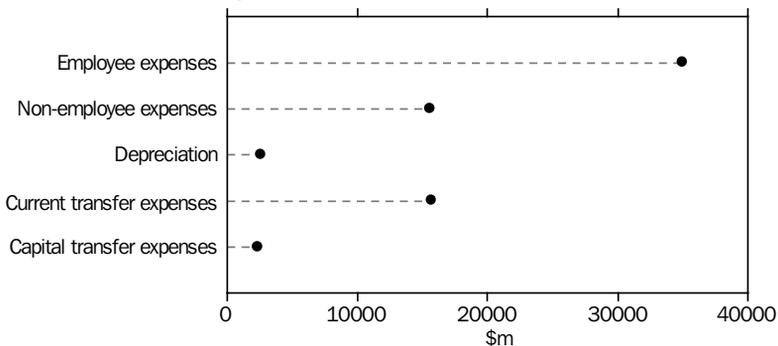
Between 2008–09 and 2009–10, government contributions to operating expenses of primary and secondary education increased by 18% from \$33b to \$39b (table 12.32). Over the same period, corresponding government contributions to tertiary education, whether university or technical, rose from \$23b to \$24b. Operating expenses attributed to Education 'not elsewhere classified' (n.e.c.), which covers outlays on education affairs and services that cannot be assigned to a particular level of education, also grew, from just under \$2b to almost \$4b.

12.30 FINAL EXPENDITURE ON EDUCATION

		2006–07	2007–08	2008–09	2009–10	2010–11
Final consumption expenditure						
General government	\$m	35 273	37 045	41 033	43 425	45 994
Household	\$m	21 813	23 427	25 873	28 366	31 071
Total	\$m	57 086	60 472	66 906	71 791	77 065
Gross fixed capital formation						
General government	\$m	3 883	4 349	5 459	11 144	11 538
Private	\$m	2 832	3 217	3 182	5 411	5 362
Total	\$m	6 715	7 566	8 641	16 555	16 900
National education expenditure	\$m	63 801	68 038	75 547	88 346	93 965
Gross domestic product (GDP)	\$m	1 201 563	1 246 899	1 263 934	1 293 380	1 320 057
National education expenditure as proportion of GDP	%	5.3	5.5	6.0	6.8	7.1

Source: Australian System of National Accounts, 2010–11 (5204.0).

12.31 GENERAL GOVERNMENT OPERATING EXPENSES ON EDUCATION, By economic transaction—2009–10



Source: Government Finance Statistics, Australia, 2009–10.

12.32 GOVERNMENT CONTRIBUTIONS TO OPERATING EXPENSES ON EDUCATION(a), By purpose

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
Primary and secondary education	27 594	29 078	30 496	33 104	39 099
Tertiary education					
University education	13 412	13 991	15 306	17 446	18 266
Technical and further education	4 682	4 736	5 158	5 513	5 861
Tertiary education n.e.c.	62	61	97	64	74
Total	18 156	18 788	20 561	23 024	24 201
Preschool and education not definable by level(b)	2 128	2 287	2 439	2 983	3 089
Transportation of students	1 122	1 106	1 261	1 326	1 352
Education n.e.c.	647	708	763	1 930	3 719
Total(c)	49 648	51 966	55 521	62 366	71 461

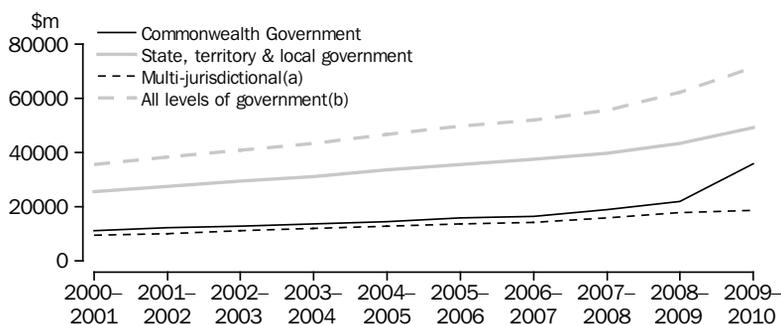
(a) All levels of government.

(b) Includes special education.

(c) Less intra-sector transfers.

Source: Government Finance Statistics, Education, Australia, 2009–10 (5518.0.55.001).

12.33 GOVERNMENT OPERATING EXPENSES ON EDUCATION, By level of government



(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or the classification of a unit to a jurisdiction is unclear. The main types of units falling into this category are public universities.

(b) Less intra-sector transfers.

Source: Government Finance Statistics, Education, Australia, 2009–10 (5518.0.55.001).

From 2008–09 to 2009–10, there was a 63% increase in Commonwealth government spending on education (graph 12.33). Education expenditure at the state, territory and local government level increased by 13%, while multi-jurisdictional expenses grew by 4%. Overall, education expenditure by Australian governments, once intra-sector transfers are excluded, grew by 15% from 2008–09 to 2009–10, to a total of \$71b.

Education funding

Funds to support educational facilities and the delivery of education services originate from a variety of sources, predominantly grants from the Australian and state and territory governments.

Funding is also derived from sales of goods and services including fees and charges for tuition and materials, which vary considerably within the education sector. Other sources of funds may include items such as donations or returns from investments.

Primary and secondary school tuition is free in government schools in all states and territories. Fees may be charged for the hire or purchase of personal educational equipment such as text books or art supplies, and schools may also seek voluntary contributions from parents.

Most non-government schools charge fees which can vary considerably based on educational

philosophy and level of government funding. Additional fees may be charged for textbooks, subject materials and extra-curricular activities.

Most vocational education and training (VET) providers charge students fees for the administration of VET courses, for tuition, materials or for student amenities. These fees vary according to the type of course and its duration, and the institution providing the course.

Higher education institutions receive direct grants from government, but also receive revenue from students who are required to contribute to the cost of their education through the Higher Education Loan Program, and from other fee-paying students including overseas students. Many on-campus facilities and services are funded through additional fees, either directly or through a general services fee.

Adult and community education (ACE) courses are usually provided on a fee-paying basis, including when delivered through institutions that may also offer formal VET, schooling or higher education programs. The extent of the fees for ACE may vary considerably due to the diversity of courses and providers available in the sector.

Trade in education services

The total export value of education-related fees and sales of goods and services for Australia in the 2010–11 financial year was \$15.8 billion, a 12% reduction compared to 2009–10. This was in contrast to the rapid growth of previous years during which the total export value of the education sector more than doubled from \$8.3 billion in 2004 to almost \$18 billion in 2009–10.

The interruption to growth in education-related exports was recorded across all education levels, including higher education, VET and schooling, as well as non-award education services. Higher education remained the largest sector contributing to education exports, with \$9.4b representing 58% of education export earnings. VET contributed a further \$4.1b, or 28%, of earnings. Overall, 40% of education export earnings were in the form of fees, with the remaining 60% being goods and services. Fees accounted for a slightly larger share of VET income (42%) than higher education income (37%).

The total value of imports of education services, including study overseas, was \$914m in the 2010–11 financial year, resulting in a net international income from education-related goods, services and fees of \$14.8b.

International comparisons

One of the outcomes under the Council of Australian Governments (COAG) National Education Agreement is to ensure that Australian students excel by international standards. In this section, data are sourced from the Organisation for Economic Co-operation and Development (OECD), which has undertaken a major international program to examine the role of education in economic and social development. The OECD membership consists of most of the developed nations with which Australia may be compared.

This section compares Australia with other countries in secondary school completion rates, higher education qualifications and schooling achievement. The first two measures show the success of countries in providing education to their populations, while the last measure shows the quality of the competencies that students gain through education, such as literacy and numeracy.

Senior secondary completion

The proportion of the population who have completed at least senior secondary school (equivalent to Year 12 completion in Australia) is generally much higher in younger than older adults for OECD countries (table 12.34). This indicates a significant increase in school completion rates over the past 30 years. There are a small number of exceptions, such as the United States of America, where high completion levels have been in place for a number of years.

In Australia, people aged 25–34 years had a much higher school completion rate (82%) than did those aged 55–64 years (55%), consistent with the OECD average. The most dramatic differences between the age groups were in Korea, Republic of (South), Italy and Ireland.

**12.34 POPULATION WITH AT LEAST SENIOR SECONDARY EDUCATION,
By age for selected OECD countries—2008**

	25–34 years	35–44 years	45–54 years	55–64 years	Total 25–64 years	Difference between 25–34 and 55–64 year age groups Percentage points
	%	%	%	%	%	
United States of America	88	89	89	89	89	-1
Canada	92	90	86	80	87	12
Poland	93	91	87	76	87	17
Switzerland	90	88	85	83	87	8
Germany	86	87	86	82	85	4
Korea, Republic of (South)	98	93	68	40	79	57
Netherlands	82	77	71	62	73	20
New Zealand	79	74	71	62	72	17
France	83	77	64	55	70	28
Australia	82	73	66	55	70	27
United Kingdom	77	70	67	63	70	13
Ireland	85	75	62	45	69	40
Italy	69	57	49	35	53	34
OECD average(a)	80	75	68	58	71	22

(a) Of 30 OECD countries.

Source: OECD, *Education at a Glance*, 2010.

**12.35 POPULATION WITH HIGHER EDUCATION QUALIFICATION(a), By age for selected OECD
countries—2008**

	25–34 years	35–44 years	45–54 years	55–64 years	Total 25–64 years	Difference between 25–34 and 55–64 year age groups Percentage points
	%	%	%	%	%	
United States of America	32	33	30	31	32	1
Canada	30	28	21	21	25	9
Poland	32	19	13	12	20	20
Germany	17	17	16	15	16	3
Korea, Republic of (South)	35	32	19	11	26	24
Netherlands	38	30	28	24	30	13
New Zealand	34	26	22	18	25	15
France	24	18	12	12	16	12
Australia	32	27	23	19	26	13
United Kingdom	31	23	20	19	24	12
Ireland	31	23	17	12	22	18
Italy	20	15	12	10	14	10
OECD average(b)	27	22	18	15	21	12

(a) 'Higher education' refers to qualifications at Bachelor degree level or above.

(b) Of 31 OECD countries.

Source: OECD, *Education at a Glance*, 2010.

Higher education qualifications

Younger adults are also more likely to have higher education qualifications than older adults in most OECD countries (table 12.35). This indicates that there has been a substantial increase in higher education in the last three decades. Indeed, given that many older adults have subsequently acquired higher education qualifications, the difference between the age groups may understate change. Care has to be taken in making comparisons between countries because of differences in education systems.

In Australia, the proportion of people with higher education qualifications was above the OECD average in all age groups. The differences between younger and older age groups in levels of higher education qualifications was particularly large in Korea, Poland and Ireland.

Schooling achievement

The Programme for International Student Assessment (PISA) is a series of tests conducted by the OECD every three years, with the aim of providing a credible, comparable measure of the achievement of 15-year old students in a range of core capabilities. The PISA tests assess reading, mathematics and science. The tests have been conducted in a range of participating OECD countries and non-OECD partner countries/economies.

Table 12.36, shows the ten highest ranked participant countries/economies from the 2009 PISA testing process, as well as the main English-language countries. Australia was one of 10 participants to achieve results above the OECD average for every category of the PISA tests in 2009. Shanghai (China) was the highest ranked participant on all three scales. Korea, Republic of (South), Finland and Hong Kong (SAR of China) were also highly ranked on multiple scales.

12.36 PISA 2009 RESULTS, for selected countries/economies—2009

	<i>Reading score</i>	<i>Mathematics score</i>	<i>Science score</i>
TEN HIGHEST RANKED PARTICIPANTS – READING SCORE			
Shanghai (China)	556	600	575
Korea, Republic of (South)	539	546	538
Finland	536	541	554
Hong Kong (SAR of China)	533	555	549
Singapore	526	562	542
Canada	524	527	529
New Zealand	521	519	532
Japan	520	529	539
Australia	515	514	527
Netherlands	508	526	522
OTHER ENGLISH LANGUAGE COUNTRIES			
United States of America	500	487	502
Ireland	496	487	508
United Kingdom	494	492	514
OECD average(a)	493	496	501

(a) Of participating OECD countries.

Source: OECD, PISA 2009 database.

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CRIME AND JUSTICE

The effects of criminal activity – as well as people’s perceptions about the extent of such activity – can have a direct or indirect impact on the quality of people’s lives. This chapter provides an overview of the Australian criminal justice system, including people’s interaction with the system either as offenders or as victims of crime.

Data are presented on the characteristics of victims of crime and criminal offenders and on outcomes from the justice process. These data are sourced from administrative data collected by a range of agencies operating in the field of crime and justice and from household surveys conducted by the Australian Bureau of Statistics (ABS). Justice is primarily administered through state and territory governments, with local variations in legislation, processes and operational structures. By taking account of these differences, nationally comparable crime and justice statistics can be compiled and provide indicators of the level and nature of crime across Australia and the associated outcomes of the criminal justice system.

The chapter concludes with a special article *Youth victimisation and offending: a statistical snapshot*, in which findings from a number of ABS crime data sources are presented.

Criminal justice system

The criminal justice system comprises the state/territory and Australian Government institutions, agencies, departments and personnel responsible for dealing with victims of crime, persons accused or convicted of committing a crime, and related issues and processes.

The eight Australian states and territories each have powers to enact their own criminal laws. The Commonwealth also has the power to enact laws, including sanctions for criminal offences, in relation to its responsibilities under the Constitution. Consequently, there are nine different systems of criminal law in Australia. The existence of co-operative arrangements between the various states and territories and the Commonwealth, such as those relating to extradition or to the creation of joint police services, help address issues that have arisen out of the separate development and operation of these various systems of criminal law.

Each state and territory has its own police, courts and corrective services systems that deal with offences against local laws and also federal laws in some cases. The corrective service system comprises the agencies responsible for the operation of custodial facilities and community-based corrections programs. The federal criminal justice system deals with offences against Commonwealth laws. Criminal law is administered principally through the federal, state and territory police, the courts, and state and territory corrective services. As there is no independent federal corrective service, the relevant state or territory agencies provide corrective services for federal offenders.

The various agencies that comprise the criminal justice system act within a broader process in which criminal offenders interact with police, courts and corrective services. Diagram 13.1 illustrates the various stages involved in the processing of criminal cases and shows some of the links between these three elements of the criminal justice system.

The police, as well as other law enforcement agencies such as the Australian Customs Service, are responsible for the prevention, detection and investigation of crimes. When alleged offenders are detected by police, they can be proceeded against either through the use of a non-court process (such as a caution, fine or

diversionary conference) or charges may be laid before a criminal court. The court, including judicial officers and a jury (in the higher courts), with the assistance of the prosecution and the defence, determines the guilt or innocence of the defendant.

Following the hearing of the charges, in cases where a finding of guilt is made by the court, sentences may be imposed. These may include imprisonment, community service orders of various kinds, fines or bonds. A number of jurisdictions have also introduced penalties such as home detention or work camps that are administered by corrective services agencies.

Classification of offences

The Australian and New Zealand Standard Offence Classification (ANZSOC)(1234.0) was created to provide a framework capable of being applied at various levels for classifying offences for statistical purposes.

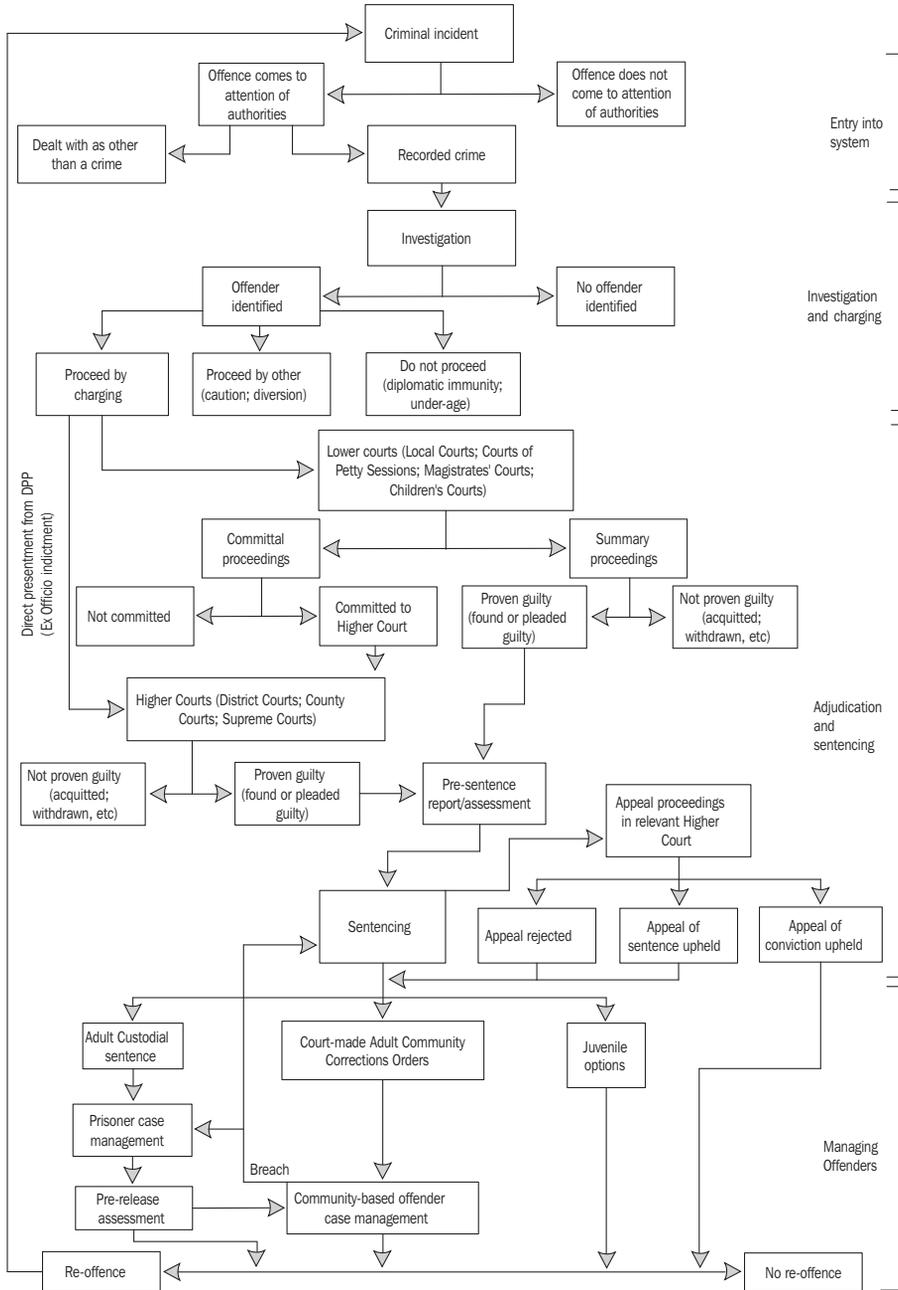
The third edition of the ANZSOC was released in June 2011. This edition incorporated a name change to reflect international use of the framework to classify criminal behaviour and the correction of some minor typographical errors from its predecessor, the Australian Standard Offence Classification (ASOC) 2008. The classification content and structure are unchanged.

In the crime and justice collections described throughout this chapter, offences are classified according to the most recent edition of the offence classification that was available when each collection was published. *Recorded Crime – Victims, Australia 2010* (4510.0) was the first collection to incorporate the third edition. Other collections cited in the chapter are classified according to the ASOC 2008. As there were no changes to content between the second and third editions, the labels used to describe offence types are the same in both name and content.

Expenditure on public order and safety

The Steering Committee for the Review of Government Service Provision, in the *Report on Government Services 2011*, estimated recurrent expenditure on justice in 2009–10 at \$557 per person. This excluded spending by governments

13.1 FLOWS THROUGH THE CRIMINAL JUSTICE SYSTEM



Source: National Criminal Justice Statistical Framework (4525.0).

13.2 GOVERNMENT EXPENDITURE ON JUSTICE(a)(b)(c)

	2005–06	2006–07	2007–08	2008–09	2009–10
<i>Justice sector</i>	\$m	\$m	\$m	\$m	\$m
Police services	7 210	7 400	7 597	7 788	8 235
Court administration – criminal	588	610	633	657	673
Court administration – civil(d)	612	624	624	596	618
Corrective services	2 386	2 463	2 588	2 730	2 807
Total justice system	10 796	11 096	11 442	11 772	12 334

(a) In 2009–10 dollars.

(b) Includes depreciation but excludes payroll tax and user cost of capital.

(c) Excludes expenditure on justice services out of scope of the Report (e.g. expenditure on specialist courts).

(d) Civil expenditure excludes expenditure on probate matters.

Source: *Steering Committee for the Review of Government Service Provision, Report on Government Services 2011.*

on items such as justice services outside the scope of the Report (e.g. expenditure on specialist courts). Total recurrent expenditure was \$12.3 billion in 2009–10; \$8.2 billion was spent on police services and \$2.8 billion on corrective services (table 13.2).

Law enforcement agencies

Australia is served by police agencies in each state and the Northern Territory, with the Australian Federal Police (AFP) being responsible for policing the Australian Capital Territory. The Australian Crime Commission (ACC), and the Australian Customs and Border Protection Service (ACBPS) also have responsibility for the maintenance of law, order and safety.

The principal duties of the police are the prevention, detection and investigation of crime, the protection of life and property, and the enforcement of law to maintain peace and good order. Police may also perform a variety of additional duties in the service of the state. These duties include the prosecution of summary offences, regulation of street traffic, performing duties as clerks of petty sessions, crown land bailiffs, mining wardens and inspectors under fisheries and other relevant legislation.

With the exception of the AFP, the ACC and the ACBPS, police agencies in Australia are under the control of the relevant state or territory government. However, their members also perform certain functions on behalf of the Australian Government such as the registration of aliens, and the enforcement of various Commonwealth Acts and Regulations in conjunction with the AFP and other Commonwealth officers.

Australian Government policing agencies

Australian Federal Police (AFP)

The AFP is a statutory authority established by the *Australian Federal Police Act 1979* (Cwlth). The AFP has its headquarters in Canberra, Australian Capital Territory. The eight key national functions of the AFP are: Serious and Organised Crime, Crime Operations, Intelligence, International Deployment Group, Counter Terrorism, Protection, Aviation and High Tech Crime Operations.

The AFP's role is to enforce Commonwealth criminal law and to protect national interests from crime in Australia and overseas. It is responsible for the prevention, detection and investigation of criminal offences such as drug offences, high tech crime, and money laundering and organised crime. The AFP is also responsible for identifying the proceeds of crime; preventing, countering and investigating terrorism; and investigating fraud against Commonwealth revenue and expenditure (such as social security and taxation fraud). In the Australian Capital Territory, the AFP provides a full range of general community policing services, including traffic control, special operations, search and rescue services, and conventional crime investigation.

Australian Crime Commission (ACC)

The ACC is responsible for providing a co-ordinated national criminal intelligence framework to deal with serious and organised criminal activity. It has access to special coercive powers to assist in intelligence operations and investigation, for circumstances where traditional law enforcement methods are not sufficient to combat sophisticated criminal activity.

Special investigations are undertaken by the ACC. These include matters such as targeting high risk criminals and crime groups, criminal wealth and established criminal networks.

Australian Customs and Border Protection Service (ACBPS)

The ACBPS manages the security and integrity of Australia's borders. It is responsible for the detection and the deterrence of the unlawful movement of goods, such as illegal drugs and firearms, and people across the border.

Number of sworn police officers

The number of sworn police officers in the various police services in 2009–10 is shown in table 13.3. The figures in the table are not directly comparable across the various jurisdictions, as data for ACC, AFP and the Northern Territory are based on a headcount at the end of the financial year, whereas those for other jurisdictions are on a full-time equivalent (FTE) basis.

National crime statistics

National crime statistics aim to provide indicators of the level and nature of crime victimisation in Australia and a basis for assessing change over time. When an incident of crime victimisation occurs, there are a number of ways in which this can be measured and a number of stages

in criminal justice system processes where a measurement can be taken. Stages progress from the time that a person perceives they have been a victim, through to reporting to police and the laying of charges. From a range of possible ways of measuring crime, there are two major sources of statistics produced by the ABS that can inform users about crime victimisation. The first is a measure of crimes reported to, and recorded by, police. The second source is direct reports from members of the public about their experiences of crime, as collected in household surveys conducted by the ABS. Neither of these sources will provide a definitive measure of crime victimisation, but together they provide a more comprehensive picture of victimisation than either measure alone. Both sources have a number of limitations of which users should be aware.

Recorded crime statistics are the result of incidents coming to police attention and a subsequent decision-making process carried out by police in accordance with the criminal law. As such, they are subject to different legislation, rules of operation and procedures in different jurisdictions. Fluctuations in recorded crime may also be a reflection of changes in community attitudes to reporting crime rather than a change in the incidence of criminal behaviour.

A complementary picture of the nature and extent of personal and household crime comes from crime victimisation surveys. One of the

13.3 SWORN POLICE OFFICERS(a)—2009–10

	no.	rate(b)
Australian Crime Commission(c)	86	na
Australian Federal Police(d)	3 056	na
New South Wales	16 802	234
Victoria	12 945	236
Queensland	13 087	322
South Australia	5 105	312
Western Australia	6 382	281
Tasmania	1 372	271
Northern Territory	1 528	671
Australian Capital Territory	798	225

na not available

(a) FTE staff except for the Australian Crime Commission, Australian Federal Police and Northern Territory totals, where data are based on headcounts.

(b) Rate per 100,000 people.

(c) Includes ACC seconded police and task force staff.

(d) The 2009–10 financial year includes AIPM (Australian Institute of Police Management) recorded in the AFP (Australian Federal Police) total numbers.

Source: Steering Committee for the Review of Government Service Provision, *Report on Government Services 2011*; Australian Crime Commission, *Annual Report 2009–10*; Australian Federal Police, *Annual Report 2009–10*.

primary reasons for conducting victimisation surveys is that many victims of crime do not report their experiences to the police, and therefore are not counted in police data. Victimisation surveys provide information about the broader community experience of crime, including the volume of crime that is not officially recorded. Crime victimisation surveys are suitable for measuring crimes against individuals (or households) who are aware of and recall the incident and how it happened, and who are willing to relate what they know. These surveys allow crime information to be related to personal and household characteristics, and facilitate the study of patterns of victimisation over time and across crime categories. Not all types of crime are suitable for measurement by household surveys. No reliable victim-based information can be obtained about crimes where there is no specific victim (e.g. trafficking in narcotics) or where the victim is deceased (e.g. murder). Crimes of which the victim may not be aware cannot be measured effectively; some instances of fraud and many types of attempted crimes fall into this category.

The ABS conducts an annual Crime Victimization Survey from which results are currently available for 2008–09 and 2009–10. In addition, the ABS

from time to time may conduct more in-depth surveys about particular aspects of crime victimisation that are of a more sensitive nature, for example, the Personal Safety Survey which provides estimates of the prevalence of violence in society.

Different data sources, for example, administrative data compared with survey data, may yield different results. This is also the case for different survey methodologies, whereby surveys may differ in sample design, collection mode and data item definitions. Therefore, particular care should be taken when interpreting crime and justice statistics. For further information, please refer to *Measuring Victims of Crime: A Guide to Using Administrative and Survey Data* (4500.0.55.001).

Crime victimisation

The Crime Victimization Survey is an annual survey conducted using the ABS Multipurpose Household Survey (MPHS). The survey collects data about victims aged 15 years and over for a selected range of personal and household offences including assault, threatened assault, sexual assault (persons aged 18 years and over), robbery, break-in, attempted break-in, motor vehicle theft, theft from

13.4 VICTIMS OF SELECTED PERSONAL AND HOUSEHOLD CRIME—2008–09 and 2009–10

	VICTIMISATION RATE(a) (%)		REPORTING RATE(b) (%)	
	2008–09	2009–10	2008–09	2009–10
SELECTED PERSONAL CRIME				
Assault				
Physical assault	3.1	2.9	44.7	50.5
Threatened assault				
Face-to-face	3.9	3.1(c)	29.7	31.9
Non face-to-face	1.2	0.8(c)	na	na
Total threatened assault	4.2	3.4(c)	na	na
Total assault	6.3	5.7(c)	na	na
Robbery	0.6	0.4(c)	39.1	60.7(c)
Sexual assault(d)	0.3	0.3	31.2	36.6
SELECTED HOUSEHOLD CRIME				
Break-in	3.3	3.0	75.9	75.8
Attempted break-in	3.1	2.4(c)	38.1	41.7
Motor vehicle theft	1.1	0.9	86.7	89.8
Theft from a motor vehicle	4.5	3.7(c)	55.4	55.3
Malicious property damage	11.1	9.1(c)	43.3	46.8(c)
Other theft	4.4	3.5(c)	34.3	37.3

na not available

(a) Proportion of total persons who were a victim of selected crime.

(b) Number of victims who reported the most recent crime incident to police expressed as a percentage of victims.

(c) Difference in rate between 2009–10 and 2008–09 is statistically significant.

(d) Persons aged 18 years and over.

Source: *Crime Victimization, Australia* (4530.0).

a motor vehicle and malicious property damage. The survey also provides information about the characteristics of victims, the characteristics of their most recent incident and whether the incidents were reported to police.

Table 13.4 shows a significant decrease in victimisation rates from 2008–09 to 2009–10 for the person offences of threatened assault (4.2% in 2008–09 to 3.4% in 2009–10) and robbery (0.6% in 2008–09 to 0.4% in 2009–10). Approximately half (51%) of all incidents of physical assault and a third (37%) of all incidents of sexual assault were reported to the police in 2009–10. Robbery had the highest reporting rate of the personal crimes at 61%, a significant increase on the previous year (39%).

Significant decreases in victimisation rates from 2008–09 to 2009–10 were seen across almost all of the household crimes, except break-in and motor vehicle theft. Malicious property damage had the highest victimisation rate in 2009–10 at 9%. Reporting rates for household crimes were generally higher than those of personal crimes, particularly for the offences of break-in (76%) and motor vehicle theft (90%). Malicious property damage was the only household crime to experience a significant change in reporting rates, increasing from 43% in 2008–09 to 47% in 2009–10.

Age and sex of victims

According to the Crime Victimization Survey of 2009–10, males were more likely than females to be victims of physical assault, with a victimisation rate of 3.4%, compared to 2.4% for females (table 13.5). Persons aged 15–19 were most likely to be victims of physical assault (6.0%) followed by persons aged 20–24 (5.5%).

Males were more likely than females to be victims of face-to-face threatened assault (3.6% and 2.6%). As with physical assault, persons aged 15–19 were most likely to be victims of both face-to-face threatened assault (5.3%) and non face-to-face threatened assault (1.7%), followed by persons aged 20–24 (4.2% and 1.5%).

In the 12 months prior to the survey interview, males were more likely than females to be victims of robbery (0.5% and 0.3%), whilst females were more likely than males to be victims of sexual assault (0.4% and 0.1%). Persons aged 18–24 had the highest victimisation rate for sexual assault (0.5%).

13.5 VICTIMISATION RATES BY SEX—2009–10

	VICTIMISATION RATE (%)	
	Male	Female
Assault		
Physical assault	3.4	2.4(a)
Threatened assault		
Face-to-face	3.6	2.6(a)
Non face-to-face	0.7	0.9
Total threatened assault	3.8	2.9(a)
Robbery	0.5	0.3(a)
Sexual Assault	*0.1	0.4(a)

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Difference in rate between males and females is statistically significant.

Source: *Crime Victimization, Australia (4530.0)*.

Crimes recorded by police

The ABS Recorded Crime – Victims collection produces national statistics on incidents of victimisation for a selected range of household and personal offences that come to the attention of state and territory police during a calendar year. The collection includes information about the characteristics of the victim and the nature of the criminal incidents.

The 2010 publication marks a break in series for the Recorded Crime – Victims collection. This is due to changes in police recording practices, implementation of a revised offence classification and completion of the National Crime Recording Standard (NCRS) implementation. Consequently, comparisons should not be made between data for 2010 onwards and data published up to 2009.

In 2010, the Australian victimisation rates recorded by police for selected person offence categories were:

- Murder, 1.0 victims per 100,000 persons
- Attempted murder, 0.9 victims per 100,000 persons
- Manslaughter, 0.1 victims per 100,000 persons
- Sexual assault, 79.5 victims per 100,000 persons
- Kidnapping/abduction, 2.7 victims per 100,000 persons
- Robbery, 56.0 victims per 100,000 persons.

Weapons used against victims of crime recorded by police

In 2010, a weapon was used in 67% of murders, 71% of attempted murders, and 39% of robberies. The most common weapon type used in the commission of all three offences was a knife, which was used against 33% of murder, 28% of attempted murder, and 18% of robbery victims.

The next most common weapon type that was used against victims was a firearm, with 17% of murder, 24% of attempted murder, and 7% of robbery victims subjected to an offence involving a firearm.

The majority of sexual assault (98%), kidnapping/abduction (89%) and robbery victims (61%) did not have a weapon used against them in the commission of the offence.

Outcomes of police investigations

Statistics about the outcomes of police investigations describe the status of the processes of police investigations that are initiated following the reporting or detection of an offence. At any

point in time, the status of investigations can include:

- not finalised (i.e. were still continuing, were pending or were suspended)
- finalised without an offender being proceeded against because the reported offence was not verified, the complaint was withdrawn, or the alleged offender could not be proceeded against because of some statutory or procedural bar and
- finalised and an offender was proceeded against by initiating court action or some other form of formal proceeding (e.g. a diversionary conference or a formal caution).

In 2010, 78% of police investigations into murder and 74% of attempted murder investigations were finalised within 30 days of a victim becoming known to police.

The lowest proportions of finalisations at 30 days were for victims of unlawful entry with intent (11%), motor vehicle theft (14%) and other theft (17%).

The highest proportions of investigations finalised where there was no offender proceeded against were for victims of sexual assault (19%) and blackmail/extortion (15%) (table 13.6).

13.6 RECORDED CRIME – VICTIMS(a), Outcome of investigation at 30 days—2010

ANZSOC Division/Subdivision(b)	Not finalised	FINALISED		Total(c)
		No offender proceeded against	Offender proceeded against	
Homicide and related offences				
Murder	51	7	171	229
Attempted murder	52	—	142	194
Manslaughter	12	—	19	31
Total	115	7	332	454
Sexual assault	10 651	3 325	3 781	17 757
Kidnapping/abduction	353	55	195	603
Robbery				
Armed robbery	3 757	204	1 687	5 648
Unarmed robbery	6 339	521	2 074	8 934
Total	10 096	725	3 761	14 582
Blackmail/extortion	295	69	109	473
Unlawful entry with intent				
Involving the taking of property	137 069	2 811	12 799	152 679
Other	56 735	1 384	6 088	64 207
Total	193 804	4 195	18 887	216 886
Motor vehicle theft	47 306	1 761	5 669	54 736
Other theft	380 736	13 502	66 931	461 169

— nil or rounded to zero (including null cells)

(a) Depending on the type of crime, a victim may be a person, a premises, an organisation or a motor vehicle.

(b) Classified according to Australian and New Zealand Standard Offence Classification (ANZSOC) 2011 (1234.0).

(c) Includes unknown outcomes of investigation.

Source: *Recorded Crime – Victims, Australia (4510.0)*.

Offenders proceeded against by police

Data collected by the ABS on offenders provide a measure of the number of alleged offenders who come into contact with the criminal justice system at the ‘investigation and charging’ stage. Following the recording of a crime, as reported by a victim or detected by police, the criminal incident moves to an investigation phase where decisions are made as to whether or not an offender will be proceeded against by police.

The ABS Recorded Crime – Offenders Collection produces statistics about alleged offenders aged 10 years and over who were proceeded against by police during a financial year for all states and territories.

There were a total of 375,259 alleged offenders aged 10 years or more proceeded against by police during 2009–10 in Australia.

The most common principal offences for offenders were: Acts intended to cause injury (372 offenders per 100,000 people aged 10 years or more), Public order offences (364 offenders per 100,000 people aged 10 years or more) and Theft (327 offenders per 100,000 people aged 10 years or more) (graph 13.7).

The rate of offending for young people aged 15–19 years was the highest for any five-year age group, with 5,840 offenders per 100,000 people

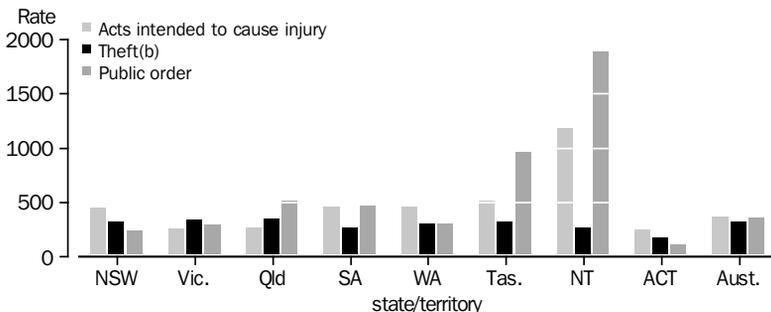
aged 15–19 years, compared with an overall rate of 1,940 offenders per 100,000 people aged 10 years or more. From the peak at age 15–19, offender rates decreased in a fairly consistent manner as the offender’s age increased (graph 13.8).

Drug offences

The traffic in, and abuse of, illicit drugs results in significant social and financial costs to both individuals and the community. To minimise the harm associated with illicit drug activity, there is close co-operation between the Australian Government, the state and territory governments, the various police services and other law enforcement agencies. Included in these agencies is the Australian Customs and Border Protection Service which has, among other things, responsibility for the enforcement of laws controlling the import and export of illicit drugs. These agencies direct particular attention to monitoring the various types and forms of illicit drugs and identifying emerging patterns of use through the analysis of law enforcement data on illicit drug seizures and arrests.

In 2009–10, by far the largest category of drug arrests involved cannabis offences, with 57,170 arrests, or 67% of the national total. The next largest category of arrests involved amphetamine offences, with 13,982 arrests, or 16% of the national total (table 13.9).

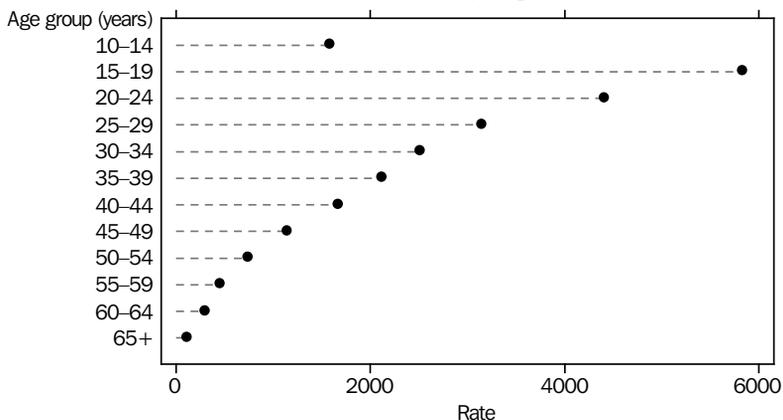
13.7 OFFENDER RATE(a), Selected principal offence by states and territories



(a) Rate per 100,000 population aged 10 years and over.
 (b) Includes related offences.

Source: Recorded Crime – Offenders, 2009–10 (4519.0).

13.8 OFFENDER RATE(a), Age



(a) Rate per 100,000 population.

Source: *Recorded Crime – Offenders (4519.0)*.

13.9 DRUG ARRESTS—2009–10(a)

Drug type	no.
Cannabis	57 170
Heroin and other opioids	2 767
Amphetamine-type stimulants	13 982
Cocaine	1 244
Hallucinogens	512
Steroids	314
Other and unknown	9 263
Total	85 252

(a) Includes arrests where consumer/provider information was not recorded.

Source: *Australian Crime Commission, Australian Illicit Drug Report 2009–10*.

Courts

A hierarchy of courts and tribunals operate within each state and territory, with the High Court being the highest court in the Australian judicial system (diagram 13.10).

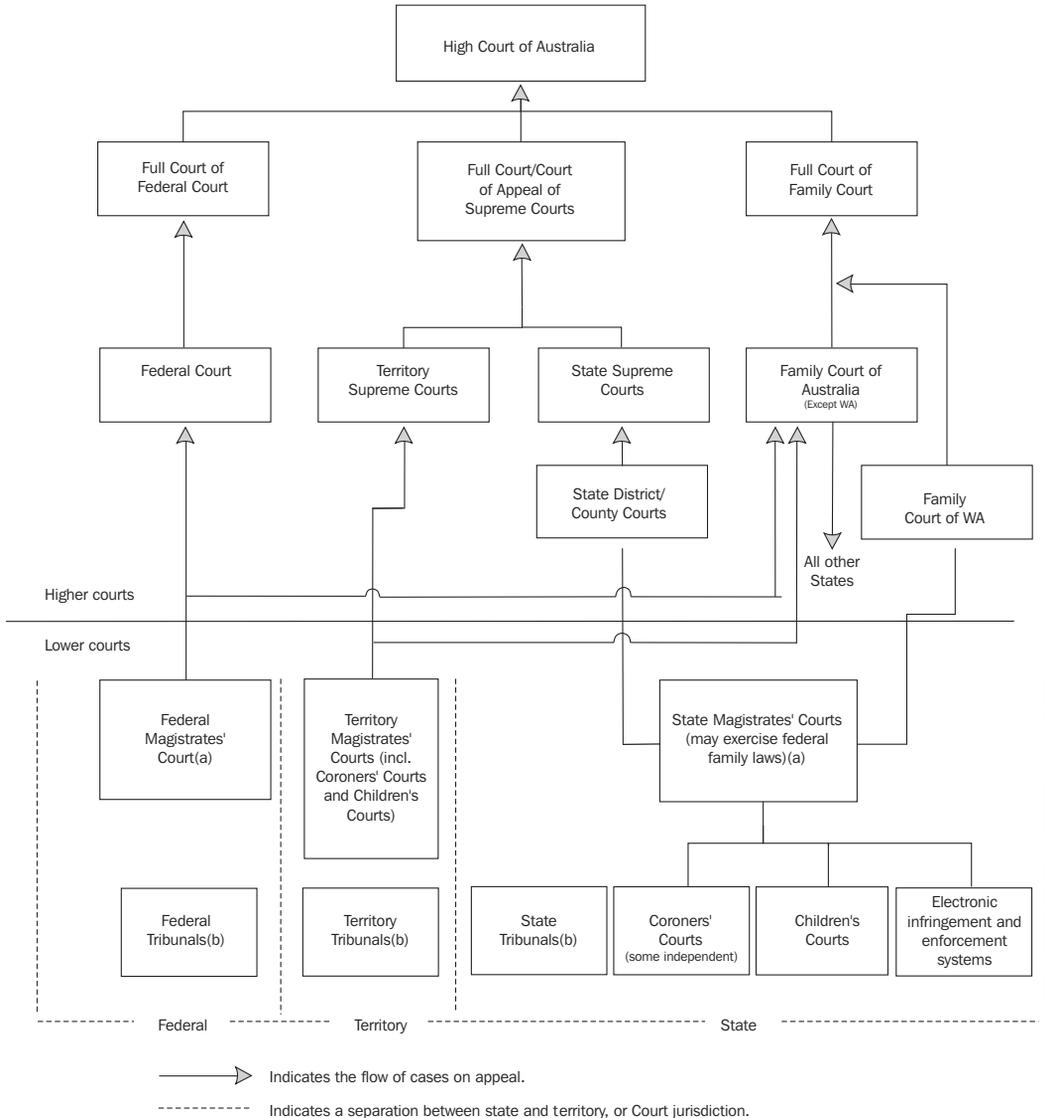
The majority of courts handle matters that are criminal or civil in nature, while tribunals provide a less costly alternative for progressing some civil and administrative matters outside the formality of a court. A criminal matter generally arises where a charge has been laid either by police or some other prosecuting authority on the basis

of a breach of criminal law. A civil matter occurs where there is a dispute between two or more individuals or organisations, where one party seeks legal remedy for an injury or loss from the other party, which is alleged to be liable.

The majority of less serious matters are heard before magistrates and more serious matters are heard before judges. For criminal matters, the seriousness is often determined by the nature of the alleged offence. In a civil context, seriousness is generally determined according to the compensation being sought. A court or tribunal's ability to deal with a civil, criminal or other matter will depend on the state or territory's legislation or jurisdiction applicable to that particular level of court.

The hierarchy of courts also applies to appeal matters. Where grounds for appeal exist, the appeal process is available in both criminal and civil matters. Appeals resulting from civil tribunal decisions may be referred to the Magistrates', District/County, Supreme or Commonwealth Courts, depending on the jurisdiction and the rights of appeal. Criminal appeals resulting from the Magistrates' Court can be appealed at the District/County, Supreme or Commonwealth Court level in the first instance. The High Court of Australia is the highest court of appeal for both criminal and civil cases.

13.10 HIERARCHY OF COURTS



(a) In some jurisdictions, appeals from lower courts or district/county courts may go directly to the full court or court of appeal at the supreme/federal level; appeals from the Federal Magistrates' Court can also be heard by a single judge exercising the Federal/Family Courts' appellate jurisdiction.

(b) Appeals from federal, state and territory tribunals may go to any higher court in their jurisdiction.

Source: Steering Committee for the Review of Government Service Provision, Report on Government Services 2011.

Criminal courts

A system of courts for the hearing of criminal matters exists in all Australian states and territories. Once charges are laid by police, the court will hear evidence from both prosecution and defence, and will make a decision as to whether or not the defendant is guilty. In cases where the defendant is found guilty, the court may also record a conviction and impose a penalty.

All states and territories have a Supreme Court that can deal with any criminal matter. The larger jurisdictions also have an intermediate level of court, known as the District or County Court, which deals with the majority of serious offences. The Supreme Courts and Intermediate Courts are collectively referred to as the Higher Courts. All defendants that are dealt with by the Higher Courts have an automatic entitlement to a trial before a judge and jury. In some jurisdictions, the defendant may elect to have the matter heard before a judge alone. Offences that must be heard before a judge and jury are known as indictable offences. These include offences such as murder, manslaughter and drug importation as well as serious sexual offences, robberies and assaults.

The lowest level of criminal court is the Magistrates' Court, also known as the Court of Summary Jurisdiction, Local Court or Court of Petty Sessions. The majority of criminal cases are heard in these courts. Cases heard in Magistrates' Courts do not involve a jury, and a magistrate determines the guilt or innocence of the defendant. This is known as a summary proceeding. More serious offences are dealt with by the higher court levels.

Each state and territory also has a Children's Court to deal with offences alleged to have been committed by children or juveniles. In all states and territories, children under 10 years of age cannot be charged with a criminal offence. The maximum age that defendants are considered to be a child or juvenile is under the age of 18 years at the time an offence was committed in all states and territories, except in Queensland. Defendants in Queensland are deemed an adult at 17 years of age or over at the time an offence was committed. In the main, these courts deal with summary proceedings. However, in some jurisdictions they have the power to also hear indictable matters.

A defendant proven guilty in a criminal matter is entitled to appeal against the conviction or against the severity of the penalty imposed. Under some circumstances, the prosecution is also entitled to appeal against the leniency of the penalty. The states and territories differ in the way in which they manage appeals. Some appeals from Magistrates' Courts may be heard before the Intermediate Courts. In other jurisdictions, the Supreme Court may hear these appeals. In most jurisdictions, an appeal court or Court of Criminal Appeal may be constituted to hear appeals from the Supreme or Intermediate Courts, with the highest court of appeal for all jurisdictions being the High Court of Australia.

National criminal courts statistics

The ABS Criminal Courts Collection produces national statistics about defendants dealt with by the criminal jurisdictions of the Higher (Supreme and Intermediate), Magistrates' and Children's Courts of Australia for a financial year. The statistics provide a profile of the characteristics of finalised defendants, as well as data about the offences for which they have been charged, their guilt or innocence, and sentence outcomes for those proven guilty.

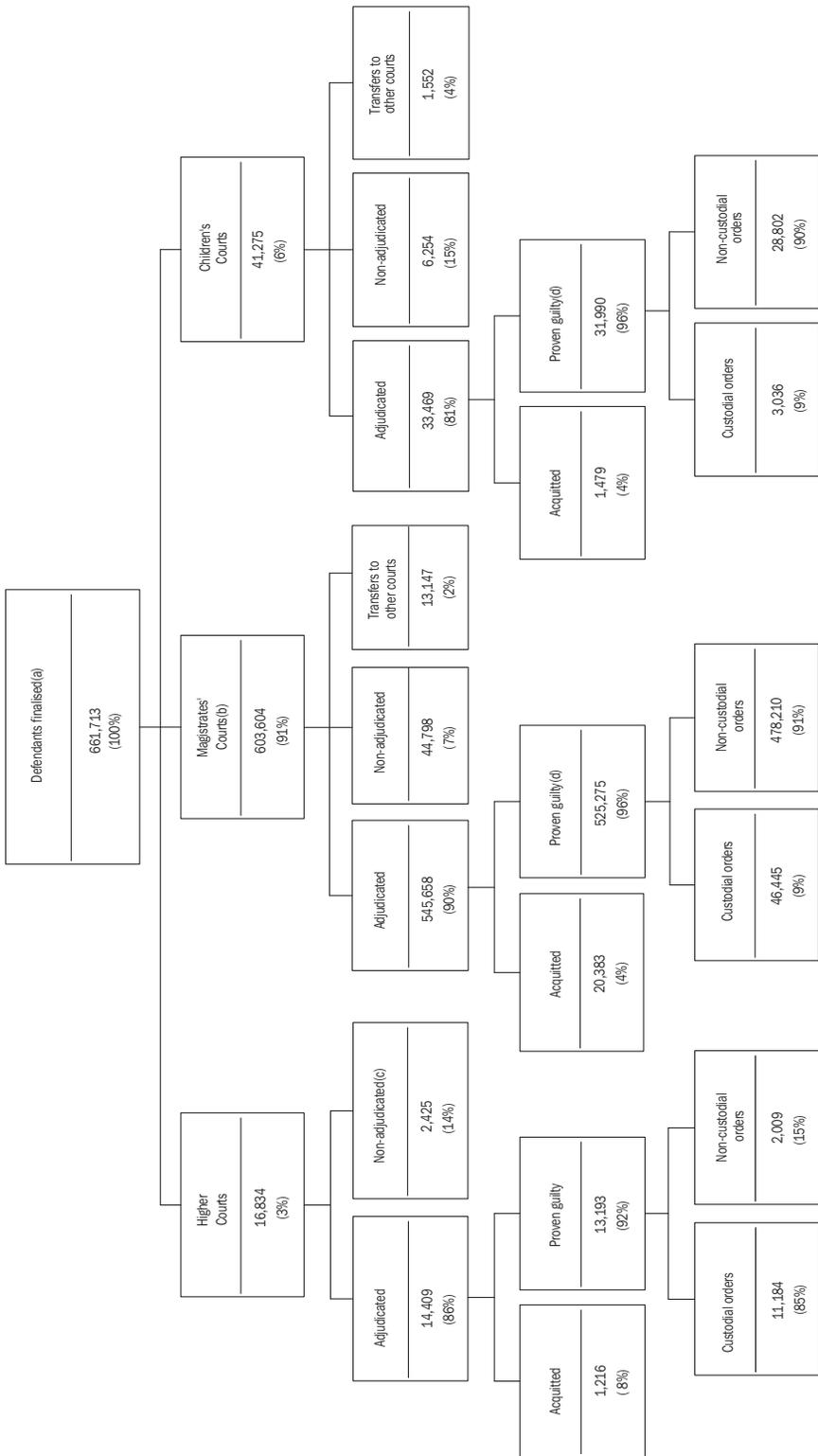
Criminal courts defendant summary characteristics

Diagram 13.11 presents summary characteristics of defendants dealt with by the Higher, Magistrates' and Children's Courts of Australia. 'Finalised defendant' refers to all charges against a person or organisation having been formally completed so that the defendant ceases to be an item of work to be dealt with by a particular court.

In 2009–10, there were 661,713 defendants finalised in the Higher, Magistrates' and Children's Courts. The total comprised: 91% or 603,604 finalised defendants in the Magistrates' Courts; 6% or 41,275 defendants in the Children's Courts; and 3% or 16,834 defendants in the Higher Courts.

Of those defendants finalised in the Higher Courts, 86% (14,409 defendants) were adjudicated, meaning that the court made a determination of the defendant's guilt or innocence of the offence(s) with which they were charged. The remaining 14% (2,425 defendants) were finalised by non-adjudicated methods, in

13.11 CRIMINAL COURT FINALISATIONS—2009–10



(a) Defendants will be counted twice where they are transferred from one of the three court levels and then finalised in another within the same reference period.

(b) Includes defendants with an unknown method of finalisation.

(c) Includes defendants transferred to other courts.

(d) Includes defendants for whom a principal sentence is unknown.

Source: Criminal Courts, Australia, 2009–10 (451.3.0).

which there is no determination of the charges by the court. This includes outcomes such as all charges being withdrawn by the prosecution.

In the Magistrates' Courts, 90% (545,658 finalised defendants) were adjudicated, while 7% (44,798 defendants) were finalised by non-adjudicated methods.

In the Children's Courts, 81% (33,469 finalised defendants) were adjudicated and 15% (6,254 defendants) were finalised by non-adjudicated methods.

Higher courts

Adjudicated defendants – principal offence

An adjudicated defendant is either a person or an organisation finalised via a guilty plea or a decision by the court as to their guilt or innocence of the final charges laid. Defendants can also be finalised by non-adjudicated methods such as transfer to other court levels or withdrawal by the prosecution.

In 2009–10, defendants were adjudicated in the Higher Courts for principal offences that fall within the following divisions of the Australian

Standard Offence Classification (ASOC 2008): Acts intended to cause injury (22%); Illicit drug offences (20%); Sexual assault (16%); Robbery and extortion (11%); and Unlawful entry with intent (8%). Over three-quarters of defendants adjudicated (77% or 11,145 defendants) by the Higher Courts had a principal offence in one of these five categories (table 13.12).

Nationally, 92% (13,193) of adjudicated defendants were found guilty or pleaded guilty in the Higher Courts, while 8% (1,216) were acquitted.

Defendants were most likely to be acquitted for the principal offences of Sexual assault (24%) and Homicide (19%).

All defendants charged with Traffic and vehicle regulatory offences (100%) and almost all defendants charged with Illicit drug offences (99%), Unlawful entry with intent and Prohibited and regulated weapons and explosives offences (both 96%) were proven guilty in the Higher Courts during 2009–10 (table 13.12).

In the Higher Courts, the most prevalent principal offences for both male and female adjudicated defendants were Acts intended to

13.12 DEFENDANTS ADJUDICATED IN HIGHER COURTS, Principal offence—2009–10

ASOC Division(a)	Acquitted	Guilty finding		Total(b)	Total adjudicated
		by court	by defendant		
Homicide and related offences	85	121	231	367	452
Acts intended to cause injury	291	298	2 556	2 879	3 170
Sexual assault and related offences	557	349	1 390	1 746	2 303
Dangerous or negligent acts endangering persons	18	44	403	454	472
Abduction, harassment and other offences against the person	20	23	212	237	257
Robbery, extortion and related offences	57	123	1 448	1 584	1 641
Unlawful entry with intent	45	53	1 092	1 159	1 204
Theft and related offences	10	20	342	364	374
Fraud, deception and related offences	25	41	584	631	656
Illicit drug offences	42	224	2 540	2 785	2 827
Prohibited and regulated weapons and explosives offences	7	13	162	177	184
Property damage and environmental pollution	26	23	249	276	302
Public order offences	8	3	93	96	104
Traffic and vehicle regulatory offences	—	—	18	18	18
Offences against justice procedures, government security and government operations	19	40	303	346	365
Miscellaneous offences	6	9	64	74	80
Total(c)	1 216	1 384	11 697	13 193	14 409

— nil or rounded to zero (including null cells)

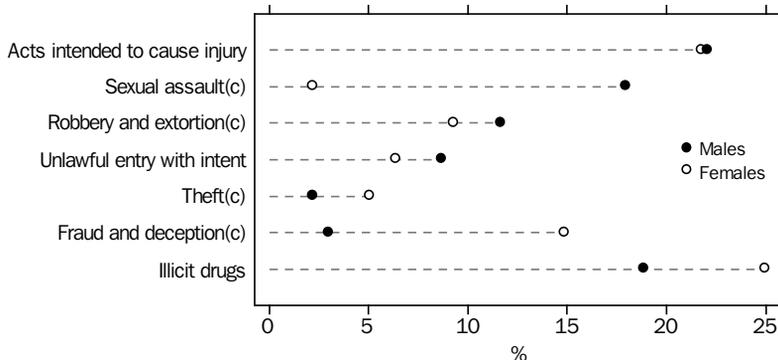
(a) Classified according to Australian Standard Offence Classification (ASOC) 2008 (1234.0).

(b) Total proven guilty, includes defendants with charges proven, not further defined.

(c) Includes defendants for which offence data are missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia* (4513.0).

13.13 DEFENDANTS ADJUDICATED IN HIGHER COURTS, Selected principal offences(a)(b) by sex— 2009–10



(a) Classified according to Australian Standard Offence Classification (ASOC) 2008.

(b) Includes defendants for whom offence data are missing or a principal offence could not be determined.

(c) Includes related offences.

Source: *Criminal Courts, Australia (4513.0)*.

cause injury (22% of males and females) and Illicit drugs (19% of males and 25% of females). Proportionally more females were adjudicated for the principal offence of Fraud and deception (15%) than were males (3%). In contrast, there were proportionally more males than females with a principal offence of Sexual assault (18% and 2% respectively) (graph 13.13).

Defendants proven guilty – principal sentence

Of the defendants proven guilty in the Higher Courts, 85% received custodial orders (i.e. custody in a correctional institution or the community or fully suspended sentences) (table 13.14).

Defendants proven guilty in the Higher Courts for Homicide, Robbery and extortion, and Sexual assault incurred the highest proportion of custodial orders (98%, 92% and 90% respectively). Defendants proven guilty for Traffic and vehicle regulatory offences and Public order offences incurred the highest proportion of non-custodial sentences (63% and 59% respectively).

Magistrates' courts

Adjudicated defendants – principal offence

Traffic and vehicle regulatory offences accounted for the greatest proportion (44% or 240,891) of defendants adjudicated in the Magistrates' Courts in 2009–10. After Traffic and vehicle regulatory

offences, the largest proportion of defendants were charged with Public order offences (11%), Acts intended to cause injury (9%), Dangerous or negligent acts endangering persons (7%), Offences against justice procedures, government security and government operations, and Theft (both 6%).

Nationally, 96% (525,274) of adjudicated defendants were proven guilty in the Magistrates' Courts, while 4% (20,383) were acquitted.

Defendants adjudicated in the Magistrates' Courts were most likely to be acquitted for Homicide (28%), Robbery and extortion (18%) and Sexual assault (16%).

The principal offences with the highest proportion of defendants proven guilty in the Magistrates' Courts were Illicit drug offences (99%), Prohibited and regulated weapons and explosives offences (99%) and Dangerous or negligent acts endangering persons (98%) (table 13.15).

In the Magistrates' Courts, Traffic and vehicle regulatory offences accounted for 43% of adjudicated male defendants and half (50%) of all female adjudicated defendants (graph 13.16). Public order offences accounted for 12% of male and 8% of female adjudicated defendants, while Acts intended to cause injury accounted for 9% of male and 7% of female adjudicated defendants. Theft and Fraud and deception offences both had higher proportions of female adjudicated defendants than male adjudicated defendants.

13.14 DEFENDANTS PROVEN GUILTY IN HIGHER COURTS(a), Principal offence and sentence—2009–10

ASOC Division(b)	Custodial orders	Non-custodial orders	Total(c)
Homicide and related offences	361	6	367
Acts intended to cause injury	2 451	426	2 877
Sexual assault and related offences	1 571	174	1 745
Dangerous or negligent acts endangering persons	347	107	454
Abduction, harassment and other offences against the person	179	58	237
Robbery, extortion and related offences	1 466	119	1 585
Unlawful entry with intent	933	226	1 159
Theft and related offences	253	111	364
Fraud, deception and related offences	555	76	631
Illicit drug offences	2 379	406	2 785
Prohibited and regulated weapons and explosives offences	142	35	177
Property damage and environmental pollution	190	87	277
Public order offences	40	57	97
Traffic and vehicle regulatory offences	7	12	19
Offences against justice procedures, government security and government operations	272	74	346
Miscellaneous offences	36	37	73
All offence categories(d)	11 182	2 011	13 193

(a) Includes organisations; includes defendants with unknown age and/or sex.

(b) Classified according to Australian Standard Offence Classification (ASOC) 2008 (1234.0).

(c) Includes defendants for which a principal sentence is unknown.

(d) Includes defendants for which offence data are missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia (4513.0)*.

13.15 DEFENDANTS ADJUDICATED IN MAGISTRATES' COURTS, Principal offence—2009–10

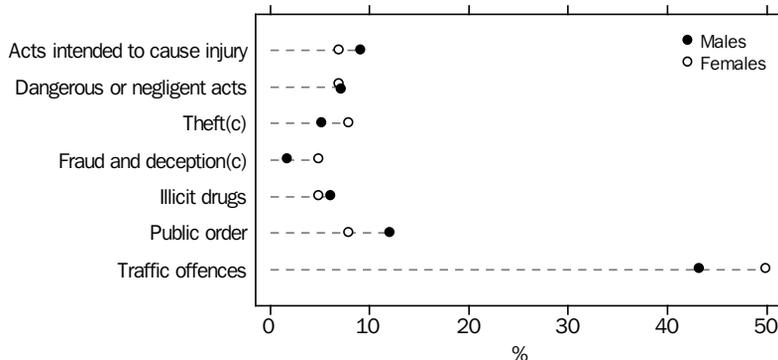
ASOC Division(a)	Acquitted	Proven guilty	Total adjudicated
Homicide and related offences	24	62	86
Acts intended to cause injury	4 465	43 330	47 795
Sexual assault and related offences	202	1 096	1 298
Dangerous or negligent acts endangering persons	562	36 335	36 897
Abduction, harassment and other offences against the person	109	2 125	2 234
Robbery, extortion and related offences	41	181	222
Unlawful entry with intent	234	6 584	6 818
Theft and related offences	1 061	33 681	34 742
Fraud, deception and related offences	319	12 838	13 157
Illicit drug offences	341	32 127	32 468
Prohibited and regulated weapons and explosives offences	94	7 220	7 314
Property damage and environmental pollution	466	13 597	14 063
Public order offences	6 616	55 216	61 832
Traffic and vehicle regulatory offences	4 392	236 499	240 891
Offences against justice procedures, government security and government operations	1 070	33 751	34 821
Miscellaneous offences	354	10 494	10 848
Total(b)	20 383	525 274	545 657

(a) Classified according to Australian Standard Offence Classification (ASOC) 2008 (1234.0).

(b) Includes defendants for which offence data are missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia (4513.0)*.

**13.16 DEFENDANTS ADJUDICATED IN MAGISTRATES' COURTS,
Principal offences(a)(b) by sex—2009–10**



(a) Classified according to Australian Standard Offence Classification (ASOC) 2008.

(b) Includes defendants for whom offence data are missing or a principal offence could not be determined.

(c) Includes related offences.

Source: *Criminal Courts, Australia (4513.0)*.

Theft offences comprised 8% of female and 5% of male adjudicated defendants, while Fraud and deception offences comprised 5% of female and 2% of male adjudicated defendants.

Defendants proven guilty – principal sentence

In 2009–10, defendants proven guilty in the Magistrates' Courts predominantly received non-custodial orders (e.g. community supervision, monetary orders, good behaviour bonds) (91%). The exception was for Robbery and extortion, where 63% of defendants proven guilty received a custodial sentence (table 13.17).

Children's courts

Adjudicated defendants – principal offence

The main offences that defendants were adjudicated for in the Children's Courts during 2009–10 were Theft (20%), Acts intended to cause injury (19%); Unlawful entry with intent (13%); Traffic and vehicle regulatory (11%) and Public order offences (10%).

Nationally, 96% (31,991) of adjudicated defendants were proven guilty in the Children's Courts and 4% (1,479) were acquitted. Higher

proportions of acquittals occurred for defendants charged with Homicide (21%), Miscellaneous offences (13%) and Sexual assault (12%).

The principal offences with the highest proportion of defendants proven guilty were Dangerous or negligent acts endangering persons and Traffic and vehicle regulatory offences (both 99%), Prohibited and regulated weapons and explosives offences (98%), Fraud and deception and Illicit drug offences (both 97%) (table 13.18).

There was variation for some offence types in the proportion of male and female defendants adjudicated in the Children's Courts (graph 13.19). Adjudicated males had higher proportions than adjudicated females for the following offences: Unlawful entry with intent (15% of males, 6% of females), Dangerous or negligent acts endangering persons (6% of males, 2% of females) and Traffic offences (11% of males, 10% of females).

Proportionally, there were more female defendants charged for the following offences than male defendants: Acts intended to cause injury (25% of adjudicated females, 18% of males) and Theft offences (29% of adjudicated females, 17% of males).

**13.17 DEFENDANTS PROVEN GUILTY IN MAGISTRATES' COURTS(a),
Principal offence and sentence—2009–10**

<i>ASOC Division(b)</i>	<i>Custodial orders</i>	<i>Non-custodial orders</i>	<i>Total(c)</i>
Homicide and related offences	17	43	62
Acts intended to cause injury	11 967	31 296	43 330
Sexual assault and related offences	487	589	1 096
Dangerous or negligent acts endangering persons	3 777	32 537	36 335
Abduction, harassment and other offences against the person	426	1 697	2 125
Robbery, extortion and related offences	116	56	184
Unlawful entry with intent	3 115	3 425	6 584
Theft and related offences	4 359	29 246	33,681
Fraud, deception and related offences	2 981	9 831	12 838
Illicit drug offences	2 499	29 588	32 127
Prohibited and regulated weapons and explosives offences	881	6 325	7 220
Property damage and environmental pollution	1 016	12 554	13 597
Public order offences	1 069	54 109	55 216
Traffic and vehicle regulatory offences	10 662	225 711	236 499
Offences against justice procedures, government security and government operations	2 886	30 799	33 751
Miscellaneous offences	180	10 296	10 494
All offence categories(d)	46 445	478 210	525 275

(a) Includes organisations; includes defendants with unknown age and/or sex.

(b) Classified according to Australian Standard Offence Classification (ASOC) 2008 (1234.0).

(c) Includes defendants for which a principal sentence is unknown.

(d) Includes defendants for which offence data are missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia (4513.0)*.

13.18 DEFENDANTS ADJUDICATED IN CHILDREN'S COURTS, Principal offence—2009–10

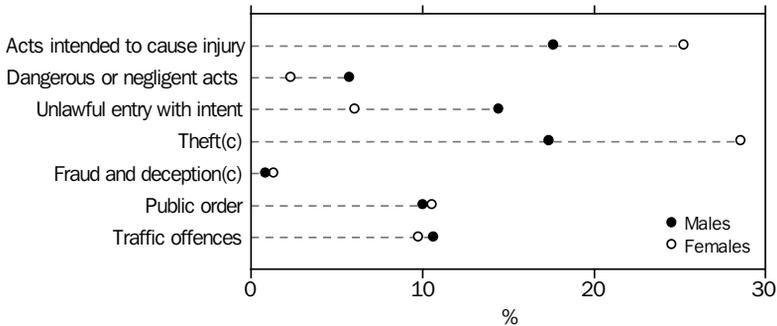
<i>ASOC Division(a)</i>	<i>Acquitted</i>	<i>Proven guilty</i>	<i>Total adjudicated</i>
Homicide and related offences	3	11	14
Acts intended to cause injury	406	6 047	6 453
Sexual assault and related offences	44	310	354
Dangerous or negligent acts endangering persons	21	1 698	1 719
Abduction, harassment and other offences against the person	19	219	238
Robbery, extortion and related offences	79	1 188	1 267
Unlawful entry with intent	136	4 141	4 277
Theft and related offences	266	6 320	6 586
Fraud, deception and related offences	10	323	333
Illicit drug offences	22	799	821
Prohibited and regulated weapons and explosives offences	13	522	535
Property damage and environmental pollution	124	2 460	2 584
Public order offences	209	3 219	3 428
Traffic and vehicle regulatory offences	39	3 488	3 527
Offences against justice procedures, government security and government operations	47	923	970
Miscellaneous offences	41	279	320
Total(b)	1 479	31 991	33 470

(a) Classified according to Australian Standard Offence Classification (ASOC) 2008 (1234.0).

(b) Includes defendants for whom offence data are missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia (4513.0)*.

**13.19 DEFENDANTS ADJUDICATED IN CHILDREN'S COURTS,
Principal offences(a)(b) by sex—2009–10**



(a) Classified according to Australian Standard Offence Classification (ASOC) 2008.
 (b) Includes defendants for whom offence data are missing or a principal offence could not be determined.
 (c) Includes related offences.

Source: *Criminal Courts, Australia (4513.0)*.

Defendants proven guilty – principal sentence

In 2009–10, defendants proven guilty in the Children’s Courts predominantly received non-custodial orders (e.g. community supervision, monetary orders, good behaviour bonds). The offences with the highest proportion of custodial orders were Robbery (34%) and Homicide (33%) (table 13.20).

Federal defendants

The data presented for federal defendants includes information for defendants charged with federal offences that were dealt with by the criminal jurisdiction of the Higher, Magistrates and Children’s Courts of Australia. These data are available for all states and territories except Tasmania (which are collectively referred to as Selected states and territories).

In 2009–10, there were 14,007 defendants finalised in Australia’s criminal courts with at least one federal offence for the Selected states and territories. Of these, 765 were finalised in the Higher Courts, 13,028 in the Magistrates’ Courts and 214 in the Children’s Courts.

The offence categories referred to relate to the defendant’s most serious offence, known as the ‘principal federal offence’. Only offences enacted under Commonwealth legislation are considered in scope for data about federal defendants.

About one-third (34%) of defendants finalised across all court levels had a principal federal offence of Fraud and deception, followed by Offences against justice procedures (26%) and Abduction and harassment (12%) (graph 13.21).

Of the defendants heard in the Higher Courts, almost three-quarters had a principal federal offence in the following three ASOC 2008 Divisions: Illicit drug offences (26%), Fraud and deception (25%) and Sexual assault (21%).

For the Magistrates’ Court, almost three-quarters had a principal federal offence in the following three ASOC 2008 Divisions: Fraud and deception (35%), Offences against justice procedures (27%) and Abduction and harassment (12%).

More than three-quarters of defendants in the Children’s court had a principal federal offence in the following four ASOC 2008 Divisions: Abduction and harassment (41%), Offences against justice procedures (16%), Public order offences (11%) and Theft (11%).

13.20 DEFENDANTS PROVEN GUILTY IN CHILDREN'S COURTS(a), Principal offence and sentence—2009–10

ASOC Division(b)	Custodial orders	Non-custodial orders	Total(c)
Homicide and related offences	3	6	9
Acts intended to cause injury	1 051	4 975	6 047
Sexual assault and related offences	68	222	310
Dangerous or negligent acts endangering persons	186	1,510	1 696
Abduction, harassment and other offences against the person	42	177	219
Robbery, extortion and related offences	401	785	1 189
Unlawful entry with intent	699	3,434	4 141
Theft and related offences	267	6 022	6 320
Fraud, deception and related offences	15	308	323
Illicit drug offences	37	756	799
Prohibited and regulated weapons and explosives offences	45	474	522
Property damage and environmental pollution	117	2 332	2 460
Public order offences	44	3 154	3 219
Traffic and vehicle regulatory offences	22	3 453	3 488
Offences against justice procedures, government security and government operations	27	889	923
Miscellaneous offences	—	275	278
All offence categories(d)	3 032	28 805	31 987

— nil or rounded to zero (including null cells)

(a) Includes defendants with unknown age and/or sex.

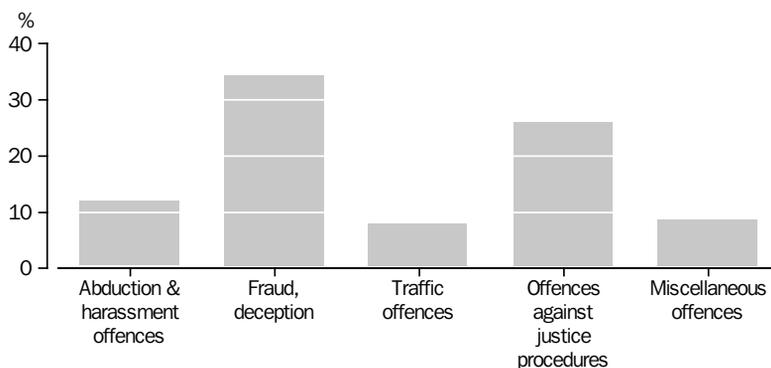
(b) Classified according to Australian Standard Offence Classification (ASOC) 2008 (1234.0).

(c) Includes defendants for whom a principal sentence is unknown.

(d) Includes defendants for whom offence data are missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia* (4513.0).

13.21 FEDERAL DEFENDANTS – ALL COURTS, Selected principal federal offences



Source: *Federal Defendants, Selected States and Territories* (4515.0).

Defendant sentence length

The length of sentence that is handed down to a defendant who has pleaded guilty to an offence or who has been found guilty of an offence is of interest to the community. The data for sentence length is available for all states and territories excluding Tasmania (which are collectively referred to as Selected states and territories).

A defendant can receive a single sentence for a single offence proven guilty, a single sentence for multiple offences proven guilty, multiple sentences for multiple offences proven guilty and/or multiple sentences for a single offence proven guilty.

In 2009–10, a total of 10,026 defendants were sentenced to a custodial order in Australia's Higher Courts for the selected states and territories. The majority of these defendants (53%) had a sentence imposed of less than 2 years and a further 34% had a sentence imposed of between 2 and 5 years. Less than 1% (61 defendants) were sentenced to a custodial order of 20 years or more.

Five offence types accounted for 79% of defendants sentenced to a custodial order: Illicit drug offences (21%), Acts intended to cause injury (19%), Robbery and extortion (14%), Sexual assault (13%) and Unlawful entry with intent (12%).

The sentence length for these offence types varied (graph 13.22). More than half of the defendants with a principal proven offence of Unlawful entry with intent (61%), Acts intended to cause injury (58%) or Illicit drug offences (53%) had a sentence of less than 2 years, while for Robbery and extortion, the majority of defendants had a sentence of 2 to 5 years (53%).

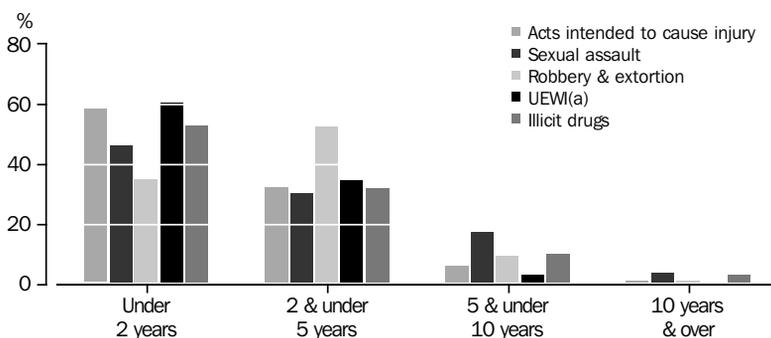
Corrective services and juvenile justice supervision

Corrective services agencies are responsible for administering penalties handed down by criminal courts that require some form of supervision or custody of an adult offender. This may include imprisonment on either a full-time or part-time basis in a custodial facility, community service and other forms of supervised work, home detention, or good behaviour bonds under supervision. Most people for whom corrective services have responsibility have received a sentence from a criminal court. Corrective service agencies may also be responsible for people prior to hearing or sentencing. Unsentenced persons may be held on remand in correctional facilities or be subject to supervised bail or similar community-based court orders.

All states and territories operate adult prisons and other types of corrective services. As at 30 June 2010, across Australia, corrective services operated 120 custodial facilities nationally, comprising 88 government-operated prisons, eight privately-operated prisons, two transition centres, eight periodic detention centres and 14 '24-hour' court-cell complexes (holding prisoners under the responsibility of corrective services in New South Wales).

Prior to March 2009, adult persons sentenced to full-time custody by the Australian Capital Territory were usually held in New South Wales prisons, while adult unsentenced prisoners, periodic detainees, and people under the supervision of community corrections (e.g. probation and parole) were managed locally.

13.22 SENTENCE LENGTH, Selected principal proven offence



(a) Unlawful entry with intent.

Source: *Criminal Courts, Australia (4513.0)*.

From March 2009, Australian Capital Territory adult persons sentenced to full-time custody are held in the Australian Capital Territory.

The Australian Government does not operate any prisons or other corrective services, as federal offenders (persons convicted of offences under Commonwealth laws) are supervised by state and territory agencies for correctional purposes.

In all states and territories except Queensland, persons remanded or sentenced to adult custody or community-based corrections are aged 18 years and over. Persons under 18 years of age are treated as juveniles in most Australian courts and are only remanded or sentenced to custody in adult prisons in exceptional circumstances. In Queensland, adults are deemed to be aged 17 years and over.

Separate provisions exist in each state and territory for the administration of juvenile offenders who require some form of supervision or custody. Juvenile offenders are aged between 10 years (the age of criminal responsibility) and up to 18 years of age (17 in Queensland). Persons who are older than 18 years (17 in Queensland) may be held under juvenile justice supervision if they:

- committed an offence while a juvenile
- entered supervision while a juvenile and remain in that system rather than be transferred to adult corrective services, and/or
- are especially vulnerable or immature and such a measure is deemed appropriate.

People in custody

Adult prisoners

The annual National Prisoner Census, conducted on the night of 30 June, counts all people held in Australian prisons who are in the legal custody of adult corrective services, including periodic detainees in New South Wales and the Australian Capital Territory, but excluding persons held in juvenile institutions, psychiatric custody and police custody. At any given point in time, most prisoners are serving long sentences for relatively serious offences, but the flow of offenders in and out of prisons consists primarily of people serving short sentences for less serious offences.

At 30 June 2010, there were 29,700 prisoners (sentenced and unsentenced) in Australian adult prisons. This represented an imprisonment rate of 170 prisoners per 100,000 adult population. Of the total prisoner population, 92% (27,472) were men and 8% (2,228) were women.

Most (55% or 16,204) prisoners had served time in an adult prison prior to the current episode.

Unsentenced prisoners include prisoners awaiting a court hearing or trial and convicted prisoners awaiting sentencing. Unsentenced adult prisoners comprised 21% (6,367) of the total prisoner population.

The single category of offence that accounted for the largest proportion of adult prisoners was Acts intended to cause injury (20% or 5,805 prisoners).

There were 7,584 Aboriginal and Torres Strait Islander prisoners at 30 June 2010, comprising 26% of the total prisoner population. The age-standardised rate of imprisonment for Aboriginal and Torres Strait Islander prisoners was 1,892 per 100,000 adult Aboriginal and Torres Strait Islander people, 14 times more than the non-Indigenous rate (134 per 100,000 adult non-Indigenous people) (table 13.23).

The median age of for male prisoners was 33 years, and 35 years for female prisoners.

The 20–29 year age group had the highest proportion of male prisoners (35% or 9,560 men), while the corresponding age group for women was 30–39 years (36% or 796 women) (graph 13.24).

Most serious offence

At 30 June 2010, seven offence types accounted for 82% of sentenced prisoners: Acts intended to cause injury (17%), Sexual assault (13%), Unlawful entry with intent (12%), Homicide, Illicit drug offences, Robbery and extortion, and Offences against justice procedures (all 10%) (table 13.25).

There were notable differences in some of the most serious offence types for which men and women were imprisoned. Though similar proportions of male and female prisoners had Homicide as their most serious offence (10% and 11% respectively), the proportion of male prisoners was higher than that for women prisoners for Sexual assault (14% of

13.23 ADULT PRISONERS, Selected characteristics by most serious offence/charge—30 June 2010

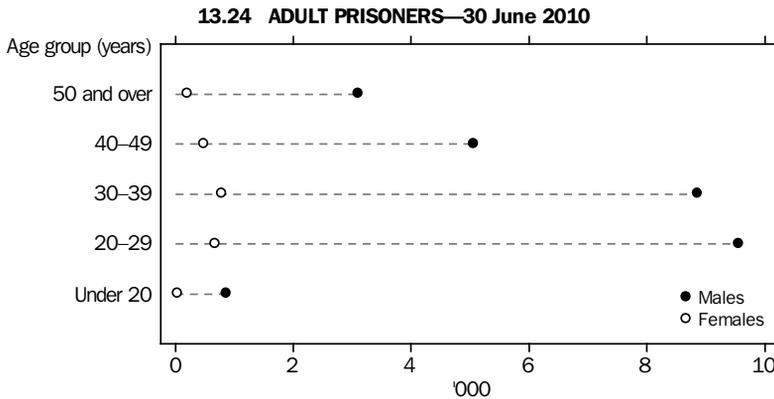
		Homicide and related offences	Acts intended to cause injury	Sexual assault and related offences	Robbery, extortion and related offences	Unlawful entry with intent	Illicit drug offences	Other offences(a)	Total
All prisoners(b)	no.	2 811	5 805	3 712	2 881	3 376	3 233	7 882	29 700
Males	no.	2 575	5 402	3 663	2 743	3 198	2 848	7 043	27 472
Females	no.	236	403	49	138	178	385	839	2 228
Aboriginal and Torres Strait Islander	no.	460	2 496	792	659	1 125	130	1 922	7 584
Non-Indigenous	no.	2 333	3 275	2 889	2 190	2 237	3 020	5 883	21 827
Unknown	no.	18	34	31	32	14	83	77	289
Median age									
Males	years	38.7	30.5	43.0	28.7	30.3	37.4	33.0	33.4
Females	years	39.2	32.4	41.0	29.3	30.8	38.7	35.0	34.6
Aboriginal and Torres Strait Islander	years	35.9	30.4	36.6	27.7	27.4	34.1	30.9	30.6
Non-Indigenous	years	39.2	30.9	44.8	29.1	31.6	37.8	33.9	34.7
Sentenced	no.	2 296	3 970	3 144	2 295	2 727	2 386	6 515	23 333
Unsentenced	no.	515	1 835	568	586	649	847	1 367	6 367
Prior imprisonment(c)	no.	1 035	3 616	1 267	1 732	2 556	1 084	4 914	16 204
No prior imprisonment(c)	no.	1 776	2 181	2 440	1 148	820	2 149	2 946	13 460

(a) Includes Australian Standard Offence Classification Divisions (ASOC) 2008, 04, 05, 08, 09 and 11–16.

(b) Includes prisoners for whom prior imprisonment is unknown.

(c) Refers to prior imprisonment under sentence.

Source: *Prisoners in Australia (4517.0)*.



Source: *Prisoners in Australia (4517.0)*.

male prisoners, 2% of female prisoners) and Robbery and extortion (10% of male prisoners, 6% of female prisoners). There were higher proportions of women prisoners than male prisoners for the following offence types: Fraud and deception (12% of women prisoners, 2% of male prisoners); and Illicit drug offences (17% of women prisoners, 10% of male prisoners) (table 13.25 and graph 13.26). However, it should be noted that there were more sentenced men than sentenced women for all offence categories.

Prisoner aggregate sentence length

Aggregate length of sentence is derived by taking into account the longest period for which a convicted prisoner may be detained as a result of a sentence or sentences imposed by a criminal court for an offence or multiple offences in a current episode.

At 30 June 2010, the average aggregate sentence length for all prisoners sentenced to a specific term was nearly 5 years (59 months), while the

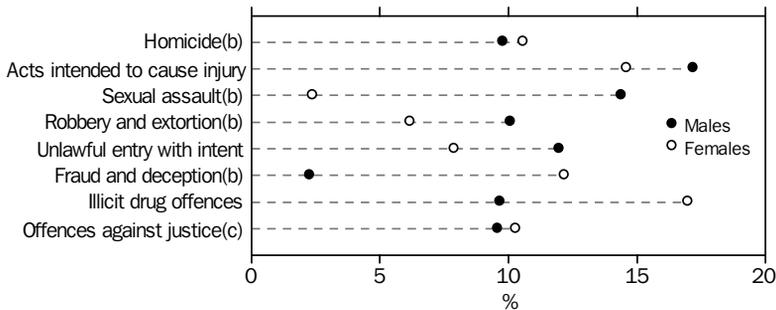
13.25 SENTENCED PRISONERS, By most serious offence—30 June 2010

	Males	Females	Persons
Homicide and related offences	2 112	184	2 296
Acts intended to cause injury	3 717	253	3 970
Sexual assault and related offences	3 102	42	3 144
Dangerous or negligent acts endangering persons	497	44	541
Abduction, harassment and other offences against the person	195	11	206
Robbery, extortion and related offences	2 188	107	2 295
Unlawful entry with intent/burglary, break and enter	2 590	137	2 727
Theft and related offences	837	160	997
Fraud, deception and related offences	489	211	700
Illicit drug offences	2 092	294	2 386
Prohibited and regulated weapons and explosives offences	138	—	138
Property damage and environmental pollution	224	19	243
Public order offences	156	12	168
Traffic and vehicle regulatory offences	1 060	63	1 123
Offences against justice procedures, government security and government operations	2 078	178	2 256
Miscellaneous offences	108	8	116
Unknown	22	3	25
Total	21 605	1 726	23 331

— nil or rounded to zero (including null cells)

Source: *Prisoners in Australia (4517.0)*.

13.26 SENTENCED PRISONERS, By selected most serious offence(a)—30 June 2010



(a) Classified according to Australian Standard Offence Classification (ASOC) 2008.

(b) Includes related offences.

(c) Includes offences against justice procedures, government security and government operations.

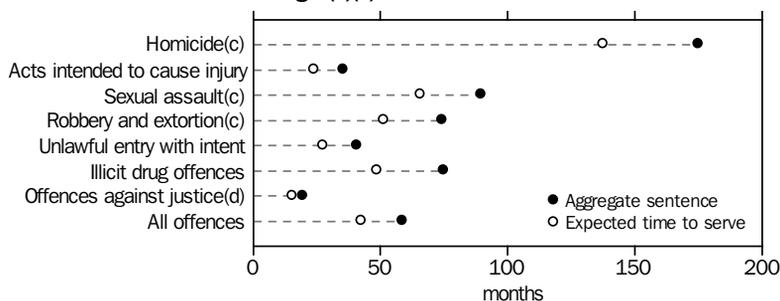
Source: *Prisoners in Australia (4517.0)*.

average expected time to serve was 42.7 months. The average aggregate sentence length excludes prisoners who receive indeterminate, life with a minimum, or periodic detention sentences, whilst the expected time to serve takes into account the earliest date of release for sentenced prisoners (graph 13.27).

Young people in detention

The Australian Institute of Health and Welfare (AIHW) collects information from each state and territory on behalf of the Australasian Juvenile Justice Administrators about the numbers and characteristics of young people under the supervision of juvenile justice agencies.

13.27 SENTENCED PRISONERS, By average sentence length(a)(b)—30 June 2010



- (a) Classified according to Australian Standard Offence Classification (ASOC) 2008.
 (b) Prisoners with indeterminate, life and periodic detention sentences are excluded from these calculations.
 (c) Includes related offences.
 (d) Includes offences against justice procedures, government security and government operations.

Source: *Prisoners in Australia (4517.0)*.

Excluding Western Australia and Northern Territory, in 2009–10, 5,017 young people were held in juvenile detention. Most detainees (84%) were male. Just over a third of the young detainee population was identified as Aboriginal and Torres Strait Islander (36%). Note that a young person may have been in custody more than once during the reference period (table 13.28).

13.28 YOUNG PERSONS IN DETENTION, By combined selected states and territories—2009–10

<i>Young persons in detention(a)</i>	no.
All young people	5 017
Males	4 227
Females	784
Indigenous status	
Aboriginal and Torres Strait Islander	1 787
Non-Indigenous	3 124
Unknown	106
Sentence status(b)	
Sentenced	1 457
Unsentenced	4 432
Both sentenced and unsentenced	872

(a) Western Australia and the Northern Territory did not supply data for 2009–10.

(b) Number of sentenced and unsentenced young people will not sum to total as some young people would have been both unsentenced and sentenced during the year.

Source: AIHW, *Juvenile justice in Australia 2009–10*, *Juvenile justice series no. 8. JUV8*.

Community-based corrections

Community-based corrections orders are non-custodial orders issued to offenders by criminal courts. Both adult and young offenders can be issued with community corrections orders and these are administered by agencies with the authority to serve these orders.

Adult community-based orders

Adult community-based orders are served under the authority of adult corrective services agencies and include restricted movement, reparations (fine option and community service) and supervision orders (parole, bail and sentenced probation). Quarterly data are sourced by the ABS from state and territory corrective services agencies.

On average, there were 54,609 people in adult community-based corrections in Australia during the June quarter 2011. This equated to a rate of 314 people per 100,000 adult persons. The most common community-based corrections orders issued were sentenced probation (32,881 people), followed by parole (12,024 people) and community service (9,302 people) (table 13.29).

13.29 ADULT PERSONS IN COMMUNITY-BASED SUPERVISION(a)—June quarter 2011

Type of order	no.
Restricted movement	579
Reparation	
Fine option	3 610
Community service	9 302
Supervision (compliance)	
Parole	12 024
Bail	1 457
Sentenced probation	32 881
Total	54 609

- (a) If a person has more than one type of order, they are counted against each order. If a person has more than one order of the same type, they are counted only once in the order type.

Source: *Corrective Services, Australia (4512.0)*.

13.30 YOUNG PERSONS IN COMMUNITY-BASED SUPERVISION—2009–10(a)(b)

Type of order	no.
Supervised or conditional bail and other unsentenced	2 764
Probation and similar	8 890
Suspended detention	1 042
Home detention	6
Parole or supervised release	458
Other sentenced orders(c)	426
Other orders n.e.c.(d)	26
Multiple order types	2 698
Total	10 914

- (a) Western Australia and the Northern Territory did not supply data for 2009–10.
- (b) Number of young people may not sum to total as young people may have been under supervision in relation to multiple types of orders during the same day or year.
- (c) Other sentenced orders include other sentences requiring juvenile justice supervision.
- (d) Other orders n.e.c. includes other types of legal arrangements not elsewhere classified.

Source: AIHW, *Juvenile justice in Australia 2009–10, Juvenile justice series no. 8. JUV8*.

Men were over four times more likely to be in adult community-based corrections than women.

The rate for men was 520 per 100,000 adult male population, while for women it was 113 per 100,000 adult female population.

Young people under community-based supervision

In 2009–10, 10,914 young people were under juvenile community-based supervision during the year (table 13.30). The most common type of order was probation and similar, with 8,890 young people receiving these orders during the year. Data are sourced from the Juvenile Justice National Minimum Dataset collected by the AIHW.

Deaths in custody

In 1991, the Royal Commission into Aboriginal Deaths in Custody investigated the deaths of 99 Aboriginal and Torres Strait Islander people that occurred in police or prison custody between January 1980 and May 1989. One of the outcomes was the establishment of a National Deaths in Custody Monitoring and Research Program at the Australian Institute of Criminology.

During 2008, 86 people died in all forms of custody in Australia, an increase of 12 deaths from 2007 (table 13.31). Of the 2008 total, 13 (15%) were Aboriginal and Torres Strait Islander people. The largest number of deaths in custody recorded since 1990 was in 1997 (105), while the largest number of deaths of Aboriginal and Torres Strait Islander people was in 1995 (22).

13.31 DEATHS IN CUSTODY

	POLICE		PRISON		TOTAL		Total(a)
	Aboriginal and Torres Strait Islander	Non- Indigenous	Aboriginal and Torres Strait Islander	Non- Indigenous	Aboriginal and Torres Strait Islander	Non- Indigenous	
1990	5	26	5	28	10	54	65
1991	5	26	8	31	13	57	70
1992	7	24	2	34	9	58	67
1993	3	30	7	42	10	72	83
1994	3	25	11	42	14	67	82
1995	4	22	18	41	22	63	87
1996	6	23	12	40	18	63	82
1997	6	23	9	67	15	90	105
1998	6	21	10	59	16	80	97
1999	6	21	13	46	19	67	86
2000	5	21	11	51	16	72	90
2001	4	31	14	43	18	74	92
2002	11	26	8	42	19	68	87
2003	8	28	10	30	18	58	76
2004	8	23	7	32	15	55	70
2005	8	16	7	27	15	43	58
2006	6	18	4	27	10	45	56
2007	4	25	5	40	9	65	74
2008	4	28	9	45	13	73	86

(a) Includes deaths that occurred in custody other than police or prison custody (such as juvenile detention).

Source: Australian Institute of Criminology, *Deaths in custody in Australia: National Deaths in Custody Program, 2008*.

Youth victimisation and offending: Ostatistical snapshot

Youth involvement in crime is a perennial issue of interest for the media, government and researchers. Bringing together various statistical data sources to create a cohesive picture of youth involvement in crime and justice has been identified as a key priority in addressing this issue. Youth are broadly defined as those aged under 25 years.

This special article is based on a December 2011 report, *In Focus: Crime and Justice Statistics, December 2011* (4524.0). The report collated findings from several ABS statistical collections and provided an overview of youth victims and youth offenders. Information was sourced predominantly from *Recorded Crime – Offenders, 2007–08 to 2009–10*, and *Crime Victimisation, Australia, 2008–09 and 2009–10*. Data sourced from *Crime Victimisation, Australia* were only available for persons aged 15 years and over and data from *Recorded Crime – Offenders* were only available for persons aged 10 years and over.

All differences between estimates sourced from *Crime Victimisation, Australia* presented throughout this article are statistically significant differences.

Youth and their experiences of victimisation: selected offences

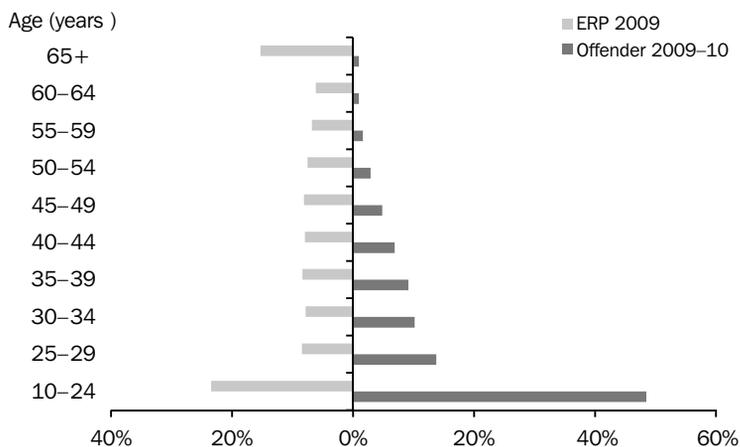
Physical assault was the most common form of assault experienced by the youth population in 2009–10. In the 12 months prior to interview, 6% of persons aged 15–17, and 6% of persons aged 18–24, experienced at least one physical assault. These rates are more than double the estimated victimisation rates for physical assault for persons aged 25 years and over (2.3%).

Youth as criminal offenders

A comparison of the proportion of total offenders who were aged 10–24 in 2009–10 (48%) with the proportion of the general population who were aged 10–24 in Australia as at December 2009 (23%), clearly shows the higher proportion of young people in the offender population (graph S13.1).

Youth offenders demonstrate different types of offending in comparison to adult offenders. The most common principal offence for youth offenders aged 10–24 was Theft (21% of young offenders), while for adult offenders aged 25

S13.1 Age distribution of recorded crime offender population compared with the estimated resident population (ERP)—2009–10



Source: *Recorded Crime – Offenders, 2009–10* (4519.0); *Australian Demographic Statistics, Dec 2009* (3101.0).

years and over, the most common principal offence was Acts intended to cause injury (22%).

Are youth crime victimisation and offending increasing?

Overall, there was a significant decrease in estimated victimisation rates for physical assault and threatened assault between 2008–09 and 2009–10. For the youth population, there was a significant decrease for youth aged 15–17 in physical assault (9% to 6%) and threatened assault (8% to 5%). For youth aged 18–24, there was a significant decrease for threatened assault (7% to 5%).

Estimated victimisation rates for sexual assault slightly decreased between 2008–09 and 2009–10, at 0.6% and 0.5% respectively for those aged 18–24, and 0.3% to 0.2% for those aged 25 and over. While the victimisation rates for these selected personal offences have generally decreased over time, the proportion of youth victims has remained relatively high. In 2008–09, 32% of victims of total assault (including physical and threatened assault) were aged 15–24, compared with 29% in 2009–10.

Offender rates for persons aged 10–14 years and persons aged 15–19 years have increased each year since 2007–08. This trend is in contrast to the offender rates for adults, which have decreased each year since 2007–08.

Gender differences

For males aged 15–24, 7.4% experienced at least one physical assault, compared to 4.1% of females in this age group in the 12 months prior to interview. However, the rates were very similar for threatened assaults (graph S13.2).

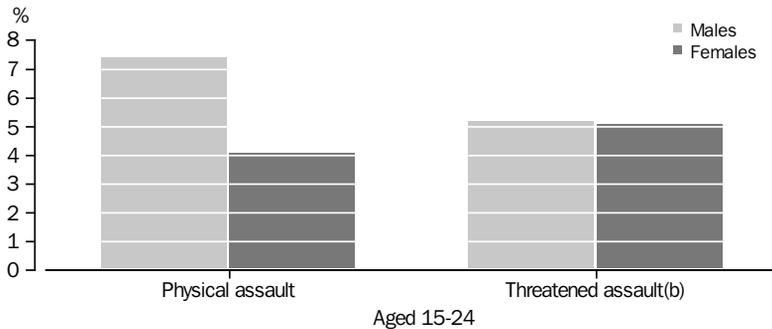
Theft was the most common principal offence for female offenders aged 10–24 (36%), whilst for males it was Public order offences (22%).

Location and relationship of offender to victim

Persons aged 18–24 were more likely than persons aged 15–17 to report that they did not know their offender (49% and 20% respectively).

The tendency for persons aged 18–24 to not know their offender can perhaps be better understood when combined with information about the most common location for an incident to occur. For physical assault incidents, the most common location for an incident to occur was at a place of entertainment/recreation (25%). For persons aged 15–17, a pattern emerged between the location of the incident and the relationship to the offender. The offender was most commonly reported as being a colleague/school student/professional relationship (38%), and the incident most commonly occurred at a work/place of study location (32%).

S13.2 PERSONS AGED 15–24 YEARS: VICTIMISATION RATES(a), By gender—2009–10



(a) Proportion of total persons aged 15–24 who were a victim of selected crime.

(b) Includes both face-to-face and non face-to-face incidents.

Source: *Crime Victimization, Australia 2009–10* (4530.0).

Physical injuries arising from physical or threatened assault victimisation

Over half of the victims of physical assault aged 15–24 reported being physically injured in their most recent incident of physical assault (57% for 15–17 year olds and 55% for 18–24 year olds). In addition, approximately 1 in 5 reported seeking formal medical treatment

(21% of 15–17 year olds and 19% of 18–24 year olds).

Further information

Further information on this topic can be obtained from *In Focus: Crime and Justice Statistics, December 2011* (4524.0).

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CULTURE AND RECREATION

Cultural and recreational activities are important contributors to the wellbeing of individuals and communities. They take many forms and include involvement in visual and performing arts, music, literature, cultural heritage, religious activities, libraries, radio, television, and sports and physical recreation.

This chapter reviews a range of cultural and recreational activities undertaken by Australians and, where available, presents data for those activities. Statistics have been drawn from surveys of households and businesses conducted by the Australian Bureau of Statistics (ABS). Other Australian Government organisations have contributed some of the data presented in this chapter.

Information on people working in culture and recreation occupations can be found in *Year Book Australia 2009–10*.

Information on the Arts and recreation services industry can be found in chapters 8 *Labour*, 15 *Industry structure and performance*, 22 *Service industries*, 25 *Information and communication technology* and 26 *Research and innovation*.

Arts and cultural heritage

Adult attendance at selected cultural venues and events

Attending cultural venues such as libraries, museums or zoos, and going to events such as music concerts are an important part of Australian life, whether for enjoyment, education or to stay in touch with family and friends.

The ABS conducted its 2009–10 Survey of Attendance at Cultural Venues and Events between July 2009 and June 2010, collecting information about whether people aged 15 years and over had attended selected cultural venues and events in the 12 months prior to interview.

The survey found that in 2009–10, 15.0 million, or 86% of Australians aged 15 years and over, attended at least one selected cultural venue or event. The most frequently attended cultural venue was the cinema, with 67% of people reporting that they had attended at least once in the 12 months prior to interview (table 14.2). Cinemas were followed by zoological parks and aquariums (37%), botanic gardens (35%) and libraries (34%) as the next most attended cultural venues.

Popular music concerts had the highest rate of attendance (30%) out of the selected performing arts events, with theatre performances and musicals and operas (both 16%) having around half the attendance rate of this event. Classical

music concerts (9%) and dance performances (10%) had the lowest attendance rates out of the selected performing arts events included in the survey.

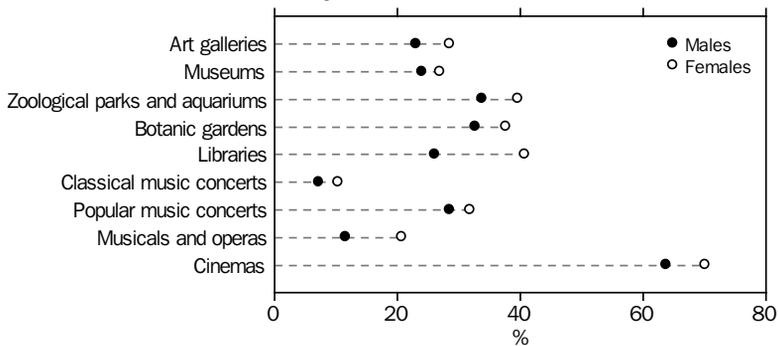
Attendance by sex and age

Females had higher attendance rates than males at all of the selected cultural venues and events (graph 14.1). Nearly twice as many females as males attended musicals and operas (21% compared with 12%), and a higher proportion of females attended libraries than males (41% compared with 26%). Going to the cinema had the highest attendance rates out of all the selected venues and events for both females and males (70% and 64% respectively).

People aged 15–17 years were the most likely to have attended at least one of the selected cultural venues or events included in the survey, with an attendance rate of 97% (table 14.2). As age increased, the attendance rate for at least one of the selected cultural venues or events decreased, with people in the older age groups of 55–64 and 65 years and over having the lowest attendance rates (82% and 71% respectively).

Zoological parks and aquariums were most well attended by people aged 35–44 years, with just over half (51%) attending in the 12 months prior to interview. Popular music concerts were most commonly attended by people aged 18–24 years, with an attendance rate of 45%, and least attended by people aged 65 years and over

14.1 PERSONS ATTENDING SELECTED CULTURAL VENUES AND EVENTS, By sex—2009–10



Source: Attendance at Selected Cultural Venues and Events, Australia, 2009–10 (4114.0)

14.2 PERSONS ATTENDING SELECTED CULTURAL VENUES AND EVENTS, By age—2009–10

	AGE GROUP (YEARS)						65 and over	Total
	15–17	18–24	25–34	35–44	45–54	55–64		
	ATTENDANCE RATE (%)							
Art galleries	27.3	22.3	23.4	25.7	29.3	30.3	23.6	25.9
Museums	29.4	18.4	26.2	32.0	28.0	26.6	18.4	25.5
Zoological parks and aquariums	39.4	36.9	46.2	50.5	33.3	30.2	19.6	36.8
Botanic gardens	28.8	27.6	38.6	37.1	38.0	38.5	31.3	35.2
Libraries	40.1	30.8	32.1	36.4	33.4	32.9	32.7	33.5
Archives	*3.4	1.8	3.1	2.9	5.3	4.2	3.5	3.5
Performing arts								
Classical music concerts	7.0	5.9	6.1	6.4	10.2	13.3	12.3	8.9
Popular music concerts	38.1	44.6	40.2	31.5	28.8	23.3	12.2	30.3
Theatre performances	19.0	13.6	14.0	16.3	19.4	19.4	13.9	16.3
Dance performances	16.3	9.0	8.1	12.8	12.2	9.3	6.8	10.1
Musicals and operas	16.5	12.0	15.0	16.1	19.0	20.0	15.0	16.3
Other performing arts	17.1	15.3	20.3	20.5	17.1	14.6	11.4	16.8
Total attending at least one performing arts event	59.6	58.5	59.0	55.3	52.3	48.5	37.9	52.3
Cinemas	92.8	85.3	75.8	71.2	66.6	56.9	39.8	67.0
Total attending at least one venue or event	96.5	93.0	91.8	89.9	84.6	81.7	70.6	85.8

* estimate has a relative standard error of 25% to 50% and should be used with caution

Source: *Attendance at Selected Cultural Venues and Events, Australia, 2009–10 (4114.0)*.

(12%). Over one-third of people in each of the age groups from 25–34 to 55–64 years visited a botanic garden. Although attendance at libraries was highest for 15–17 year olds at 40%, it was above 30% for all age groups.

State or territory of usual residence

People in the Australian Capital Territory had the highest rate of attendance, with 93% attending at least one cultural venue or event in 2009–10 (table 14.3). The lowest rates of attendance were by people residing in New South Wales (83%) and in Tasmania (84%).

Residents of the Australian Capital Territory had the highest rates of attendance at seven of the thirteen selected cultural venues and events. The cinema had the highest rate of attendance for ACT residents (76%). Residents of the Northern Territory had the highest rates of attendance at zoological parks and aquariums (53%), botanic gardens (43%), dance performances (15%) and other performing arts (23%). Residents of Victoria and the ACT had similar rates of attendance at musicals and operas (21% and 19% respectively). Rates of attendance at libraries were between 30% and 40% for all states and territories.

Attendance at selected cultural venues by people with a disability

In the 2009 Survey of Disability, Ageing and Carers, a disability was defined as any limitation, restriction or impairment which lasted, or was likely to last, for at least six months, and restricted everyday activities. The survey asked whether people with a disability had attended any of the selected cultural venues during the 12 months prior to interview. Survey results showed that, of the selected cultural venues, the highest proportion of people aged 15 years and over with a disability had attended the cinema (37%) while the lowest proportion (19%) had visited a museum or art gallery (table 14.4).

Visiting the library was the second most popular activity, with 28% of people with a disability reporting that they had done so in 2009. Similar proportions of people aged 15 years and over with a disability attended the theatre or concert (24%), or visited an animal or marine park or botanic gardens (23%). Females had higher rates of attendance than males at all of the selected cultural venues. The difference between female and male attendance rates was greatest for attending the theatre or concert, and lowest for visiting an animal or marine park or botanic gardens.

14.3 PERSONS ATTENDING SELECTED CULTURAL VENUES AND EVENTS(a), By states and territories—2009–10

	NSW	Vic.	Qld	SA	WA	Tas.	NT(b)	ACT	Australia
ATTENDANCE RATE (%)									
Art galleries	25.7	26.2	25.7	25.6	22.7	26.8	30.2	45.9	25.9
Museums	23.2	25.6	25.5	28.2	23.9	36.0	44.6	46.2	25.5
Zoological parks and aquariums	35.2	38.5	32.7	40.9	41.6	30.6	53.1	43.6	36.8
Botanic gardens	31.5	40.0	36.0	36.6	31.4	35.2	43.1	39.6	35.2
Libraries	32.4	33.4	35.5	35.4	31.1	34.5	35.8	38.4	33.5
Archives	3.1	4.4	2.2	3.0	3.4	3.8	*4.6	15.9	3.5
Performing arts									
Classical music concerts	9.4	9.9	6.3	8.3	9.4	9.3	7.9	13.8	8.9
Popular music concerts	29.3	31.1	27.9	30.7	36.3	25.3	31.5	35.9	30.3
Theatre performances	16.4	17.4	13.9	16.3	15.9	21.1	16.1	22.9	16.3
Dance performances	10.9	9.3	9.0	10.4	11.1	8.8	14.5	13.5	10.1
Musicals and operas	16.7	20.5	13.4	13.5	12.1	17.3	12.4	19.3	16.3
Other performing arts	15.6	18.0	16.0	18.4	17.4	15.5	22.7	19.6	16.8
Total attending at least one performing arts event	51.4	54.5	49.6	52.5	53.7	48.9	54.3	63.9	52.3
Cinemas	64.4	69.2	68.9	65.7	67.6	59.3	68.6	76.1	67.0
Total attending at least one venue or event	83.2	87.2	87.0	87.6	86.2	83.9	91.4	93.0	85.8

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Persons aged 15 and over and their frequency of attendance at surveyed venues and events during the 12 months prior to interview.

(b) Refers to mainly urban areas.

Source: *Attendance at Selected Cultural Venues and Events, Australia, 2009–10 (4114.0)*.

14.4 ATTENDANCE AT SELECTED CULTURAL VENUES BY PERSONS WITH A DISABILITY(a), By sex—2009

	NUMBER ('000)			ATTENDANCE RATE (%)		
	Males	Females	Persons	Males	Females	Persons
Visited museum or art gallery	327.7	399.0	726.7	18.5	20.3	19.4
Visited library	437.0	604.0	1 041.0	24.6	30.8	27.9
Attended theatre or concert	354.6	540.6	895.2	20.0	27.5	23.9
Attended cinema	622.6	773.8	1 396.4	35.1	39.4	37.4
Visited animal or marine park or botanic gardens	400.8	465.4	866.1	22.6	23.7	23.2

(a) Relates to persons aged 15 years and over, with a disability, living in households, who attended selected cultural venues away from home during the 12 months prior to interview.

Source: *Unpublished ABS data, Survey of Disability, Ageing and Carers, Australia, 2009*.

Children's attendance at selected cultural venues and events

The 2009 ABS Survey of Children's Participation in Cultural and Leisure Activities was conducted in April 2009 and found that, in the 12 months prior to interview, 71% of children aged 5–14 years (1.9 million) had attended at least one selected cultural venue or event, such as a public library, museum or art gallery, or performing arts event outside school hours.

Attendance by sex and age

The attendance rate for girls at performing arts events (38%) was significantly higher than it was for boys (29%) in 2009, as was attendance at public libraries (56% for girls compared with 52% for boys) (graph 14.5). In contrast, there was no significant difference in the attendance rates of girls and boys visiting museums and art galleries in the same 12-month period (41% of boys compared with 42% of girls).

Boys and girls had different rates of attendance across all age groups at performing arts events, with boys' attendance in each age group around 30% and girls' attendance just under 40% (table 14.6). Attendance at museums or art galleries decreased with age for both sexes. For boys, attendance decreased from 48% of those aged 5–8 years to 32% of those aged 12–14 years. For girls, attendance fell from 46% of those aged 5–8 years to 34% of those aged 12–14 years. Attendance of boys at public libraries generally decreased with age (from 54% of those aged 5–8 years to 46% of those aged 12–14 years), while for girls, attendance remained about the same, regardless of age (around 56%).

Children's participation in selected arts and cultural activities

The ABS Survey of Children's Participation in Cultural and Leisure Activities also found that in the 12 months prior to April 2009, just over one

in three children aged between 5 and 14 years (916,300 children) participated in at least one selected organised cultural activity outside of school hours. The selected cultural activities in the survey included playing a musical instrument and participating in dancing, singing or drama.

Participation by sex and age

An estimated 45% of girls and 23% of boys participated in at least one of the selected organised cultural activities. Children's involvement in each of the selected cultural activities in the survey varied by sex, with girls having higher rates of participation than boys (graph 14.7). This was particularly noticeable in the participation rates for dancing, which was the most popular of the selected cultural activities for girls (26%) but not for boys (3%). Playing a musical instrument was the most popular of the selected cultural activities for boys (19%) and the second most popular for girls (21%). Drama had

14.5 CHILDREN ATTENDING SELECTED CULTURAL VENUES AND EVENTS, By sex—2009



Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*.

14.6 CHILDREN ATTENDING SELECTED CULTURAL VENUES AND EVENTS(a), By sex and age—2009

	AGE GROUP (YEARS)			Total
	5–8	9–11	12–14	
	ATTENDANCE RATE (%)			
Males				
Visited public library	53.9	54.6	45.8	51.6
Visited museum or art gallery	47.7	41.4	31.6	40.9
Attended performing arts event	30.9	28.6	27.2	29.1
Females				
Visited public library	56.2	54.8	56.5	55.9
Visited museum or art gallery	45.8	44.5	34.1	41.8
Attended performing arts event	37.3	39.0	38.9	38.3

(a) Children aged 5–14 years who attended selected cultural venues and events outside of school hours during the 12 months prior to interview in April 2009.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*.

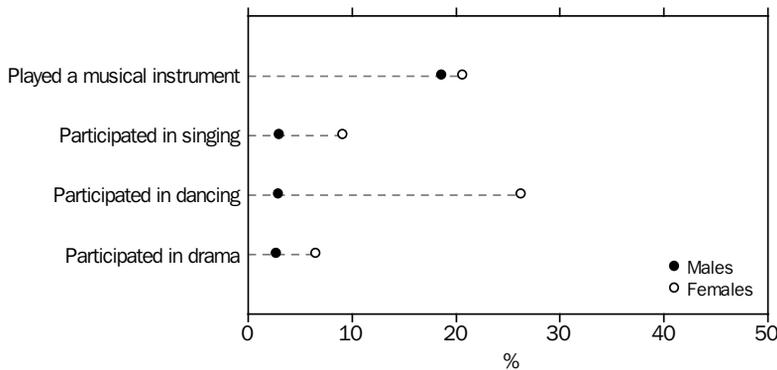
the lowest participation rates for both boys (3%) and girls (7%). Participation rates for singing, dancing and drama were similar for boys in each of the age groups (table 14.8).

Boys in the 9–11 year age group were more likely to play a musical instrument (25%) than those in the other age groups (22% of 12–14 year olds and 12% of 5–8 year olds). This pattern was similar for girls, with 27% of those aged 9–11 playing an instrument compared with 24% of 12–14 year olds and 13% of 5–8 year olds. Participation rates for girls in dancing decreased with age, from 31% of girls aged 5–8 years to 20% of girls aged 12–14 years.

Libraries

The main activities of libraries are the acquisition, collection, organisation, preservation and loan of library materials such as books, magazines, manuscripts, musical scores, maps and prints. The 2009–10 *Australian Public Libraries Statistical Report* produced by the State Library of Queensland in 2011, found that as at June 2010 there were 1,494 public libraries in Australia. New South Wales accounted for over a quarter (27%) of this total with 397 libraries. Of the balance, 345 (23%) were located in Queensland and 287 (19%) in Victoria. There were 10.1 million registered library users in Australia and about one-third of these (33%) were registered in New South Wales (table 14.9).

14.7 CHILDREN PARTICIPATING IN SELECTED ORGANISED CULTURAL ACTIVITIES(a), By sex—2009



(a) Children aged 5–14 years who attended selected cultural venues and events outside of school hours during the 12 months prior to interview in April 2009.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*

14.8 CHILDREN PARTICIPATING IN SELECTED CULTURAL ACTIVITIES(a), By sex and age—2009

	AGE GROUP (YEARS)			Total
	5–8	9–11	12–14	
PARTICIPATION RATE (%)				
Males				
Playing a musical instrument	11.5	24.8	21.7	18.7
Singing	2.9	3.7	2.8	3.1
Dancing	3.1	3.2	2.6	3.0
Drama	2.4	3.5	2.4	2.8
Females				
Playing a musical instrument	13.4	26.7	24.1	20.7
Singing	6.3	10.0	11.9	9.2
Dancing	31.1	26.5	19.8	26.3
Drama	4.2	7.5	8.8	6.6

(a) Children aged 5–14 years who attended selected cultural venues and events outside of school hours during the 12 months prior to interview in April 2009.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*.

14.9 PUBLIC LIBRARIES AUSTRALIA—2009–10

		NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Australia
Libraries										
Fixed point	no.	374	261	327	136	232	46	33	9	1 418
Mobile	no.	23	26	18	7	—	—	—	2	76
Total	no.	397	287	345	143	232	46	33	11	1 494
Staff										
Qualified librarians, FTE(a)	no.	827.4	614.1	392.0	131.6	307.7	na	16.2	27.5	2 316.5
Total staff, FTE(a)	no.	2 365.9	2 723.5	1 447.4	765.1	970.7	na	94.3	94.9	8 461.7
Public Internet access(b)										
Service points with Internet terminals	no.	397	287	300	136	213	45	33	9	1 420
Percentage of total service points with Internet terminals	%	100	100	87	95	92	98	100	82	95
Internet terminals provided	no.	2 735	1 951	2 023	1 093	819	391	103	78	9 193
Registered library users	Persons ('000)	3 301.1	2 595.6	1 918.9	873.0	1 020.6	137.2	71.5	180.2	10 098.0
Expenditure on public library services	Value (\$m)	312.9	210.1	186.0	84.0	102.2	19.2	9.3	12.3	935.9

— nil or rounded to zero (including null cells)

na not available

(a) FTE = full time equivalent.

(b) As at 30 June 2010.

Source: *Australian Public Libraries Statistical Report 2009–2010*, State Library of Queensland, September 2011.

In 2009–10, almost all public libraries (95%) provided members of the public with Internet access, with 100% of public libraries in New South Wales, Victoria and the Northern Territory providing access to the Internet. On average, there were 6.2 public terminals with Internet access per public library in Australia. The average was highest in Tasmania with 8.5 such terminals per public library, and lowest in the Northern Territory with 3.1.

Government support

The Statistics Working Group (known as the Cultural Ministers Council's Statistics Working Group prior to 30 June 2011), is a joint working group consisting of representatives from the federal Department of the Prime Minister and Cabinet, each of the agencies responsible for the arts and cultural heritage in the states and territories, the Australia Council, Screen Australia and the Australian Bureau of Statistics. The mission of the Statistics Working Group is to provide the cultural statistics required for informed policy and decision-making by governments and the cultural sector in areas such as cultural industry development and management. Additional information about the Statistics Working Group and its activities can be obtained from the website, www.culturaldata.gov.au.

The Australia Council for the Arts is the Australian Government's arts funding and advisory body.

The Australia Council supports young, emerging, developing and established Australian artists and arts organisations, through diverse funding options and a range of grant programs. During 2010–11, 5,689 grant and project applications were made to the Australia Council, of which 1,897 grants, totalling \$164 million, were successful. Around 57% of the grants went to organisations or groups, while the remainder were paid to individual artists. Further information about the Australia Council and its activities can be obtained from its website, www.australiacouncil.gov.au.

The 2009–10 ABS Survey of Cultural Funding by Government found that in 2009–10, total government funding for cultural activities (heritage and arts) was \$6,658 million (table 14.10). Of this, the Australian Government contributed \$2,457 million (37%), while the state and territory governments contributed \$3,003 million (45%) and local governments provided \$1,198 million (18%).

The Australian Government continues to allocate the majority of its cultural funding (72%) to arts activities. In 2009–10, the Australian Government allocated \$1,764 million to arts activities and \$693 million to heritage activities. In contrast, the state and territory governments expended the majority of their funds on heritage activities with \$2,314 million (77%) of their total cultural

14.10 CULTURAL FUNDING, By category and level of government—2009–10

	Australian Government(a)	State and territory government	Local government(b)	Total
VALUE OF FUNDING (\$m)				
Heritage				
Art museums	90.1	187.1	52.4	329.7
Other museums and cultural heritage	295.7	371.8	47.4	714.8
Environmental heritage	151.0	1 345.7	na	1 496.7
Libraries	66.6	347.6	759.3	1 173.4
Archives	89.6	62.2	na	151.8
Total Heritage	693.0	2 314.4	na	3 007.4
Arts				
Literature and print media	34.8	14.0	na	48.8
Performing arts				
Music performance	64.6	50.6	na	115.2
Drama	29.2	32.0	na	61.2
Dance	17.3	15.1	na	32.4
Music theatre and opera	21.7	22.1	na	43.8
Other performing arts	17.2	45.1	na	62.2
Total performing arts	149.9	164.9	91.1	405.9
Performing arts venues	—	214.1	na	214.1
Music composition and publishing	2.0	0.6	na	2.6
Visual arts and crafts	30.6	38.1	na	68.7
Design	0.7	7.4	na	8.1
Radio and television services	1 295.0	0.8	na	1 295.8
Film and video production and distribution	108.0	108.4	na	216.4
Multimedia	3.3	8.8	na	12.1
Other arts	139.7	131.9	na	271.6
Total Arts	1 764.0	689.0	na	2 453.0
Cultural or arts services n.e.c.(c)	..	..	247.5	247.5
Total government funding	2 457.0	3 003.3	1 197.7	6 658.1

— nil or rounded to zero (including null cells)

na not available

.. not applicable

(a) The Australian Government refers to the Federal Government. It does not refer to the aggregate of state and territory governments, nor does it include local government.

(b) Limited detailed data are available from local government.

(c) Data shown as na for heritage and arts for local government are included in Cultural or arts services not elsewhere classified.

Source: *Cultural Funding by Government, Australia, 2009–10* (4183.0).

funding in this area, while arts activities received \$689 million or 23% of funding. In 2009–10, local government funding was minimal in comparison with that of the Australian Government and the state and territory governments for both heritage and arts activities, with libraries receiving the majority of local government funding (\$759 million or 63%).

Radio and television services received \$1,295 million from the Australian Government, accounting for 73% of Australian Government arts funding and 53% of all Australian Government cultural funding.

The largest recipient of state and territory government funding across all categories was environmental heritage, which received \$1,346 million, accounting for 58% of state and territory government heritage funding and 45% of all state and territory government cultural funding. Performing arts venues received \$214 million, 31% of state and territory government arts funding and 7% of all state and territory government cultural funding.

Sport and physical recreation

Adult participation in sport and physical recreation

Participating in sport and physical recreation, and attending sporting events as spectators, are important features of the Australian lifestyle. There can be many benefits for participants, including improved health, increased social connections and a better overall sense of wellbeing.

The 2009–10 ABS Survey of Participation in Sport and Physical Recreation was conducted during the 12-month period between July 2009 and June 2010, and collected information about the participation of people aged 15 years and over. The survey included sports, such as football or netball, which are usually organised by a club or association, and other sport and physical recreation activities which may or may not have been organised, such as cycling or walking for exercise.

Participation by age and sex

The 2009–10 survey found that 64% of people aged 15 years and over (or 11.1 million people) had participated in sport and physical recreation as a player at least once during the 12 months prior to interview (table 14.11). The survey found that participation in sport and physical recreation decreased with age. People aged 15–17 years had the highest rate of participation (79%), while people aged 65 years and over had the lowest (48%). The overall rates of participation for males and females were similar (65% and 63% respectively), while the most noticeable difference between male and female participation was seen in the youngest age group, 15–17 years (86% of males compared with 71% of females).

State or territory of usual residence

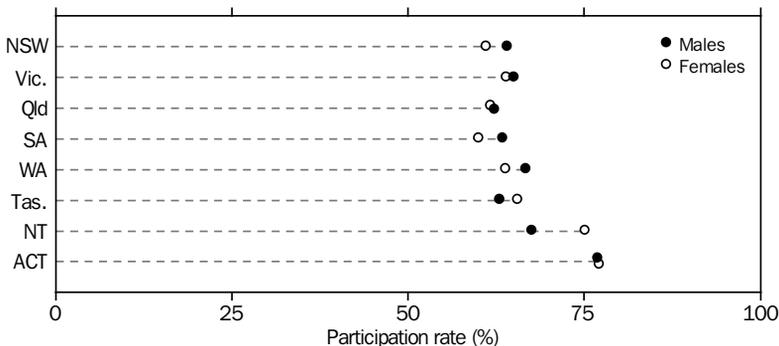
In 2009–10, participation in sport and physical recreation was highest in the Australian Capital Territory (77%) and in the Northern Territory (72%). For the states, participation rates ranged

14.11 PARTICIPANTS, SPORT AND PHYSICAL RECREATION, By age and sex—2009–10

Age group (years)	NUMBER ('000)			PARTICIPATION RATE (%)		
	Males	Females	Persons	Males	Females	Persons
15–17	395.7	288.3	684.1	86.3	71.1	79.1
18–24	757.2	752.2	1 509.4	69.4	69.7	69.5
25–34	1 077.8	1 046.9	2 124.7	69.9	67.4	68.7
35–44	1 008.5	1 010.8	2 019.3	66.0	64.2	65.1
45–54	954.0	963.0	1 916.9	64.9	63.5	64.2
55–64	721.4	799.1	1 520.5	58.4	63.6	61.0
65 years and over	641.6	693.5	1 335.1	49.6	47.0	48.2
Total participants	5 556.2	5 553.8	11 110.0	64.5	62.7	63.6

Source: *Participation in Sport and Physical Recreation, Australia, 2009–10 (4177.0)*.

14.12 PARTICIPANTS, SPORT AND PHYSICAL RECREATION, States and territories—2009–10



Source: *Participation in Sport and Physical Recreation, Australia, 2009–10 (4177.0)*.

from 62% in South Australia to 65% in Western Australia. Differences in participation rates for males and females were most noticeable in the Northern Territory (68% compared with 75%) and in New South Wales (64% compared with 61%) (graph 14.12).

Most popular activities

The most popular sport and physical recreation activity in 2009–10 was walking for exercise, with 23% of people aged 15 years and over participating at least once in the 12 months prior to interview. The next most popular activity was aerobics, fitness or going to the gym, which had a participation rate of 14%, followed by swimming or diving, which had a participation rate of 7%.

Nearly twice as many females participated in walking for exercise (30%) compared with males (16%). Females also had a higher participation rate in aerobics, fitness or going to the gym (17% compared with 11%). Table 14.13 shows the top ten sports and physical recreation activities for both males and females in 2009–10.

14.13 PARTICIPANTS, SPORT AND PHYSICAL RECREATION, Top 10 activities, By sex—2009–10

	Participation	
	Number '000	rate %
MALES		
Walking for exercise	1 347.6	15.6
Aerobics/fitness/gym	967.1	11.2
Cycling/BMXing	710.8	8.2
Jogging/running	643.9	7.5
Golf	643.2	7.5
Swimming/diving	553.1	6.4
Tennis	382.9	4.4
Soccer (outdoor)	319.6	3.7
Cricket (outdoor)	237.8	2.8
Australian rules football	227.6	2.6
FEMALES		
Walking for exercise	2 657.3	30.0
Aerobics/fitness/gym	1 481.8	16.7
Swimming/diving	739.9	8.4
Jogging/running	492.0	5.6
Cycling/BMXing	430.7	4.9
Netball	411.3	4.6
Tennis	319.5	3.6
Yoga	273.0	3.1
Dancing	218.6	2.5
Bush walking	207.6	2.3

Source: *Participation in Sport and Physical Recreation, Australia, 2009–10* (4177.0).

Facilities used

The most popular type of facilities used for sport and physical recreation activities in 2009–10 were outdoor facilities such as parks, beaches and walking trails (58%). The next most popular facilities were structured facilities such as gyms, public pools or courts (52%) (table 14.14). People's own homes or other people's homes were the least likely places that people participated in sport or physical recreation activities, with only 19% of people reporting that they had used these facilities.

People aged 15–17 years were the most likely to use structured facilities such as sports grounds or ovals (62%), while younger people aged between 15 and 34 years were the most likely to use structured facilities such as gyms, public pools or courts (around 60%). Outdoor facilities such as parks, beaches and walking trails were most popular with people in the middle to older age groups, from 62% of people aged 35–44 years to 66% of people aged 55–64 years.

The percentages of people in each age group using structured facilities, such as sports grounds and ovals, generally showed a pattern of decline with age, from 62% of participants aged 15–17 years to only 14% of participants aged 65 years and over. The use of other outdoor facilities such as parks, beaches and walking trails increased with age, from 35% of participants aged 15–17 years to 57% of participants aged 65 years and over, with a peak of 66% of those aged 55–64. This pattern corresponds with the relative popularity of different sports and physical recreation activities for different age groups – younger people have higher participation rates in active sports such as Australian rules football, while older people are more likely to participate in walking.

Participation in sport and physical recreation by people with a disability

In the 2009 Survey of Disability, Ageing and Carers, a disability was defined as any limitation, restriction or impairment which lasted, or was likely to last, for at least six months, and restricted everyday activities. Of people aged 18 years and over with a reported disability, 24% had participated in a sport or physical recreation activity in the 12 months prior to interview (table 14.15). Males with a disability had a higher rate of participation in sport or physical recreation (28%) than females with a disability (20%).

People with a profound or severe core activity limitation had low rates of participation in sport or physical recreation (9% and 16% respectively). People with a moderate core activity limitation had a slightly higher rate of participation (20%), while those with a mild core activity limitation had the highest participation rate of those with a disability, with nearly a quarter with this limitation participating (24%).

Children's participation in organised sport

Participation by age and sex

The 2009 ABS Survey of Children's Participation in Cultural and Leisure Activities was conducted in April 2009. The survey found that 63% of children aged 5–14 years old (or 1.7 million children) participated in at least one sport,

14.14 PARTICIPANTS, SPORT AND PHYSICAL RECREATION, Facilities used(a), By age—2009–10

Age group (years)	Own home or someone else's	Structured facility, such as gym, public pool or court	Structured facility such as sports ground, oval	Other outdoor facility such as park, beach, walking trail	Other facilities	Total participants(b)
	NUMBER ('000)					
15–17	144.2	402.0	421.3	238.6	77.5	684.1
18–24	278.0	935.4	624.1	719.4	127.3	1 509.4
25–34	377.0	1 299.8	760.3	1 180.4	171.6	2 124.7
35–44	401.0	1 102.1	612.3	1 258.1	188.9	2 019.3
45–54	405.2	898.7	391.5	1 241.5	203.4	1 916.9
55–64	247.8	626.4	183.3	1 002.8	182.7	1 520.5
65 years and over	240.0	530.4	180.4	762.1	169.6	1 335.1
Total participants	2 093.1	5 794.9	3 173.3	6 402.9	1 121.0	11 110.0
PERCENT (%)						
15–17	21.1	58.8	61.6	34.9	11.3	100.0
18–24	18.4	62.0	41.3	47.7	8.4	100.0
25–34	17.7	61.2	35.8	55.6	8.1	100.0
35–44	19.9	54.6	30.3	62.3	9.4	100.0
45–54	21.1	46.9	20.4	64.8	10.6	100.0
55–64	16.3	41.2	12.1	66.0	12.0	100.0
65 years and over	18.0	39.7	13.5	57.1	12.7	100.0
Total participants	18.8	52.2	28.6	57.6	10.1	100.0

(a) 'Facilities used' applies to all activities that were participated in. Participants may have used more than one type of facility for each activity participated in. Components will not add to totals as some participants may have used more than one facility.

(b) Includes participants who answered "don't know".

Source: *Participation in Sport and Physical Recreation, Australia, 2009–10 (4177.0)*.

14.15 ADULT PARTICIPATION IN SPORT OR PHYSICAL RECREATION(a), By disability status and sex—2009

Disability status	NUMBER ('000)			PARTICIPATION RATE (%)		
	Males	Females	Persons	Males	Females	Persons
Profound core activity limitation(b)	18.5	15.7	34.1	11.8	6.5	8.6
Severe core activity limitation(b)	43.5	42.2	85.7	18.5	14.0	15.9
Moderate core activity limitation(b)	63.0	64.7	127.7	21.8	18.1	19.8
Mild core activity limitation(b)	160.8	115.6	276.4	28.0	19.9	23.9
Schooling or employment restriction	182.7	143.3	326.1	25.9	19.1	22.4
All with specific limitations or restrictions(c)	348.8	281.5	630.2	24.7	17.4	20.8
Total with reported disability(d)	466.1	366.0	832.1	27.6	20.0	23.7

(a) Relates to persons aged 18 years and over, with a disability, living in households only, who participated in sport or physical recreation away from home during the 12 months prior to interview.

(b) Core activities comprise communication, mobility and self-care.

(c) Total may be less than the sum of the components as persons may have both a core activity limitation and a schooling or employment restriction.

(d) Includes those who do not have a specific limitation or restriction.

Source: *Unpublished ABS data, Survey of Disability, Ageing and Carers, 2009*.

organised by a school, club or association, outside of school hours in the 12 months prior to interview (table 14.16). Boys had a higher participation rate (70%) than girls (56%).

Participation in organised sport peaked at 74% for boys aged 12–14 years and at 65% for girls aged 9–11 years. Participation rates were higher for boys across all age groups compared with girls. The most noticeable difference was between boys and girls aged 12–14 years (74% compared with 55%).

State or territory of usual residence

Children’s participation in organised sport varied by state and territory, ranging from 58% in Tasmania to 71% in the Australian Capital Territory. Boys generally had higher participation rates than girls in organised sport, with noticeable differences in the participation of boys and girls in New South Wales (70% compared with 50%) and in the Northern Territory (68% compared with 48%) (graph 14.17).

Most popular sports

The most popular organised sports for children in 2009 were swimming, with a participation rate of 19%, outdoor soccer (13%) and Australian rules football (9%) (table 14.18). For boys, the most popular sports were outdoor soccer (20%), swimming (17%) and Australian rules football (16%). In comparison, the most popular sports for girls were swimming (20%), netball (17%) and gymnastics (8%).

Although boys had a higher overall participation rate in organised sport, girls had a much higher participation rate in another form of organised physical activity – dancing. During the 12 months prior to interview in April 2009, 26% of girls aged 5–14 years participated in organised dancing outside of school hours (table 14.19). This compared with only 3% of boys who participated in this activity.

Besides organised sport and dancing, the survey also asked about participation in two non-organised physical recreation activities – ‘bike

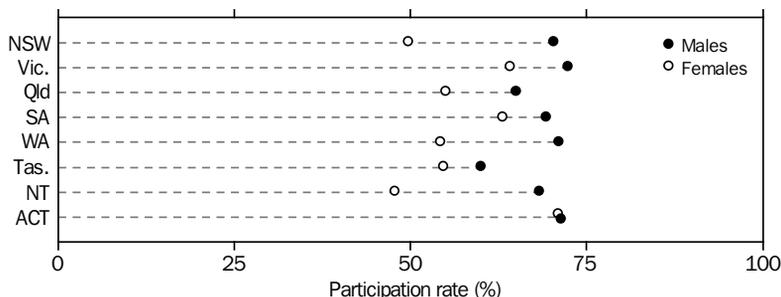
14.16 CHILDREN PARTICIPATING IN ORGANISED SPORT(a), By age and sex—2009

Age group (years)	NUMBER ('000)			PARTICIPATION RATE (%)		
	Males	Females	Persons	Males	Females	Persons
5–8	349.5	264.8	614.2	63.9	51.0	57.6
9–11	302.8	258.1	560.9	72.1	64.6	68.4
12–14	318.6	224.0	542.6	74.2	54.9	64.8
Total participants	970.8	746.9	1 717.8	69.6	56.3	63.1

(a) Children aged 5–14 years who participated in organised sport (excluding dancing) outside of school hours during the 12 months prior to interview in April 2009.

Source: *Children’s Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*.

14.17 CHILDREN PARTICIPATING IN ORGANISED SPORT(a), States and territories—2009



(a) Children aged 5 to 14 years who participated in organised sport (excluding dancing) outside of school hours during the 12 months prior to interview.

Source: *Children’s Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*.

14.18 CHILDREN PARTICIPATING IN TOP 10 MOST POPULAR ORGANISED SPORTS(a), By sex—2009

	Number ('000)	Participation rate (%)
MALES		
Soccer (outdoor)	277.8	19.9
Swimming	240.1	17.2
Australian rules football	223.7	16.0
Cricket (outdoor)	135.7	9.7
Tennis	131.6	9.4
Basketball	118.7	8.5
Martial arts	105.2	7.5
Rugby league	97.2	7.0
Soccer (indoor)	59.4	4.3
Hockey	25.6	1.8
FEMALES		
Swimming	262.8	19.8
Netball	225.0	17.0
Gymnastics	101.2	7.6
Basketball	83.2	6.3
Tennis	83.2	6.3
Soccer (outdoor)	82.7	6.2
Martial arts	49.5	3.7
Athletics, track and field	47.0	3.5
Hockey	31.8	2.4
Soccer (indoor)	17.5	1.3

(a) Children aged 5–14 years who participated in organised sport (excluding dancing) outside of school hours during the 12 months prior to interview in April 2009.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*.

14.19 CHILDREN PARTICIPATING IN SELECTED ACTIVITIES(a), By sex—2009

	MALES		FEMALES		PERSONS	
	'000	%	'000	%	'000	%
Dancing	41.9	3.0	348.5	26.3	390.4	14.3
Skateboarding, rollerblading or riding a scooter	780.4	55.9	562.2	42.4	1 342.6	49.3
Bike riding	922.5	66.1	721.1	54.4	1 643.6	60.4

(a) Children aged 5–14 years who were involved in selected other activities outside of school hours in the last two weeks of school prior to interview in April 2009.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2009 (4901.0)*.

riding' and 'skateboarding, rollerblading or riding a scooter'. For both groups of activities, a significantly higher proportion of boys (66% and 56% respectively) participated than girls (54% and 42%).

Spectator attendance at sporting events

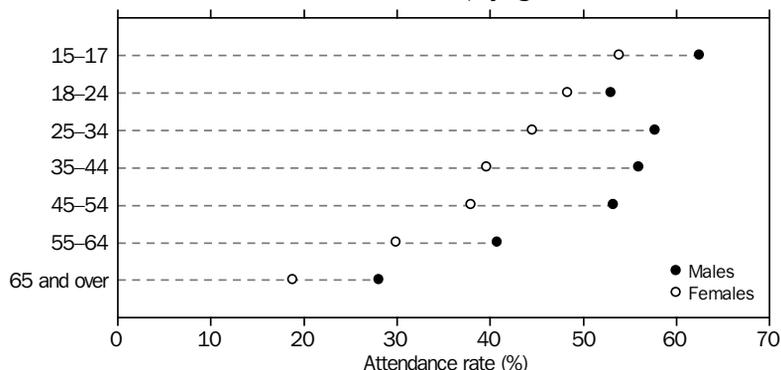
Attending sporting events, such as club matches and international competitions, is a popular pastime for many Australians. The 2009–10 ABS Survey of Spectator Attendance at Sporting Events was conducted during the period July

2009 to June 2010. The survey found that 43% of people aged 15 years and over (or 7.6 million people) had attended a sporting event in the 12 months prior to interview, excluding attending junior sports and school events.

Attendance by sex and age

Males had a higher rate of attendance at sporting events (50%) than females (37%). People in the 15–17 year old age group had the highest rate of attendance (58%), with rates of attendance generally decreasing as age increased. For all age groups, male attendance was higher than for females (graph 14.20).

14.20 SPECTATORS AT SPORTING EVENTS, By age and sex—2009–10



Source: *Spectator Attendance at Sporting Events, 2009–10 (4174.0)*.

14.21 SPECTATOR ATTENDANCE AT SELECTED SPORTING EVENTS(a), By sex—2009–10

	NUMBER ('000)			ATTENDANCE RATE (%)		
	Males '000	Females '000	Persons '000	Males %	Females %	Persons %
Australian rules football	1 660.8	1 171.1	2 831.8	19.3	13.2	16.2
Horse racing	1 015.3	925.0	1 940.3	11.8	10.4	11.1
Rugby league	969.1	594.7	1 563.8	11.2	6.7	8.9
Motor sports	966.2	456.8	1 423.0	11.2	5.2	8.1
Soccer (outdoor)	584.0	354.8	938.8	6.8	4.0	5.4
Cricket (outdoor)	488.2	190.5	678.7	5.7	2.2	3.9
Rugby union	366.1	209.3	575.5	4.2	2.4	3.3
Harness racing	221.8	190.2	412.1	2.6	2.1	2.4
Tennis (indoor and outdoor)	122.4	171.3	293.7	1.4	1.9	1.7
Dog racing	183.5	97.9	281.4	2.1	1.1	1.6
Basketball (indoor and outdoor)	110.5	110.4	220.8	1.3	1.2	1.3
Netball (indoor and outdoor)	53.7	123.0	176.7	0.6	1.4	1.0

(a) The top 12 ranked sports for Australia in terms of total attendances in 2009–10.

Source: *Spectator Attendance at Sporting Events, 2009–10 (4174.0)*.

Most popular events

The most popular sporting events for spectators were Australian rules football (16% of people aged 15 years and over) followed by horse racing (11%) (table 14.21). More males (19%) than females (13%) attended Australian rules football, while going to the rugby league and motor sports events was also more popular with males (both 11%) than with females (7% and 5% respectively). Males had higher attendance rates than females at outdoor soccer (7% compared with 4%) and outdoor cricket (6% compared with 2%).

While the attendance rates were relatively low, females had slightly higher attendance than males at tennis (1.9% compared with 1.4%) and at netball (1.4% compared with 0.6%).

Involvement in non-playing roles

The ABS conducted the 2010 Survey of Involvement in Organised Sport and Physical Activity in April 2010. The survey measured people's involvement in organised sport and physical activities as both players and in non-playing roles, such as coaching, umpiring, being a committee member and providing medical support (table 14.22). The survey found that in the 12 months prior to interview, 9% of people aged 15 years and over had participated in organised sport and physical activity in a non-playing role.

Males had a higher rate of participation in non-playing roles (10%) than females (8%).

The highest participation rate in a non-playing role was as a coach, instructor or teacher (4%), followed by involvement as a committee member or administrator (3%). Males had a higher participation rate than females in the roles of coach, instructor or teacher (4% and 3% respectively) and in the role of referee or umpire (2% compared with 1%).

People who were involved as a coach, instructor or teacher were far more likely to receive payment (27% of people aged 15 years and over) than people in other roles (graph 14.23). Those in playing roles were least likely to be paid (3%).

Volunteering

The ABS General Social Survey, conducted in 2010, collected information on whether adults (people aged 18 years and over) had volunteered for any organisations during the 12 months prior to interview. The types of organisations that people may have volunteered for included sport and physical recreation organisations as well as community and welfare, education and training, arts and heritage and religious organisations.

The survey found that 14% of people had volunteered for a sport and physical recreation organisation, with a slightly higher percentage

14.22 PERSONS INVOLVED IN ORGANISED SPORT AND PHYSICAL ACTIVITY, By role and sex—2010

Type of role(a)	TOTAL INVOLVEMENT ('000)			PARTICIPATION RATE (%) (b)		
	Males	Females	Persons	Males	Females	Persons
Playing	2 097.2	1 725.7	3 822.9	24.4	19.7	22.0
Non-playing roles						
Coach, instructor or teacher	370.3	273.0	643.3	4.3	3.1	3.7
Referee or umpire	197.8	115.1	313.0	2.3	1.3	1.8
Committee member or administrator	270.0	256.5	526.6	3.1	2.9	3.0
Scorer or timekeeper	216.8	264.3	481.1	2.5	3.0	2.8
Medical support	58.1	60.0	118.2	0.7	0.7	0.7
Other non-playing role	60.4	82.8	143.1	0.7	0.9	0.8
Total non-playing roles(c)	826.4	734.6	1 561.0	9.6	8.4	9.0
Total involved(d)	2 446.4	2 068.8	4 515.2	28.5	23.7	26.0

(a) Persons may be involved in more than one role.

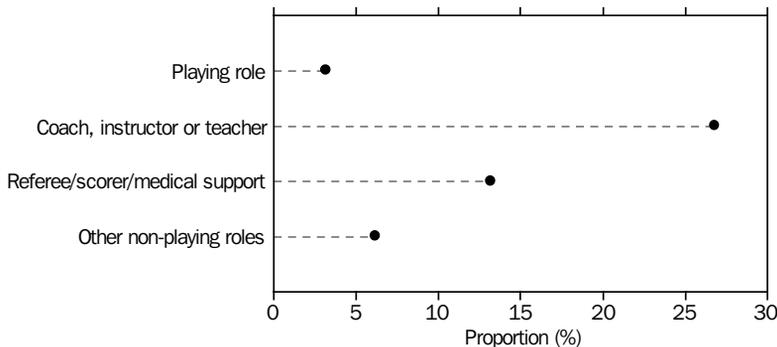
(b) The number of persons involved in organised sport and physical activity, expressed as a percentage of the population in the same group (males or females).

(c) Components may not add to totals as some persons were involved in more than one non-playing role.

(d) Components may not add to totals as some persons were involved in both playing and non-playing roles.

Source: *Involvement in Organised Sport and Physical Activity, Australia, April 2010* (6285.0).

14.23 PERSONS INVOLVED IN ORGANISED SPORT AND PHYSICAL ACTIVITY, By role and payment status—2010



Source: *Involvement in Organised Sport and Physical Activity, Australia, April 2010* (6285.0).

of males (15%) than females (12%) (table 14.24). The rate of volunteering in sport and physical recreation organisations tended to peak in the middle age groups, with people aged 35–44 and 45–54 having a similar rate (20%). The

volunteer rates in sport and physical recreation organisations were significantly lower for people aged 18–24 (8%) and people aged 65 years and over (6%).

14.24 SPORT AND PHYSICAL RECREATION VOLUNTEERS, By age and sex—2010

Age group (years)	NUMBER ('000)			VOLUNTEER RATE (%)		
	Males	Females	Persons	Males	Females	Persons
18–24	96.2	*88.1	184.3	8.6	*8.2	8.4
25–34	168.1	162.1	330.2	10.7	10.3	10.5
35–44	301.3	312.9	614.2	19.5	19.8	19.7
45–54	323.0	285.2	608.2	21.8	18.7	20.2
55–64	242.5	110.8	353.4	19.5	8.7	14.1
65 and over	114.0	63.5	177.6	8.6	4.3	6.3
Total	1 245.1	1 022.6	2 267.7	15.0	12.0	13.5

* estimate has a relative standard error of 25% to 50% and should be used with caution

Source: Unpublished data. General Social Survey, Australia, 2010.

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15

INDUSTRY STRUCTURE AND PERFORMANCE

This chapter presents information on the structure and performance of the main industrial components of the Australian economy, and their changing contribution to overall economic activity.

The chapter begins by outlining the development of industry since European settlement of Australia. The next section examines industry gross value added and the contribution of individual industries to Australia's gross domestic product. The chapter goes on to examine aspects of employment and then the flow of Australian businesses into and out of the Australian economy, including the survival rates of entries. The chapter concludes with a look at productivity, including multifactor productivity and labour productivity.

More detailed information on the structure and performance of individual industries is provided in chapters 16 to 26.

Other related information can be found in chapter 8 *Labour* and chapter 30 *National accounts*.

Evolution of Australian industry

Australia's economic development has been one of contrast and change. In the early years of European settlement, between 1788 and 1820, there was little scope for industrial or commercial enterprises. The government, as both main producer and main consumer, established workshops to produce the basic necessities of life – flour, salt, bread, candles, leather and leather articles, blacksmith's products, tools and domestic items.

Between 1820 and 1850, the pastoral industry led Australia's economic development, and by 1850 it was supplying well over half of the British market for imported wool. The growth in the wool industry brought great advances in the rest of the economy, with local manufacturing industries being established in response to new market opportunities. Gold surpassed wool as Australia's major export earner throughout the 1850s and 1860s, resulting in a rapid expansion of banking and commerce. Increased public works activity during the 1870s played an important role in encouraging expansion in manufacturing. By 1901, this expansion had resulted in an economy where agriculture, manufacturing, mining, construction and the service industries all provided significant contributions to Australia's wealth.

From 1901 to 1930, manufacturing expanded further, with impetus from Federation and the elimination of customs barriers between states, and from World War I. With the onset of World War II, the Australian manufacturing sector was sufficiently developed and diversified to respond to the demand for war materials and equipment. Key industries expanded and new ones developed rapidly to produce munitions, ships, aircraft, new kinds of equipment and machinery, chemicals, textiles and so on. After the war, all sectors of the economy experienced growth. The manufacturing sector's contribution to the economy peaked at just under 30% of gross domestic product (GDP) in the late 1950s and early 1960s.

The onset of oil price rises in the early 1970s led the world into recession. Inflation, coupled with slower growth in Australia's GDP, affected all sectors of the economy. The modest employment growth in the 1970s was dominated by service industries.

The 1980s and 1990s saw a decline in the relative contribution to GDP from goods-producing industries, particularly manufacturing, and a rise in the contribution from service industries. During this period, the mining, manufacturing, and electricity, gas and water supply industries experienced declining employment, along with outsourcing of some activities, particularly support services.

The early 2000s saw a continuing decline in the relative contribution to GDP from goods-producing industries, and a continuing rise in the contribution from service industries. While manufacturing remains a significant industry, its share of GDP continues to be the primary driver for the falling contribution from goods-producing industries. The finance and insurance industry provided the largest increase in service industries and now has the highest relative contribution to GDP. The article *100 years of change in Australian industry*, in *Year Book Australia 2005* provides more information about the evolution of Australian industry in the 20th century.

Following a fall in GDP in volume terms in 1990–91, there have been 20 years of consecutive growth. In 2010–11, GDP increased by 2.1%. From an industry perspective, increases were recorded in the value added of most industries in 2010–11, with Agriculture, forestry and fishing (9.2%) recording the largest increase followed by Professional, scientific and technical services (6.9%), Administrative and support services (6.6%), Construction (6.3%) and Transport, postal and warehousing (3.6%). A number of industries experienced declines for the year, including Other services (-3.7%), Rental, hiring and real estate services (-1.9%), Wholesale trade (-0.6%) and Mining (-0.6%).

Value of goods and services produced by Australian industry

One measure of the importance of an industry is its contribution to the Australian economy. The size of the Australian economy is typically described in terms of gross domestic product (GDP), and the structure and performance of the economy in terms of industry gross value added (GVA).

GDP is an estimate of the total market value of goods and services produced in Australia, in a given period, after deducting the cost of goods and services used up in the process of production (intermediate consumption), but before deducting the allowances for the consumption of fixed capital (depreciation). This measure avoids double counting the goods and services produced at successive stages of production. As a result, this is also described as the unduplicated value of economic production.

Industry GVA is the term used to describe the unduplicated value of goods and services produced by individual industries. This measure removes the distortion caused by variations of taxes and subsidies across individual industries. Movements in the volume measures of GDP and industry GVA (from which the direct effects of price changes have been removed) are key indicators of economic growth. More information is provided in chapter 30 *National accounts*.

Table 15.1 provides volume measures of industry GVA and GDP for 2010–11. Data are presented at a broad industry level according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (1292.0)*. In the

ANZSIC, individual businesses are assigned an appropriate industry category on the basis of their predominant activities. The table provides estimates of the unduplicated production of goods and services (industry GVA) from 2006–07 to 2010–11. Note that the sum of industries' GVA does not add up to GDP as the former do not include taxes less subsidies on products (taxes less subsidies on products relate to products sold rather than industries producing them and therefore cannot be reliably allocated to industries).

In 2010–11, the value of Australian production (GDP) was \$1,320 billion (in volume terms), an increase of 2.1% from 2009–10. In 2010–11, the ratio of GDP to the estimated resident population (GDP per capita) was \$58,114.

Graph 15.2 shows the average annual simple rate of growth in GVA (in volume terms) for individual industries between 2000–01 and 2010–11. The Financial and insurance services and the Construction industry had the highest average annual rate of growth (just over 5%), followed by the Professional, scientific and technical services industry (4.8%) and the Health care and social assistance industry (4.6%).

15.1 INDUSTRY GROSS VALUE ADDED AND GROSS DOMESTIC PRODUCT, Volume measures(a)

ANZSIC Division(b)	2006–07	2007–08	2008–09	2009–10	2010–11
	\$m	\$m	\$m	\$m	\$m
Agriculture, forestry and fishing	23 139	24 743	29 109	28 764	31 383
Mining	86 446	88 193	90 507	96 105	95 512
Manufacturing	108 703	113 062	106 363	107 707	107 845
Electricity, gas, water and waste services	26 798	26 866	27 894	28 623	28 922
Construction	86 469	92 516	95 292	95 804	101 868
Wholesale trade	51 168	52 692	53 379	55 128	54 794
Retail trade	54 551	57 154	57 179	58 258	59 092
Accommodation and food services	31 381	31 288	30 152	29 474	29 941
Transport, postal and warehousing	61 288	64 635	63 885	65 392	67 720
Information media and telecommunications	38 472	40 867	41 336	41 823	42 367
Financial and insurance services	115 172	124 241	123 627	125 399	127 984
Rental, hiring and real estate services(c)	26 488	25 613	26 782	27 260	26 736
Professional, scientific and technical services	69 488	71 666	74 736	81 043	86 604
Administrative and support services	31 059	32 758	30 714	30 246	32 254
Public administration and safety	60 302	60 621	64 090	64 117	65 266
Education and training	52 890	53 996	55 596	57 546	58 821
Health care and social assistance	62 097	65 193	68 807	72 627	74 307
Arts and recreation services	9 906	10 135	10 907	10 911	11 172
Other services	22 955	23 384	23 808	23 548	22 671
Ownership of dwellings	94 980	97 449	100 330	103 271	105 895
Gross domestic product(d)	1 201 563	1 246 899	1 263 934	1 293 380	1 320 057

(a) Reference year is 2009–10.

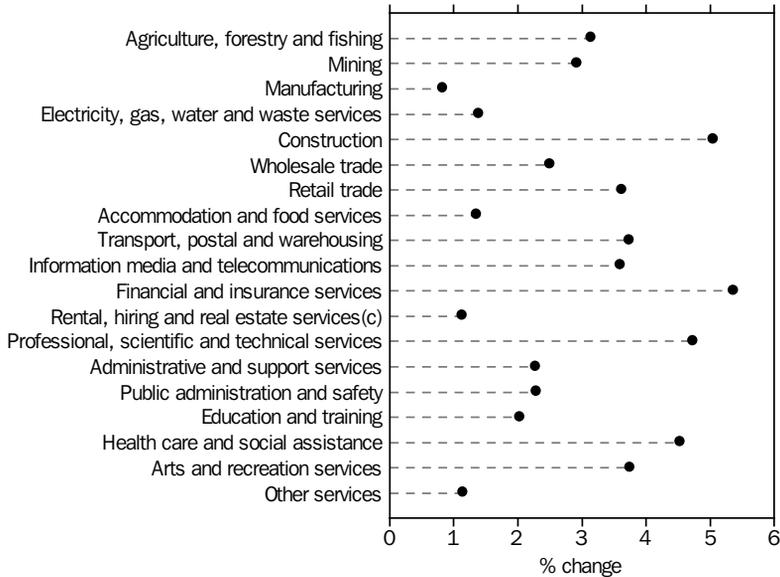
(b) Classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (1292.0)*.

(c) Excludes ownership of dwellings.

(d) Sum of industry gross value added does not equal gross domestic product.

Source: *Australian System of National Accounts, 2010–11 (5204.0)*.

15.2 AVERAGE ANNUAL RATE OF GROWTH IN THE PRODUCTION OF GOODS AND SERVICES(a)(b)—2000–01 to 2010–11



(a) Industry gross value added at basic prices.
 (b) Chain volume measures. Reference year is 2008–09.
 (c) Excludes ownership of dwellings.

Source: Australian System of National Accounts (5204.0).

While average annual growth rates provide an indicator of the broad underlying behaviour of the annual series over several years, these averages smooth the annual movements in the series and mask the highest and lowest movements. In terms of year-on-year changes, some fast growing industries in this period showed fluctuating trends of GVA throughout the decade. While the Financial and insurance services industry GVA grew 12% between 2005–06 and 2006–07, it fell 0.5% two years later. Similarly, the Construction industry experienced a 16% GVA growth between 2001–02 and 2002–03, and almost no growth between 2008–09 and 2009–10. In 2010–11, the GVA of the Construction industry rose 6.3% and the GVA of the Financial and insurance services industry rose 2.1%. The Professional, scientific and technical services industry has also shown fluctuating growth during the period, ranging from 11% at the beginning of the decade to 1.4% at mid-decade. In 2010–11, the GVA of this industry rose 6.9%.

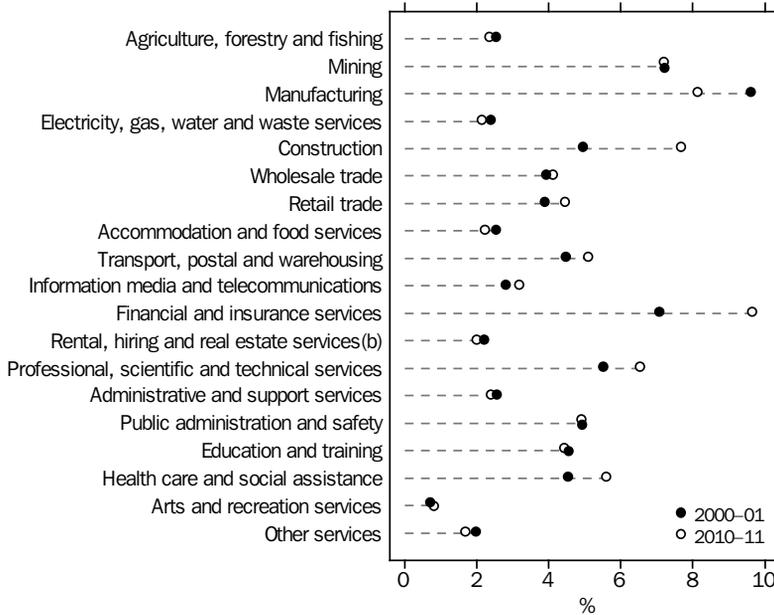
The year-on-year changes for the Agriculture, forestry and fishing industry also varied

significantly over time. While the value of production (GVA) of this industry grew 3.2% on average each year between 2000–01 and 2010–11, it fell 24% in 2002–03 and 15% in 2006–07, due largely to the effects of drought on agricultural production. In both cases, this decline was followed by strong growth in 2003–04 and 2008–09 after the drought period. Between 2009–10 and 2010–11, the Agriculture, forestry and fishing industry grew 9.1%.

Graph 15.3 shows industry GVA shares of GDP for 2000–01 and 2010–11. The Financial and insurance services industry contributed the largest share to GDP (9.7%) in 2010–11, followed by Manufacturing (8.2%), Construction (7.8%) and Mining (7.3%).

Between 2000–01 and 2010–11, the largest increase in industry GVA share of GDP was for Construction (up 2.8 percentage points) and Financial and insurance services (up 2.6 percentage points). The largest fall in industry share of GDP in the period was Manufacturing (down 1.5 percentage points).

15.3 CONTRIBUTION TO GROSS DOMESTIC PRODUCT(a)



(a) Industry gross value added as a proportion of gross domestic product.

(b) Excludes ownership of dwellings.

Source: Australian System of National Accounts (5204.0).

Employment in Australian industry

Another measure of the significance of an industry is its contribution to total employment. Employment (and unemployment) data are used as social indicators by government, and research and welfare organisations. Employment is also an indicator of economic activity, although turning points in the employment series tend to lag turning points in the business cycle.

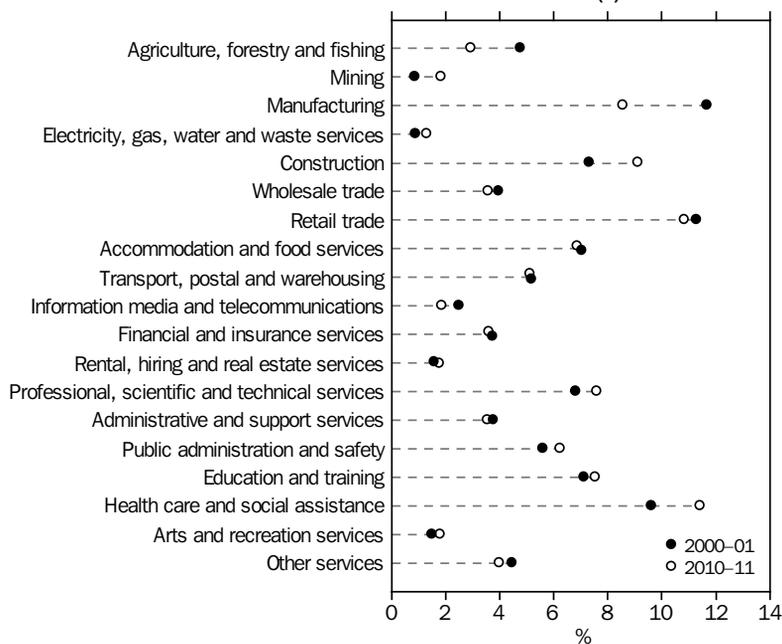
Graph 15.4 shows shares of total employment in 2000-01 and 2010-11, classified by industry according to ANZSIC 2006. These data were derived from the Australian Bureau of Statistics (ABS) monthly Labour Force Survey and relate to the civilian population aged 15 years and over. The data reflect averages across the four quarters of each year to remove seasonal effects. People are considered to be employed if they were in paid work for one hour or more in the reference week, or worked for one hour or more without pay in a family business or farm. Employment is further described in chapter 8 *Labour*.

In 2010-11, 11.4 million people were employed across all industries. From an industry perspective, the Health care and social assistance industry employed the greatest number of people (1.3 million persons or 11.4% of total employment). The next largest industry was Retail trade (10.9%), followed by Construction (9.1%) and Manufacturing (8.6%).

These industries were also the main employing industries in 2000-01, although Health care and social assistance has displaced Manufacturing as the largest employer. Between 2000-01 and 2010-11, the Health care and social assistance share of total employment increased by 1.8 percentage points and the Construction industry share of total employment increased by 1.7 percentage points. Conversely, Manufacturing's share of total employment declined by 3.1 percentage points.

The industry composition of average weekly paid hours for wage and salary earners provides an insight into the labour market. Data on this topic are obtained from the biennial Survey of Employee Earnings and Hours, conducted by the ABS. This survey covers all employing

15.4 CONTRIBUTION TO TOTAL EMPLOYMENT(a)



(a) Annual average of quarterly data.

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

organisations in Australia (public and private sectors) except enterprises primarily engaged in the Agriculture, forestry and fishing industry, private households employing staff, and foreign embassies and consulates.

Graph 15.5 shows average weekly total paid hours for full-time non-managerial adult employees by industry in May 2010 compared with the average for all industries in the period (39.4 hours). Total paid hours are equal to ordinary time paid hours plus overtime paid hours. The highest average weekly total paid hours for full-time non-managerial adult employees was in the Mining industry (44.3 hours), followed by Construction (42.0 hours) and Transport, postal and warehousing (41.5 hours). The industries with the lowest average weekly total paid hours were Education and training (37.3 hours) and Information media and telecommunications (37.9 hours).

Paid overtime accounted for 3.3% of average weekly total paid hours for full-time non-managerial adult employees. Employees worked the most paid overtime in Construction (8.1% of average weekly total paid hours for that

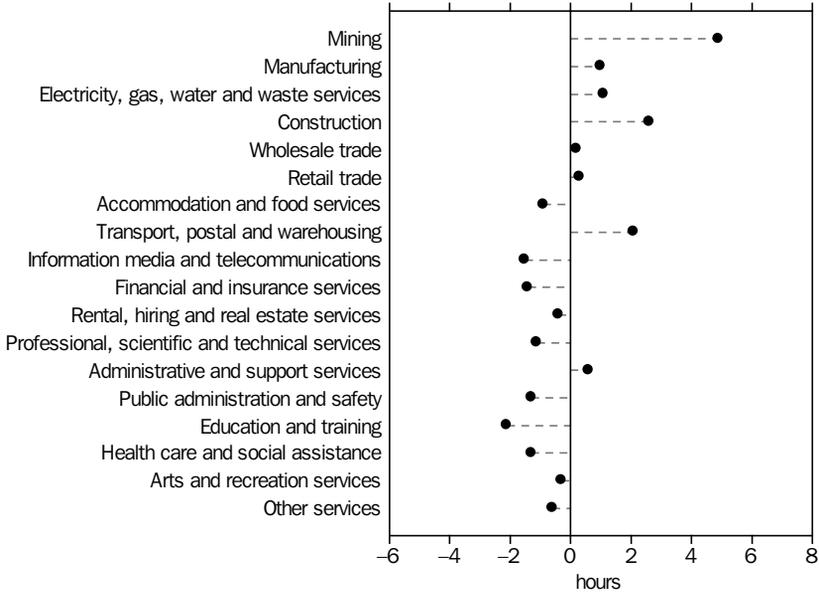
industry), followed by Electricity, gas, water and waste services (7.4%); Transport, postal and warehousing (7.2%); and Manufacturing (5.9%).

Compensation of employees (COE) is both an economic and social indicator. COE includes wages and salaries (paid in cash and in kind) and employer social contributions (e.g. employers' contributions to superannuation and workers' compensation premiums). Wages and salaries, in kind, can include meals, housing, uniforms and vehicles.

Graph 15.6 shows industry shares of total compensation of employees in 2010-11, by industry. In this period, total compensation of employees was \$666 billion. Total wages and salaries was \$595 billion (89% of total compensation of employees).

The industries that held the largest share of total compensation of employees were Health care and social assistance and Financial and insurance Services (both 10.1%), followed by Manufacturing (9.2%) and Professional, scientific and technical services (8.5%). Three of these industries (Health care and social assistance, Manufacturing, and

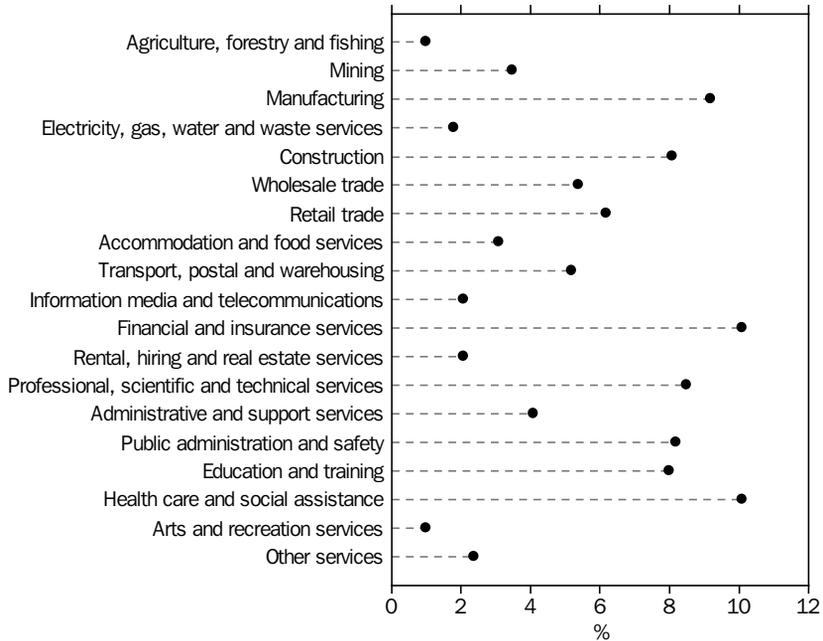
15.5 AVERAGE WEEKLY TOTAL PAID HOURS FOR FULL-TIME NON-MANAGERIAL ADULT EMPLOYEES(a), Difference from all industries average(b)—May 2010



(a) Excludes Agriculture, forestry and fishing. (b) For all industries the average weekly total paid hours is 39.4 hours.

Source: *Employee Earnings and Hours, Australia* (6306.0).

15.6 CONTRIBUTION TO TOTAL COMPENSATION OF EMPLOYEES(a)—2010-11



(a) Comprises wages and salaries plus employers' social contributions.

Source: *Australian System of National Accounts* (5204.0).

Professional, scientific and technical services) were in the top five industries that had the highest share of total employment in 2010–11.

Australian industry business entries and exits

This section provides counts and details of the flow of Australian businesses into and out of the Australian economy, including business survival rates for business entries. Data were sourced from the ABS Business Register (ABSBR) and only include businesses that actively traded in goods and services during the reference period. Entities classified to the general government institutional sector were excluded for most industries. This exclusion particularly affects data for the Public administration and safety, Education and training and Health care and social assistance industries, where details relate only to private sector businesses. The term 'total selected industries' is used to refer to the aggregate of the industries included in this section.

Table 15.7 shows the number of actively trading businesses in Australia at the start and end of 2010–11. The number of businesses operating in the total selected industries at June 2011 was 2,132,412. This compares with 2,124,650 businesses operating at June 2010 (an increase of 0.4% during the period). Construction had the greatest number of businesses at June 2011 (351,890 or 17% of the total). This was followed by Professional, scientific and technical services with 250,613 (12%), Rental, hiring and real estate services with 226,157 (11%) and Agriculture, forestry and fishing with 198,163 (9%). There was a marked decline (–3%) in businesses within the Agriculture, forestry and fishing industry during the period.

Graph 15.8 shows that in 2010–11, there were five industries (Agriculture, forestry and fishing; Manufacturing; Transport, postal and warehousing; Public administration and safety; and Arts and recreation services) where the business exit rates exceeded business entry rates. For Retail trade, the number of entries and exits were about equal, while for the remaining industries there were more entrants than exits.

15.7 BUSINESSES BY INDUSTRY DIVISION—2010–11

ANZSIC Division(a)	Operating at start of financial year		Exits	Operating at end of financial year		Change	Percentage change %	Entry rate %	Exit rate %
	no.	Entries no.		no.	no.				
Agriculture, forestry and fishing	203 713	13 747	19 297	198 163	–5 550	–2.7	6.8	9.5	
Mining	7 828	1 226	899	8 155	327	4.2	15.7	11.5	
Manufacturing	91 593	9 285	10 650	90 228	–1 365	–1.5	10.1	11.6	
Electricity, gas, water and waste services	5 702	888	728	5 862	160	2.8	15.6	12.8	
Construction	350 366	52 867	51 343	351 890	1 524	0.4	15.1	14.6	
Wholesale trade	78 938	10 398	10 089	79 247	309	0.4	13.2	12.8	
Retail trade	143 681	20 919	20 921	143 679	–2	—	14.6	14.6	
Accommodation and food services	80 127	14 444	12 831	81 740	1 613	2.0	18.0	16.0	
Transport, postal and warehousing	135 045	18 148	21 128	132 065	–2 980	–2.2	13.4	15.7	
Information media and telecommunications	18 635	2 969	2 750	18 854	219	1.2	15.9	14.8	
Financial and insurance services	160 936	21 944	18 442	164 438	3 502	2.2	13.6	11.5	
Rental, hiring and real estate services	224 499	22 912	21 254	226 157	1 658	0.7	10.2	9.5	
Professional, scientific and technical services	246 285	36 664	32 336	250 613	4 328	1.8	14.9	13.1	
Administrative and support services	81 518	14 697	14 096	82 119	601	0.7	18.0	17.3	
Public administration and safety	7 840	1 344	1 402	7 782	–58	–0.7	17.1	17.9	
Education and training	25 799	3 952	3 621	26 130	331	1.3	15.3	14.0	
Health care and social assistance	97 611	11 404	8 004	101 011	3 400	3.5	11.7	8.2	
Arts and recreation services	27 962	3 904	4 169	27 697	–265	–1.0	14.0	14.9	
Other services	88 920	12 736	12 165	89 491	571	0.6	14.3	13.7	
Currently unknown(b)	47 652	19 762	20 323	47 091	–561	np	np	np	
All industries	2 124 650	294 210	286 448	2 132 412	7 762	0.4	13.9	13.5	

np not available for publication but included in totals where applicable, unless otherwise indicated

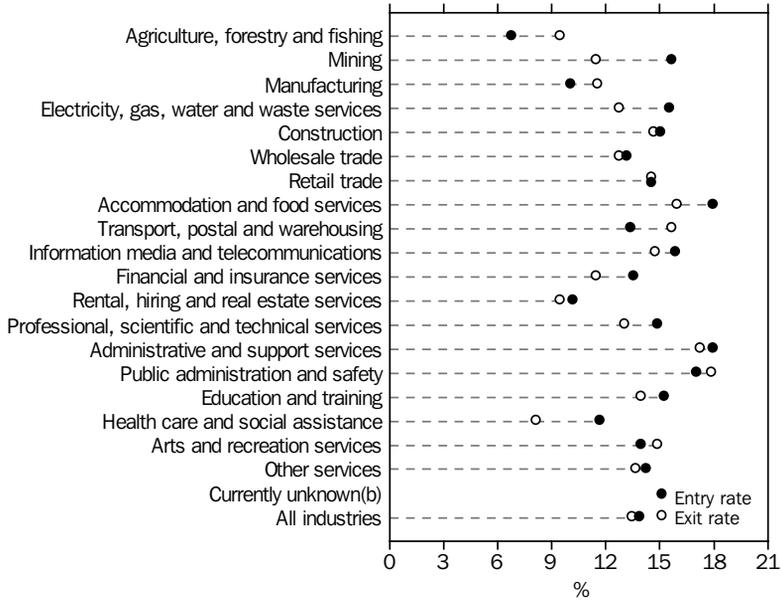
— nil or rounded to zero (including null cells)

(a) Classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (1292.0)*.

(b) This category consists of businesses that are yet to be coded to an industry.

Source: *Counts of Australian Businesses, including Entries and Exits, June 2007 to June 2011 (8165.0)*.

15.8 BUSINESS ENTRY AND EXIT RATES(a)—2010–11

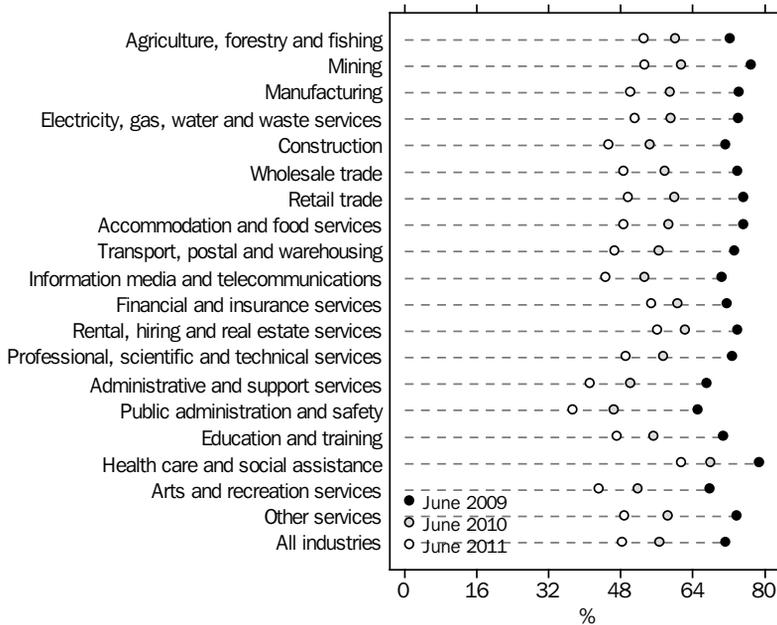


(a) Entry (or exit) rates are total business entries (or exits) during the year divided by total businesses operating at the beginning of the year.

(b) This category consists of businesses that are yet to be coded to an industry.

Source: Counts of Australian Businesses, including Entries and Exits (8165.0).

**15.9 2007–08 BUSINESS ENTRIES, Survival rate—
June 2009, June 2010, June 2011**



Source: Counts of Australian Businesses, including Entries and Exits, June 2007 to June 2011 (8165.0).

Of particular note, was the growth of the Mining and Health care and social assistance industries between June 2010 and June 2011. In that period, the Mining industry grew from 7,828 businesses to 8,155 businesses, an increase of 327 (4.2%). In the same period, the Health care and social assistance industry grew by 3,400 businesses (3.5%).

Graph 15.9 shows survival rates at June 2009, June 2010 and June 2011 for business entries in 2007–08. Survival rates of business entries in 2007–08 at June 2011 were highest for businesses in the Health care and social assistance and the Rental, hiring and real estate services industries. Survival rates for these industries (62% and 56% respectively) were both higher than the total of all industries average (49%). Survival rates at June 2011 were lowest for Public administration and safety and Administrative and support services (38% and 41% respectively).

Industry productivity

Multifactor productivity (MFP) statistics provide a measure of changes in technical progress or efficiency in the economy over time. The measures are used by both government and private organisations to help gauge the sources of economic growth not explained by changes in the measured inputs.

MFP statistics use industry GVA (in volume terms) as the measure of output. Two inputs are used – labour (hours worked) and capital. Capital inputs are a flow measure based on the productive capacity of capital. This means that MFP largely represents the effects of technical progress, improvements in the work force, improvements in management practices and economies of scale. MFP can also be affected in the short to medium term by other factors such as the weather and by variations in capacity utilisation.

Due to the slowdown and decline in the growth of aggregate MFP since 2004–05, there has been an increased focus on the industry origins of aggregate MFP measures. To assist analysts to go beneath the aggregates, MFP measures are also published for each of the individual industries within the market sector grouping. These are industries with marketed activities for which there are satisfactory estimates of the growth in the volume of output. Excluded from this

grouping are Public administration and safety, Education and training, Health care and social assistance and Ownership of dwellings.

Care needs to be taken interpreting industry level MFP results because they are more sensitive than aggregate measures to externalities such as weather, variations in capacity utilisation and measurement error, particularly the year-to-year results. When MFP is considered over long-term trends, it is useful in assessing underlying productive capacity, sometimes referred to as potential output. This is also an important measure of the growth possibilities of the industry and the economy.

Compound average annual growth results are presented for the period 2000–01 to 2010–11 in Table 15.10. To illustrate key industry contributors to the recent MFP slowdown, this is split into two equal periods as follows:

- In the first period, 2000–01 to 2005–06, MFP for the market sector grew on average by 0.7% per annum. Industries recording the strongest growth in this period were Construction (4.2%); Agriculture, forestry and fishing (3.2%); and Financial and insurance services (2.9%). While MFP growth was strong for these industries, there were significant offsets from MFP declines in Mining (–4.1%); Electricity, gas, water and waste services (–3.5%); and Rental, hiring and real estate services (–3.0%).
- In the second period, 2005–06 to 2010–11, MFP for the market sector fell on average by 0.7% per annum. Again, significant declines were recorded for Mining (–6.2%); Rental, hiring and real estate services (–5.1%); and Electricity, gas, water and waste services (–4.7%). Growth had also weakened in the Construction and Agriculture, forestry and fishing industries.

The MFP declines for the Mining and Electricity, gas, water and waste services industries has attracted the attention of analysts and has subsequently become the focus of further research. The ABS has found that MFP in these industries is more difficult to measure because of a range of factors. For the Mining industry, the three key measurement issues identified are:

- the deteriorating quality of natural resource inputs

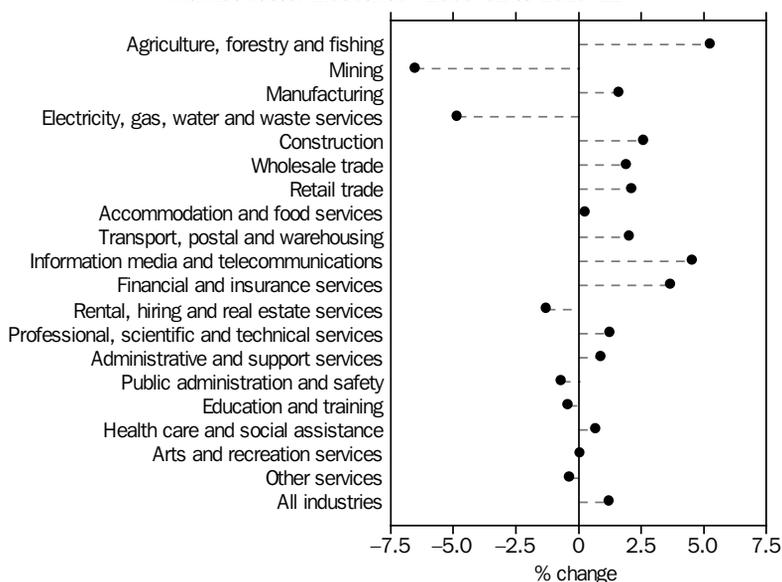
15.10 AVERAGE ANNUAL COMPOUND GROWTH IN VALUE ADDED BASED MFP

ANZSIC Division(a)	2000–01 to 2005–06	2005–06 to 2010–11	2000–01 to 2010–11
Agriculture, forestry and fishing	3.2	1.6	2.4
Mining	-4.1	-6.2	-5.2
Manufacturing	-0.3	-0.5	-0.4
Electricity, gas, water and waste services	-3.5	-4.7	-4.1
Construction	4.2	0.5	2.3
Wholesale trade	1.3	-1.0	0.2
Retail trade	1.0	1.1	1.1
Accommodation and food services	1.7	-2.4	-0.4
Transport, postal and warehousing	1.7	-0.6	0.5
Information media and telecommunications	0.4	0.9	0.6
Financial and insurance services	2.9	2.4	2.6
Rental, hiring and real estate services	-3.0	-5.1	-4.1
Professional, scientific and technical services	0.2	0.6	0.4
Administrative and support services	1.2	-0.6	0.3
Arts and recreation services	-1.1	0.1	-0.5
Other services	-1.6	-2.8	-2.2
Market sector	0.7	-0.7	0.0

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (1292.0).

Source: Experimental Estimates of Industry Multifactor Productivity (5260.0.55.002); Australian System of National Accounts (5204.0).

15.11 GROSS VALUE ADDED PER HOUR WORKED(a), Market sector industries—2000–01 to 2010–11



(a) Indexes of gross value added per hour worked, in chain volume measures. Reference year is 2009–10 = 100.0.

Source: Australian System of National Accounts (5204.0).

- lengthy time lags between the commencement of mining capital projects and formation of productive capacity, and
- the entrance of less experienced workers.

Similarly, lengthy time lags in capital projects have also been observed in Electricity, gas, water and waste services. Recent examples include the construction of desalination plants and improvements to dam capacity. This industry is also affected by fluctuations in the availability of water due to changes in the climate. As with natural resource inputs for Mining, this influence is not recorded in the inputs mix. However, in both industries, natural resources directly influence production and therefore the gross value added measures.

Productivity puzzles also extend to the services industries. International experience demonstrates that there are additional conceptual and data issues surrounding productivity measurement for services industries as they lend themselves to a range of additional measurement complexities. In particular, it is more difficult to estimate quality adjusted output volume measures due to the intangible characteristics of many kinds of services. Examples include the provision of training and consultancy services.

The ABS also produces industry labour productivity indexes. Rather than attempt to measure efficiency, labour productivity is intended as an indicator of the standard of living. In this sense, measuring labour productivity helps to better understand the development of living standards.

Labour productivity is defined as real gross value added per hour worked. Graph 15.11 shows the average annual compound rate of growth in labour productivity for market sector industries over the period 2000–01 to 2010–11. Over this period, the average compound annual growth rate of labour productivity for all industries was 1.2%.

Most industries increased their labour productivity over the period 2000–01 to 2010–11. The industries with the highest average annual compound growth rates in labour productivity were Agriculture, forestry and fishing (5.3%); Information media and telecommunications (4.6%); and Financial and insurance services (3.7%). The highest average annual negative compound growth was seen in Mining (–6.5%) and Electricity, gas, water and waste services (–4.8%).

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AGRICULTURE

Australian agricultural activities are broad-ranging, varying from extensive pastoral and cropping to intensive livestock and horticultural production. Agriculture in Australia utilises a large proportion of natural resources, including 52% of Australia's land area and 52% of national water use (in 2009–10).

Most of Australia's agricultural businesses are engaged in beef cattle farming, dairy cattle farming, sheep farming, grain growing, or a mixture of two or more of these activities.

In recent times, the agricultural commodities with the highest value of production by Australian farmers have been cattle and calf slaughterings, followed by wheat, milk, vegetables, fruit and nuts, sheep and lamb slaughterings, and wool.

Much of this produce is exported, with Australian wool, beef, wheat, and dairy products contributing significantly to global markets.

In this chapter, the major source of statistics for land use, water use, commodity production and livestock numbers is the 2009–10 Agricultural Resource Management Survey (ARMS) and the related Vineyards Supplementary Collection, conducted by the Australian Bureau of Statistics (ABS). Information relating to agricultural finance is obtained from the annual Australian Agricultural and Grazing Industries Survey conducted by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES). Data from the ABS 2011 Agricultural Census will be released in mid 2012.

The chapter contains two special articles, *Agricultural land and water ownership* and *Migrant farmers*, and an article in the Agriculture industry section, *Organic food and farming in Australia*.

Related information can be found in chapter 1 *Geography and climate*, chapter 2 *Environment* and the feature article, *Farming in Australia*, produced in recognition of 2012 as the Australian Year of the Farmer.

Information on the Agriculture, forestry and fishing industry can be found in chapters 8 *Labour*, 15 *Industry structure and performance*, 25 *Information and communication technology* and 26 *Research and innovation*.

Agriculture industry

This section includes detailed information on the Agriculture industry in Australia. It covers the type of agricultural activities undertaken by farm businesses, employment by the Agriculture industry and financial performance measures.

Data are sourced from ABS surveys (of agricultural businesses and of the labour force) and the farm surveys run by the Australian Bureau of Agriculture and Resource Economics and Sciences.

The section also includes a short article, *Organic food and farming in Australia*.

During 2009–10, there were approximately 134,000 businesses with an estimated value of agricultural operations (EVAO) of \$5,000 or more (table 16.1). For the vast majority of these, their primary activity was agriculture, as defined in the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006*. While the remainder (10%) were undertaking some form of agricultural activity, their main activity was not in agriculture. The majority of agricultural businesses were mainly engaged in beef cattle farming, grain growing, mixed grain/sheep/beef farming, sheep farming or dairy cattle farming.

16.1 BUSINESSES WITH MAIN AGRICULTURAL ACTIVITY, By state and territory—2009–10

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
<i>Agriculture industries(a)</i>	no.	no.	no.	no.	no.	no.	no.	no.	no.
Nursery production(b)	^292	^235	^284	62	^88	34	8	1	1 005
Turf growing	^112	^14	^127	**5	*39	^2	2	—	302
Floriculture production(b)	^187	^163	*122	^38	*58	^23	6	—	597
Mushroom growing	^33	^8	^18	**13	*2	*2	—	—	^76
Vegetable growing(b)	1 079	801	952	^585	425	404	32	*1	4 279
Grape growing	1 113	1 678	*102	2 106	^478	^49	^5	^4	5 536
Other fruit and tree nut growing(c)	1 611	601	1 544	391	^475	123	157	*1	4 902
Apple and pear growing	^94	^196	^42	61	^85	^67	—	—	545
Citrus fruit growing	431	^99	76	^209	*100	**2	—	—	916
Sheep farming (specialised)	4 144	3 338	^249	1 559	959	441	—	^15	10 705
Beef cattle farming plus beef cattle feedlots (specialised)	14 324	8 763	12 619	1 368	2 313	1 240	201	26	40 854
Sheep-beef cattle farming	2 838	1 490	^436	^590	^313	^238	^1	*4	5 909
Grain-sheep or grain-beef cattle farming	4 971	2 569	1 089	1 796	1 872	^53	*1	*1	12 352
Rice growing	195	—	*3	—	—	—	—	—	197
Other grain growing	3 190	2 946	1 242	2 801	2 863	*17	—	—	13 059
Sugar cane growing	^374	—	3 259	—	*1	—	—	—	3 634
Cotton growing	150	—	^211	—	—	—	—	—	^361
Other crop growing n.e.c.	^569	^386	^712	^153	^147	^106	13	*1	2 088
Dairy cattle farming	1 425	5 295	764	^365	^286	459	—	—	8 594
Poultry farming (meat)	265	212	88	56	47	^19	—	—	687
Poultry farming (eggs)	*147	^86	^36	^22	^26	^14	—	1	^332
Deer farming	**4	**77	**5	**14	—	*1	^1	—	*101
Other livestock farming n.e.c.(d)	^831	^534	^570	^153	^252	*40	10	*1	2 391
Pig farming	^175	*147	^177	^118	^58	*14	—	—	687
Agriculture	38 554	29 638	24 726	12 464	10 889	3 348	437	56	120 112
Other industries	4 561	3 025	2 719	1 587	1 509	^582	72	^17	14 072
Total All industries	43 115	32 663	27 445	14 052	12 398	3 930	509	73	134 184

— nil or rounded to zero

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) The Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0) has been used to categorise businesses according to their main activity.

(b) Includes under cover plus outdoors.

(c) Includes berry fruit, stone fruit and olive growing.

(d) Includes horse farming and beekeeping.

Source: *Agricultural Commodities, Australia (7121.0)*.

Employment

The Agriculture industry is an important source of employment in regional and rural Australia. The number of people employed in the industry decreased in 2010–11 to a yearly average of 306,700 persons (table 16.2).

Selected financial performance measures

Statistics on the financial performance of farm businesses provided in this section are based on information collected in the annual Australian Agricultural and Grazing Industries Survey and the Australian Dairy Industry Survey, conducted

by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES). The collection covers farm businesses engaged in the sheep, beef cattle, dairy cattle, wheat and other crop industries.

Selected financial performance measures – expressed as annual averages per farm – for all broadacre farm businesses for the years 2007–08 to 2009–10 are shown in table 16.3.

Farm cash income is a measure of the cash funds available for farm investment and consumption after paying all costs incurred in production, including interest payments, but excluding capital payments and payments to family workers.

16.2 AGRICULTURE INDUSTRY(a), Employment(b)(c)

	Males '000	Females '000	Persons '000
2007–08	206.3	96.6	302.9
2008–09	217.1	104.6	321.7
2009–10	218.7	106.1	324.8
2010–11	206.0	100.7	306.7

(a) Classified according to Subdivision 01 (Agriculture) of the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0). Excludes services to agriculture industries.

(b) Includes persons who worked without pay between 1 and 14 hours per week in a family business or on a farm (i.e. contributing family workers).

(c) Annual average of quarterly data ended May quarter.

Source: *Labour Force Australia, Detailed, Quarterly* (6291.0.55.003).

16.3 BROADACRE FARM BUSINESSES(a)

Annual average per farm	2007–08	2008–09	2009–10(b)
Total cash receipts (\$)	338 650	336 640	^ 341 400
Total cash costs (\$)	274 430	260 660	^ 282 500
Farm cash income (\$)	64 220	75 980	^ 58 900
Farm business profit (\$)	-11 310	-1 510	* -20 500
Profit at full equity			
excluding capital appreciation (\$)	29 380	36 640	*19 900
including capital appreciation (\$)	84 360	40 620	**2 300
Farm capital at 30 June (\$)(c)	3 898 150	3 800 320	4 005 500
Rate of return(d)			
excluding capital appreciation (%)	0.8	1.0	*0.5
including capital appreciation (%)	2.2	1.1	**0.1
Total non farm income \$(e)(f)	34 030	35 820	32 200

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to Group 014 of Subdivision 01 (Agriculture) of the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition.

(b) Preliminary estimates.

(c) Excludes leased plant and equipment.

(d) Rate of return to farm capital at 1 July.

(e) Average per responding farm.

(f) Collected for owner manager and spouse only.

Source: *Australian Bureau of Agriculture and Resource Economics and Sciences, Australian Farm Survey Results 2007–08 to 2009–10 and Australian Farm Survey Results 2008–09 to 2010–11.*

Organic food and farming in Australia

This article was contributed by Dr Andrew Monk, Biological Farmers of Australia.

The retail value of the 'organic market' in Australia was estimated to be at least \$1 billion in 2010 with annual growth projections ranging from 10% to 25% for the years ahead, depending on the market segment.¹ IBIS World has noted organic farming and organic products as growth sectors to watch in the coming years.² The *Australian Organic Market Report 2010* estimated that just under 3,000 Australian business operations are certified to organic standards, with over 2,000 of those being primary production businesses and the remainder processors, wholesalers and retailers.

The 'organic food and farming industry'³ in Australia is diverse in terms of sectors represented (from cosmetics and composts to chickens and corn), market outlet types (from farmers' markets to supermarkets) and size of operations (from niche gourmet trail operations to large-scale operations supplying supermarket chains and export markets).

In terms of government standards and industry certification programs, the Australian organic food and farming industry has been in existence for over 20 years. Internationally, the organic marketplace has Codex Alimentarius⁴ specifications for organic production and marketing. Many trading partners (including the United States of America, Japan and the European Union) also have regulatory arrangements in place for the production and sale of products claiming organic status.

The progressive simplification of labelling of organic foods at retail level is making it easier for consumers to identify and choose certified organic products. Consumers appear to perceive a range of benefits from eating organic foods. The top five consistently identified benefits are 'chemical free' (82%), 'additive free' (77%), 'environmentally-friendly' (70%), 'no genetically modified organisms' (65%) and 'hormone and antibiotic free meat' (64%).⁵

Organic produce is currently a niche offering in the Australian market, at an estimated 1% of retail turnover. However, expansion is anticipated, in particular with continued growth in distribution by the major supermarket chains. There has also been growth in more direct market routes, such as farm gate sales, farmers' markets and co-operative marketing schemes. The ongoing presence of independent single store organic retailers underscores the inherent diversity of this market segment.⁵

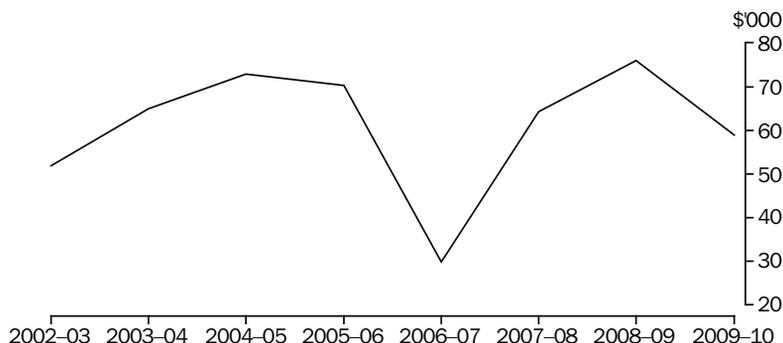
The resilience of the organic food and farming industry over the past decade has surprised many. For example, in the face of the global financial crisis (GFC), growth continued to be registered for the organic market, both domestically and at the international level. While more mature markets, such as the USA and the United Kingdom, saw a slowing of growth between 2008 and 2009, the Australian market experienced an estimated 50% growth (between 2008 and 2010). World sales of organic products are now estimated at about US\$50 billion and growing.⁶

The *Australian Organic Market Report 2012*, published by the industry group, Biological Farmers of Australia, will include key findings from the Australian Bureau of Statistics 2011 Agricultural Census. These include: number of Australian farming businesses with organic or bio-dynamic certification and land area under certification.

Endnotes

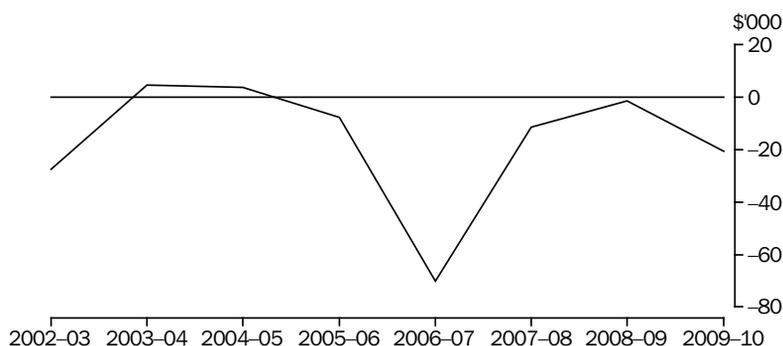
1. *Australian Organic Market Report 2010*, Biological Farmers of Australia Ltd, Brisbane. See <http://www.bfa.com.au>.
2. IBIS World 2011, *Organic Farming in Australia: Market Research Report IBIS World*.
3. While not an 'industry' in the technical sense, the organic food and farming movement, which has evolved as a market sector in the past three decades across the developed world, is defined by its cohesion around clearly articulated standards for the production and sale of organic products. The 'industry' encompasses fertiliser and biopesticide producers, farming sectors, processors, wholesalers and retailers with an involvement in the production and/or sale of organic products.
4. Codex Alimentarius is the organisation jointly established by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) in 1963 to assist in the establishment of standards and regulation of food traded internationally.
5. Biological Farmers of Australia 2010, *Australian Organic Market Report 2010*.
6. Willer, Helga and Kilcher, Lukas (eds) 2010, *The World of Organic Agriculture – Statistics and Emerging Trends 2010*, IFOAM, Bonn and FiBL, Frick.

16.4 BROADACRE FARM BUSINESSES, Farm average cash income



Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Farm Surveys Results.

16.5 BROADACRE FARM BUSINESSES, Farm average business profit



Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Farm Surveys Results.

It is a short-term measure of farm income because it takes no account of depreciation on assets. Average farm cash income for broadacre farms declined from \$75,980 in 2008–09 to \$58,900 in 2009–10 (graph 16.4 and table 16.3).

A measure of longer-term profitability is farm business profit, as it takes into account capital depreciation and changes in inventories of livestock, fodder, grain and wool. Average farm business profit was a negative amount in 2009–10 at –\$20,500 (graph 16.5 and table 16.3). This was a decline on the 2008–09 figure of –\$1,510.

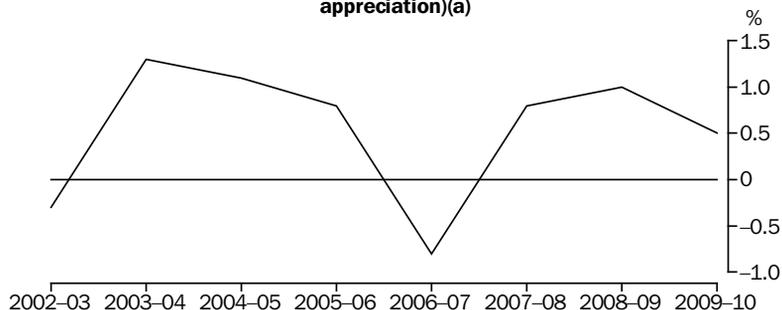
For the broadacre industries, rate of return (excluding capital appreciation) averaged 0.5% per farm in 2009–10 (graph 16.6), down from 1.0% in 2008–09.

Agricultural environment

Australia's average elevation is the lowest of any continent, with a mean elevation of only 330 metres. The dominant topographical feature of the continent is the Great Dividing Range, which spans the length of the eastern seaboard and has a profound influence on regional weather patterns and land use.

Australia's agricultural landscapes support a wide range of soils. Most are ancient, strongly weathered and infertile by world standards, with deficiencies in phosphorus and nitrogen. Those on flood plains are younger and more fertile. Very few are considered good quality soils for agriculture. To offset nutrient deficiencies, superphosphate and nitrogenous fertilisers are

16.6 BROADACRE FARM BUSINESSES, Rate of return (excluding capital appreciation)(a)



(a) Rate of return to farm capital at 1 July.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, *Australian Farm Surveys Results*.

widely used, particularly on pasture and cereal crops. Fragile soil structure and a susceptibility to waterlogging are other common features of Australian soils, while large areas are naturally affected by salt or acidity. These soil characteristics restrict particular agricultural activities, sometimes ruling out agricultural activity altogether.

With the exception of Antarctica, Australia is the world's driest continent. More than a third of the continent is effectively desert, and over two-thirds of the continent is classified as arid or semi-arid. The wet summer conditions of northern Australia are suited to beef cattle grazing in inland areas and the growing of sugar and tropical fruits in coastal areas. The drier summer conditions of southern Australia favour wheat and other dryland cereal farming, sheep grazing, beef cattle and dairy cattle (in the higher rainfall areas). There is also a high degree of annual rainfall variability within regions and this is most pronounced in arid and semi-arid regions.

Rainfall variability is very high by global standards and often results in lengthy periods without rain. The variability and seasonality of rainfall in Australia requires that water be stored. Under normal seasonal conditions, the ability of primary producers to store water ensures that there are adequate supplies for those agricultural activities requiring a continuous supply. The development of large scale irrigation schemes has opened up areas of inland Australia to agricultural activities that otherwise would not have been possible.

Evaporation is another important element of Australia's environment, affecting agricultural

production, with hot dry summers causing high rates of evaporation in many parts of the country. Since European settlement, the vegetation of Australia has altered significantly. In particular, large areas of Australia's forest and woodland vegetation systems have been cleared, predominantly for agricultural activity. The areas that have been altered most are those that have been opened up to cultivation or intensive grazing. Some semi-arid regions previously cleared of timber and scrub to allow grazing of native grasses, now show signs of returning to their previous condition. In recent years, various state and territory legislation has seen restrictions applied to the area of old growth and regrowth forest and woodland that can be cleared without a permit.

Land use

In spite of Australia's generally harsh environment, agriculture is the most extensive form of land use. During 2009–10, the estimated total area of businesses with agricultural activity was 399 million hectares, representing 52% of the total land area – 6.5% of which had been cropped (table 16.7).

Queensland had 130 million hectares devoted to agricultural activity, while Western Australia had 94 million hectares (graph 16.8). Land area not used for agriculture consisted of unoccupied land (mainly desert in western and central Australia), Aboriginal land reserves (mainly located in the Northern Territory and Western Australia), forests, mining leases, national parks and urban areas.

16.7 LAND USE BY AGRICULTURAL BUSINESSES—Year ended 30 June

	Area planted to crops(a)	Area of farms(b)	Farms as a percentage of total land area(c)
	('000 ha)	('000 ha)	%
2008	24 374	417 288	54.2%
2009	27 511	409 029	53.2%
2010	25 968	398 580	51.8%

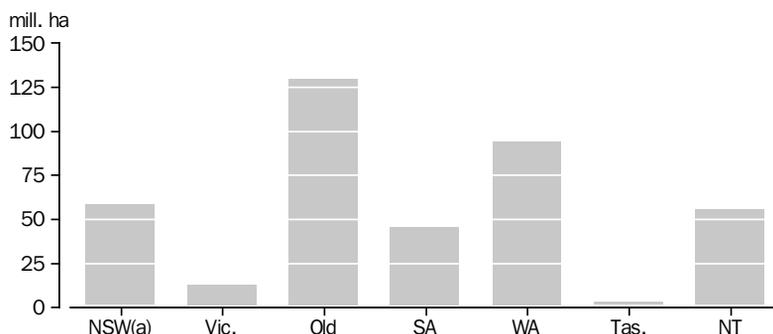
(a) Excludes crops harvested for hay and seed, and pastures and grasses.

(b) Total area of agricultural businesses with an estimated value of agricultural operations (EVAO) of \$5,000 or more.

(c) Total area of Australia includes Jervis Bay.

Source: *Agricultural Commodities, Australia (7121.0)*.

16.8 AREA OF BUSINESSES WITH AGRICULTURAL ACTIVITY—2009–10



(a) Includes Australian Capital Territory.

Source: *Agricultural Commodities, Australia (7121.0)*.

Irrigation

High variability in annual rainfall and river flow is a feature of the Australian environment and this means that successful ongoing production of many crops and pastures is dependent on irrigation. In 2009–10, 30% (40,816) of all agricultural businesses reported irrigation activity and in total 6,600 gigalitres of irrigation water was applied – an average application rate of 3.6 megalitres per irrigated hectare.

Rice, cotton, grapes, vegetables and nurseries/cut flowers/cultivated turf are the most intensively irrigated crops, with 100%, 100%, 95%, 86%, and 78% respectively of their total growing areas being irrigated in 2009–10. However, the total area of land irrigated, about 1.8 million hectares in 2009–10, represents less than 1% of the total land used for agriculture (table 16.9).

Most irrigated land is located within the confines of the Murray-Darling Basin, which covers parts of New South Wales, Victoria, Queensland and South Australia, and all of the Australian Capital Territory.

Agricultural production

This section includes detailed information on agricultural production in Australia.

The first part covers the gross value of agricultural commodities produced, while the second looks at the value of irrigated production.

The remainder of the section provides detailed data on individual agricultural commodities, including: the areas planted and yields for the major crops grown in Australia; livestock numbers and other information for the main livestock animals produced; and information on the production, value and trade in major livestock products.

Gross value of agricultural commodities produced

The following estimates of gross value of agricultural commodities produced (GVACP) are presented in current prices, and therefore changes between years do not show the impact of changes in prices over time.

16.9 PASTURES AND CROPS IRRIGATED, By state and territory—2009–10

	NSW(a)	Vic.	Qld	SA	WA	Tas.	NT	Aust.
AREA IRRIGATED (ha)								
Pasture and cereal crops used for grazing or fed off	133 035	240 917	^50 683	^45 565	^15 890	55 988	44	542 121
Pasture and cereal crops cut for hay	39 719	^45 789	^27 201	^20 818	^896	4 215	^303	138 940
Pasture and cereal crops cut for silage	^18 465	^16 731	^11 199	*3 588	np	np	—	53 307
Rice	np	np	np	—	—	—	—	18 931
Other cereals for grain or seed	151 487	^18 702	37 076	^5 137	np	3 772	np	217 632
Cotton	80 075	—	73 114	—	—	—	—	153 189
Sugar cane	np	—	np	—	—	—	—	212 615
Other broadacre crops	^21 100	np	^13 876	*1 438	3 014	17 140	np	59 055
Fruit trees, nut trees, plantation or berry fruits	26 455	45 553	33 578	14 940	7 469	^3 057	3 170	134 221
Vegetables for human consumption	14 761	25 158	29 383	11 775	8 007	14 565	675	104 324
Nurseries, cut flowers and cultivated turf	^3 854	3 042	4 013	^775	^1 154	np	np	13 143
Grapevines	37 275	^38 069	np	71 915	^11 180	^1 313	np	162 602
Total	550 158	440 719	502 600	186 494	50 815	104 803	5 021	1 840 610
VOLUME APPLIED (ML)								
Pasture and cereal crops used for grazing or fed off	299 901	^797 760	^154 718	^214 316	^89 479	165 289	^139	1 721 602
Pasture and cereal crops cut for hay	^141 445	^109 455	^87 836	^74 744	^5 628	10 462	^3 263	432 833
Pasture and cereal crops cut for silage	^41 787	^27 542	^28 348	*11 836	np	np	—	118 336
Rice	np	np	np	—	—	—	—	246 909
Other cereals for grain or seed	393 866	^31 762	112 499	*6 621	**15 533	np	np	567 821
Cotton	468 843	—	383 107	—	—	—	—	851 950
Sugar cane	np	—	np	—	—	—	—	756 317
Other broadacre crops	*42 314	np	32 416	*3 175	20 879	34 616	np	^139 292
Fruit trees, nut trees, plantation or berry fruits	116 531	259 716	122 668	103 372	36 519	^7 649	8 208	654 663
Vegetables for human consumption	68 552	93 797	87 576	73 272	50 315	44 322	1 395	419 229
Nurseries, cut flowers and cultivated turf	^18 629	11 247	18 438	^2 880	10 783	896	610	63 483
Grapevines	150 649	^155 293	^16 279	174 513	^14 019	np	np	515 484
Total	2 002 797	1 504 742	1 823 870	711 991	252 058	281 953	18 628	6 596 040

np not available for publication but included in totals where applicable, unless otherwise indicated

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Includes Australian Capital Territory.

Source: *Water Use on Australian Farms* (4618.0).

The contribution of agriculture to the Australian economy can be measured in a number of ways. The most direct measurement available is the gross value of agricultural production. For the year ending 30 June 2010, the gross value of agricultural production, in current prices, was \$39.6 billion (table 16.10). On a commodity basis, cattle and calf slaughterings contributed most to

the gross value of production (\$7.3b), followed by wheat (\$4.8b), milk (\$3.4b), vegetables (\$3.0b), fruit and nuts (\$3.0b) and, sheep and lamb slaughterings (\$2.6b).

Table 16.11 shows the gross value of agricultural production by state and territory. The value in 2009–10 was highest for Victoria (\$10.3b), followed by Queensland (\$9.1b).

16.10 GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED

	2007-08	2008-09	2009-10
	\$m	\$m	\$m
Cereals for grain			
Wheat	5 291.9	6 021.0	4 765.4
Oats	422.5	251.0	185.6
Barley	2 244.0	1 849.8	1 356.1
Sorghum	977.4	552.5	295.7
Rice	7.3	^ 34.5	89.9
Other	—	298.9	113.2
Cotton(a)	227.3	650.8	753.9
Fruit and nuts (excluding grapes)	2 757.5	2 871.0	2 950.3
Grapes	1 693.6	1 213.0	1 109.5
Hay(b)	2 817.9	1 619.8	1 614.8
Legumes for grain			
Lupins	221.5	198.1	204.9
Other	—	424.8	520.1
Nursery production(c)	1 432.8	1 294.9	1 323.7
Oilseeds			
Canola	658.6	1 011.4	839.8
Other	—	87.3	66.0
Sugar cane for crushing	861.0	1 020.8	1 381.7
Vegetables	3 362.7	3 012.3	3 023.2
All other crops(d)	842.1	^ 444.7	*666.3
Total crops	23 818.2	22 856.6	21 260.1
Livestock slaughterings and other disposals			
Cattle and calves	7 353.3	7 451.7	7 267.7
Sheep and lambs(e)	2 167.9	2 492.2	2 627.0
Pigs	901.7	894.7	902.8
Poultry	1 636.6	1 861.5	1 784.7
Other livestock	44.2	51.6	76.6
Total livestock slaughterings and other disposals	12 103.6	12 751.7	12 658.7
Livestock products			
Wool(f)	2 309.0	1 805.7	1 927.5
Whole milk	4 571.7	3 987.6	3 371.3
Eggs	467.6	446.9	427.5
Total livestock products	7 348.3	6 240.3	5 726.3
Total Agriculture	43 270.2	41 848.6	39 645.1

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

— nil or rounded to zero (including null cells)

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Includes value of cotton lint and cotton seed.

(b) Includes pastures, cereals and other crops cut for hay.

(c) Includes nurseries, cut flowers and cultivated turf.

(d) In 2009-10, component commodity items were not collected separately.

(e) Excludes value of wool on skins.

(f) Includes value of dead wool and wool on skins.

Source: *Value of Agricultural Commodities Produced, Australia, 2009-10 (7503.0)*.

16.11 GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED, By state and territory—2009–10

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Cereals for grain								
Wheat	1 154.7	648.2	301.1	839.3	1 815.3	6.8	—	*0.1
Oats	40.8	^ 57.2	^ 1.3	15.7	69.5	1.2	—	*—
Barley	^ 230.0	332.5	24.1	313.7	447.9	8.0	—	—
Sorghum	^ 123.7	—	171.9	—	—	—	—	—
Rice	88.9	**0.1	^ 0.9	—	—	—	—	—
Other	^ 43.3	^ 17.1	^ 25.2	^ 13.8	^ 13.2	^ 0.7	^ —	—
Cotton(a)	452.8	—	301.1	—	—	—	—	—
Fruit and nuts (excluding grapes)	474.3	833.8	1 009.7	287.0	^ 217.1	83.4	45.0	—
Grapes	173.8	^ 378.9	^ 35.7	385.4	*112.5	^ 19.0	3.9	*0.3
Hay(b)	257.0	806.5	136.4	194.3	142.4	64.9	13.1	^ 0.1
Legumes for grain								
Lupins	^ 31.1	^ 10.8	*0.1	15.2	147.6	*0.2	—	—
Other	173.1	^ 84.4	91.0	146.2	^ 24.9	0.5	—	—
Nursery production(c)	299.8	450.8	327.8	^ 63.2	^ 144.2	29.0	6.3	2.4
Oilseeds								
Canola	122.8	^ 147.5	**0.5	108.6	459.4	1.0	—	—
Other	^ 41.6	**2.1	^ 15.6	**1.3	*5.3	0.1	—	—
Sugar cane for crushing	^ 65.4	—	1 316.2	—	—	—	—	—
Vegetables	375.2	727.4	868.8	480.1	316.1	233.1	22.4	*0.1
All other crops(d)	^ 30.6	**342.3	^ 128.3	^ 35.1	*14.4	114.5	1.1	*—
Total crops	4 179.0	4 839.4	4 755.7	2 898.9	3 929.8	562.4	91.8	3.0
Livestock slaughtering and other disposals								
Cattle and calves	1 487.6	1 276.3	3 228.7	308.2	537.1	142.5	285.2	2.3
Sheep and lambs(e)	584.3	1 045.6	45.1	448.4	460.9	41.1	—	1.7
Pigs	214.8	166.7	230.9	np	np	np	—	—
Poultry	576.9	487.1	358.5	np	np	np	—	0.2
Other livestock	7.9	26.5	24.6	8.4	6.0	—	3.1	—
Total livestock slaughtering and other disposals	2 871.5	3 002.1	3 887.8	1 174.2	1 220.1	210.7	288.3	4.1
Livestock products								
Wool(f)	641.1	435.1	87.2	284.0	415.4	64.6	—	0.1
Whole milk	522.4	1 961.9	296.2	209.6	148.6	232.6	—	—
Eggs	^ 145.3	108.7	110.3	12.3	38.8	8.7	—	3.4
Total livestock products	1 308.8	2 505.8	493.6	505.9	602.9	305.8	—	3.6
Total Agriculture	8 359.2	10 347.3	9 137.1	4 578.9	5 752.8	1 078.9	380.1	10.7

— nil or rounded to zero

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes value of cotton lint and cotton seed.

(b) Includes pastures, cereals and other crops cut for hay.

(c) Includes nurseries, cut flowers and cultivated turf.

(d) In 2009–10, component commodity items were not collected separately.

(e) Excludes value of wool on skins.

(f) Includes value of dead wool and wool on skins.

Source: *Value of Agricultural Commodities Produced, Australia, 2009–10 (7503.0)*.

Gross value of irrigated production

The following estimates of gross value of irrigated agricultural production (GVIAP) are presented in current prices, and therefore changes between years do not show the impact of changes in prices over time.

In 2009–10, irrigated agricultural land comprised less than 1% of all agricultural land in Australia. However, the gross value of production from irrigated land was \$11.5 billion, which represented 29% of the total gross value of agricultural production in 2009–10 (table 16.12). The vegetable commodity group was the highest contributor to the total value of irrigated production, at \$2,386 million, followed by fruit (\$2,242m) and dairy production (\$1,826m). These three commodities accounted for 56% of total GVIAP in 2008–09.

Information on use of agricultural water for irrigation can be found in chapter 2 *Environment*.

Crops

In 2009–10, 26.0 million hectares were sown to crops, excluding land used for pastures and grasses. Western Australia cropped 8.6 million hectares while New South Wales and South Australia cropped 6.9 million hectares and 4.1 million hectares respectively (table 16.13). Wheat was Australia's biggest crop in terms of area used, with 13.9 million hectares planted, or over half the land area dedicated to cropping (table 16.14). In terms of production, sugar cane for crushing reaped the most plentiful yield, with 80.2 tonnes per hectare.

16.12 GROSS VALUE OF IRRIGATED AGRICULTURAL PRODUCTION AUSTRALIA(a)

Commodity groups	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m	\$m
Cereals for grain and seed(b)	207.3	200.3	223.2	318.7	316.7	143.1
Total hay production(c)	221.9	240.0	295.4	247.6	170.0	191.8
Cereals for hay(d)	^ 17.3	na	na	na	^ 21.1	na
Pastures for hay(d)	204.6	na	na	na	148.8	na
Pastures for seed(d)	*44.5	na	na	na	^ 60.0	na
Cotton(e)	^ 908.1	869.8	485.8	208.1	620.3	664.3
Rice	100.6	273.7	^ 55.0	7.3	^ 34.5	89.9
Sugar cane(f)	459.9	496.9	583.1	451.6	537.1	750.4
Other broadacre crops	^ 72.2	65.7	52.6	52.2	86.9	115.9
Fruit and nuts(g)	1 948.8	2 137.2	2 913.2	2 291.9	2 389.6	2 242.3(h)
Grapes	1 361.9	1 251.5	1 040.5	1 597.2	1 200.4	1 069.5
Vegetables for human consumption and seed(i)	1 741.3	2 453.2	2 677.9	2 971.9	2 624.9	2 385.8
Nurseries, cut flowers and cultivated turf	651.0	1 165.9	1 187.4	1 171.8	982.8	1 036.5
Dairy production	1 802.5	1 877.7	1 697.1	2 288.8	2 273.8	1 825.6
Production from meat cattle	810.9	968.1	989.1	496.0	454.7	608.1
Production from sheep and other livestock(j)	239.4	257.2	287.3	208.2	201.1	^ 361.6
Total	10 570.3	12 257.2	12 487.6	12 311.3	11 952.7	11 484.6

na not available

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Current prices.

(b) Excludes rice.

(c) Includes 'other crops for hay' in 2005–06, 2006–07 and 2007–08. However, in 2004–05 and 2008–09, 'other crops for hay' is included in Other broadacre crops.

(d) Data not collected as a separate data item in 2005–06, 2006–07 and 2007–08.

(e) Includes value of cotton seed.

(f) Includes sugar cane cut for crushing and plants.

(g) Includes fruit trees, nut trees, plantation and berry fruits; excludes grapes.

(h) Excludes nuts.

(i) In 2007–08, production information on Vegetables for Seed was not collected.

(j) Includes value of sheep and lambs slaughtered and value of wool. Includes value of domesticated buffalo and goats slaughtered. Excludes all cattle, pigs, poultry and eggs.

Source: *Experimental Estimates of the Gross Value of Irrigated Agricultural Production, 2000–01 to 2009–10 (4610.0.55.008)*.

16.13 AREA PLANTED TO CROPS(a), By state and territory—Year ended 30 June

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha
2008	6 816	3 655	2 183	4 257	7 396	52	*14	*1	24 374
2009	7 650	4 189	2 795	4 493	8 306	73	6	1	27 511
2010	6 940	3 989	2 321	4 080	8 564	66	7	^1	25 968

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Excludes crops harvested for hay and seed, and pastures and grasses.

Source: *Agricultural Commodities, Australia (7121.0)*.

16.14 CROP PRODUCTION—Year ended 30 June

	AREA			PRODUCTION				
	unit	2008	2009	2010	unit	2008	2009	2010
VEGETABLES(a)								
Carrots	(ha)	4 934	5 174	5 494	(t)	272 601	263 527	267 442
Mushrooms	(ha)	179	159	139	(t)	47 103	43 416	41 295
Onions(b)	(ha)	5 013	5 463	5 329	(t)	254 362	283 819	259 947
Potatoes(c)	(ha)	38 190	32 579	36 379	(t)	1 400 206	1 178 534	1 278 118
Tomatoes(c)	(ha)	6 796	6 789	7 734	(t)	381 824	440 093	471 883
CROPS FOR GRAIN								
Barley	('000 ha)	4 902	5 015	4 422	('000 t)	7 160	7 997	7 865
Grain sorghum	('000 ha)	942	767	498	('000 t)	3 790	2 692	1 508
Oats	('000 ha)	1 238	870	850	('000 t)	1 502	1 160	1 162
Rice	('000 ha)	2	^ 7	19	('000 t)	18	^ 61	197
Wheat	('000 ha)	12 578	13 530	13 881	('000 t)	13 569	21 420	21 834
Lupins	('000 ha)	752	577	692	('000 t)	662	708	823
OTHER CROPS								
Canola	('000 ha)	1 277	1 693	1 695	('000 t)	1 214	1 844	1 907
Cotton lint	('000 ha)	69	159	196	('000 t)	119	309	352
Sugar cane cut for crushing	('000 ha)	381	391	389	('000 t)	32 621	31 457	31 235
CITRUS FRUITS								
Mandarins	Trees ('000)	1 340	1 291	1 447	(t)	^ 94 364	90 316	91 002
Oranges	Trees ('000)	6 053	6 759	6 791	(t)	409 273	347 724	391 343
POME(d)								
Apples	Trees ('000)	8 685	7 642	7 501	(t)	265 481	295 134	264 401
Pears(e)	Trees ('000)	1 729	1 643	1 427	(t)	130 492	120 376	95 111
OTHER FRUIT AND NUTS								
Bananas(f)	Area (ha)	9 853	11 992	11 543	(t)	207 062	270 393	302 173
Strawberries(f)	Area (ha)	1 297	1 184	1 747	(t)	24 507	28 246	29 334
Macadamias	Trees ('000)	3 416	3 872	3 898	(t)	32 787	29 661	31 314
Mangoes	Trees ('000)	1 287	1 342	1 178	(t)	48 928	40 660	44 342
Peaches(c)	Trees ('000)	2 270	2 127	2 077	(t)	68 369	76 791	77 683

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Vegetable data for 2007–08 are sourced from a supplementary Vegetable Survey.

(b) Includes brown, red and white onions.

(c) Includes fresh market and processing.

(d) Apples and Pears data for 2007–08 are sourced from a supplementary Apples and Pears Survey.

(e) Includes Nashi pears.

(f) Area refers to area of bearing age.

Source: *Agricultural Commodities Australia (7121.0)*.

In Australia, cereals are divided into autumn-winter-spring growing (winter cereals) and spring-summer-autumn growing (summer cereals). In temperate regions, winter cereals such as wheat, oats, barley and rye are often grown in rotation with pastures, such as subterranean clover, medics or lucerne, and with other winter crops such as canola, field peas and lupins. Rice, maize and sorghum are summer cereals, often grown in rotation with winter cereals in some areas.

Table 16.15 shows production and area planted for major broadacre crops by state.

Wheat

Wheat is produced in all states but primarily on the mainland in a narrow crescent known as the 'wheat belt'. Inland of the Great Dividing Range, the wheat belt stretches in a curve from central Queensland through New South Wales, Victoria and southern South Australia. In Western Australia, the wheat belt continues around the south-west of the state and some way north, along the western edge of the continent.

Graph 16.16 shows wheat production in Australia from 1910 to 2010.

16.15 BROADACRE CROPS, By state and territory—2009–10

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
BARLEY							
Production ('000 t)	^ 1 236	1865	113	2 068	2 554	29	7 865
Area ('000 ha)	951	976	69	997	1 420	9	4 422
CANOLA							
Production ('000 t)	281	^ 331	**1	260	1 031	2	1 907
Area ('000 ha)	298	^ 231	**3	181	981	1	1 695
COTTON LINT							
Production ('000 t)	214	—	138	—	—	—	352
Area ('000 ha)	^ 109	—	88	—	—	—	196
GRAIN SORGHUM							
Production ('000 t)	^ 581	—	926	—	—	—	1 508
Area ('000 ha)	164	—	333	—	1	—	498
LUPINS							
Production ('000 t)	^ 84	^ 33	*—	74	631	*—	823
Area ('000 ha)	102	^ 36	*—	53	500	*—	692
OATS							
Production ('000 t)	211	^ 300	^ 7	144	493	7	1 162
Area ('000 ha)	307	168	^ 12	96	263	4	850
RICE							
Production ('000 t)	195	**—	^ 2	—	—	—	197
Area ('000 ha)	np	np	np	—	—	—	19
SUGAR CANE CUT FOR CRUSHING							
Production ('000 t)	^ 1 905	—	29 330	—	—	—	31 235
Area ('000 ha)	^ 19	—	370	—	—	—	389
WHEAT							
Production ('000 t)	5 350	2 995	1 346	4 001	8 114	27	21 834
Area ('000 ha)	3 983	1 801	962	2 122	5 006	7	13 881

np not available for publication but included in totals where applicable, unless otherwise indicated

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

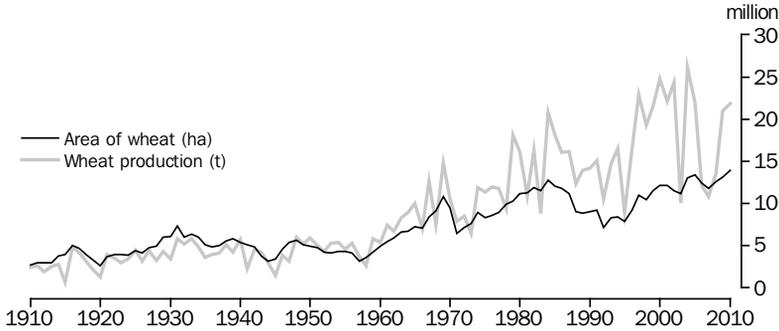
** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Includes all states and territories.

Source: *Agricultural Commodities, Australia (7121.0)*.

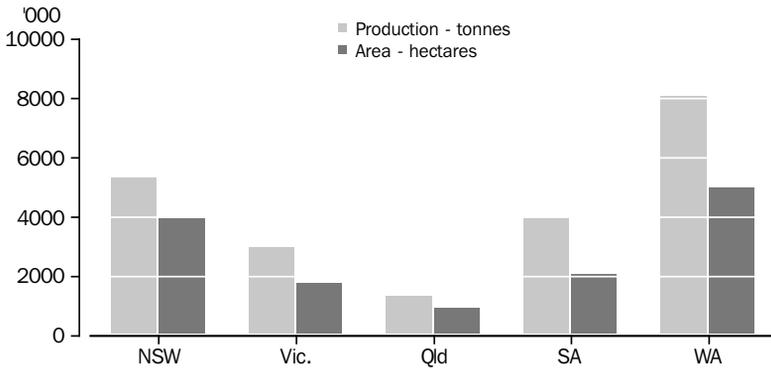
16.16 WHEAT PRODUCTION(a)—1910–2010



(a) Due to the scale of this graph, breaks in the time series have not been noted.

Source: *Historical Selected Agriculture Commodities, by State (7124.0)*.

16.17 WHEAT PRODUCTION AND AREA, By state—2009–10



Source: *Agricultural Commodities, Australia (7121.0)*.

In 2009–10, farmers planted 13.9 million hectares to wheat and harvested 21.8 million tonnes. Western Australia planted and harvested the most wheat followed by New South Wales and South Australia (table 16.15 and graph 16.17).

New varieties of wheat have enabled it to be grown in more marginal areas. In particular, the development of dual purpose winter wheat varieties which, like oats, allow grazing of the plant up to a few months prior to harvest, have become very popular in some areas.

Oats

Oats are traditionally grown in moist, temperate regions. However, improved varieties and management practices have enabled oats to be grown over a wider range of soil and climatic conditions. Oats have a high fodder feed value

and, with the exception of dual purpose varieties of wheat, produce a greater bulk of growth than other winter cereals. They need less cultivation, and respond well to superphosphate and nitrogen. Oats have two main uses – as a grain crop and as a fodder crop. Fodder crops can be grazed in the initial stages of growth and then locked up for a period prior to harvesting for grain, or cut for hay, silage or chaff.

The majority of Australian oats harvested for grain are used domestically for stock feed purposes. A small proportion of high quality grain is used either domestically or exported for human consumption.

In 2009–10, farmers planted 850,000 hectares of oats and harvested 1.2 million tonnes. Western Australia produced the most oats (493,000 tonnes), followed by Victoria (300,000 tonnes) (table 16.15 and graph 16.18).

Barley

Barley has two main groups of varieties, 2-row and 6-row (the number of rows referring to the number of rows of seed on each stalk). The former is generally, but not exclusively, preferred for malting purposes. Barley is grown principally as a grain crop, although in some areas it is used as a fodder crop for grazing, with grain being subsequently harvested if conditions are suitable. It is often grown as a rotation crop with wheat, oats and pasture. As barley has a short growing period, it may provide quick grazing or timely fodder supplies when other sources are not available. Barley grain may be crushed to meal for stock feed or sold for malting.

In 2009–10, 7.9 million tonnes of barley were harvested from 4.4 million hectares (table 16.15 and graph 16.19). The largest areas planted were

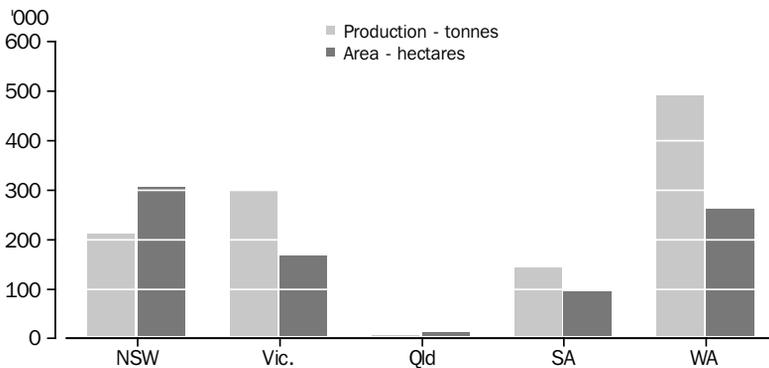
in Western Australia (1.4 million ha), followed by South Australia and Victoria (each with nearly 1.0 million ha). Production was highest in Western Australia with 2.6 million tonnes, followed by South Australia and Victoria, with 2.1 million tonnes and 1.9 million tonnes respectively.

Grain sorghum

Grain sorghum is used primarily as stock feed and is an important source for supplementing other coarse grains for this purpose.

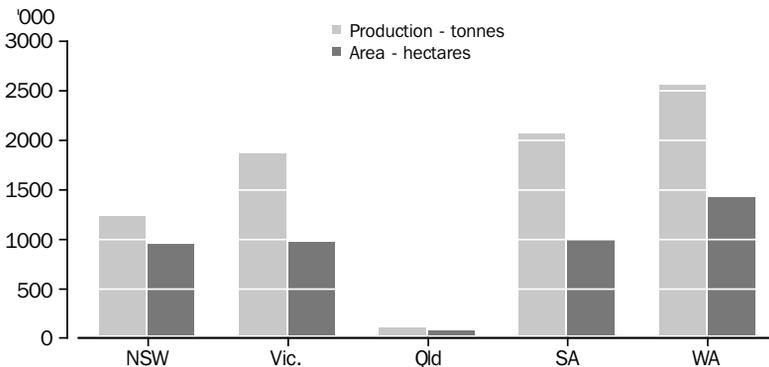
Grain sorghum was only grown in significant quantities during 2009–10 in Queensland and New South Wales, with Queensland growing 926,000 tonnes on 333,000 hectares and New South Wales growing 581,000 tonnes on 164,000 ha (table 16.15).

16.18 OATS PRODUCTION AND AREA, By state—2009–10



Source: Agricultural Commodities, Australia (7121.0).

16.19 BARLEY PRODUCTION AND AREA, By state—2009–10



Source: Agricultural Commodities, Australia (7121.0).

Rice

Almost all of Australia's rice is grown in New South Wales, with production centred in the Murrumbidgee Irrigation Area. Rice production is largely dependent on supplies of irrigation water.

In 2009–10, rice plantings covered 19,000 hectares and produced 197,000 tonnes (table 16.15).

Canola

Canola is Australia's most commonly grown oilseed crop and is used for the production of oil and as a protein source in stock feed. Over the three years, 2007–08 to 2009–10, canola accounted for over 90% of the value of all oilseed production. Canola was first planted in Australia in 1980 but it was not until the late 1980s that high yielding blackleg-resistant varieties became available. By the early 1990s, production was becoming more widespread and canola was emerging as the main oilseed crop. From a production level of 70,000 tonnes in 1990–91, a record high of 2.8 million tonnes was achieved nine years later in 1999–2000. In 2009–10, farmers harvested 1.9 million tonnes, a slight increase on the previous year (table 16.14). Western Australia produced 54% of the total canola production for Australia (table 16.15 and graph 16.20).

Cotton

Cotton is grown mainly in inland areas of northern New South Wales and southern Queensland, primarily for its fibre (lint), and relies heavily on irrigation water to produce

profitable yields. When the cotton is mature, seed cotton is taken to a gin where it is separated (ginned) into cotton lint and cotton seed. The lint is used for yarn while the cotton seed is further processed at an oil mill, where the short fibres (linters) remaining on the cotton seed after ginning are removed. These fibres are too short to make into cloth, but are used for wadding, upholstery and paper. The seeds are then separated into kernels and hulls. The hulls are used for stock feed and as fertiliser, while the kernels are crushed to extract oil. The oilcake residue (crushed kernels) is ground into meal and used as a stock feed.

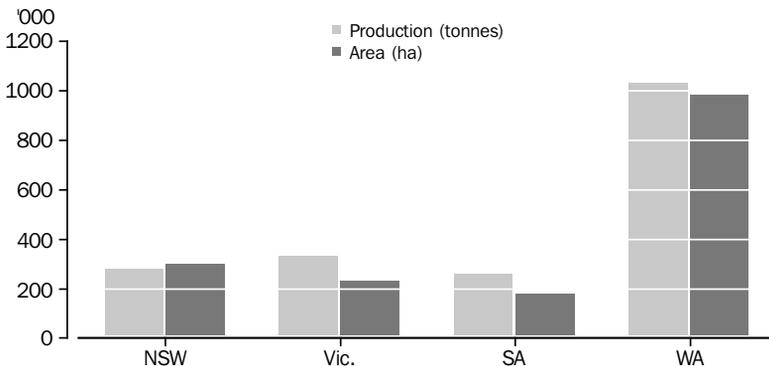
In 2009–10, cotton lint production was estimated at 352,000 tonnes from 196,000 hectares harvested (table 16.14). New South Wales was the dominant growing state, with 61% of total production (214,000 tonnes) on 109,000 hectares (table 16.15). Queensland harvested 88,000 hectares and produced 138,000 tonnes of cotton lint.

Sugar cane

Sugar cane is grown commercially in Australia along the east coast over a distance of more than 2,000 kilometres from Maclean in northern New South Wales to Mossman in Queensland. In 2009–10, a total of 389,000 hectares of sugar cane was cut for crushing (table 16.14).

More than 90% (29.3 million tonnes) of the 31.2 million tonnes of sugar cane cut in 2009–10 was grown in Queensland from 370,000 hectares (table 16.15).

16.20 CANOLA PRODUCTION AND AREA, By state—2009–10



Source: *Agricultural Commodities, Australia (7121.0)*.

Vegetables

Australia produces an extremely wide variety of vegetables. Many vegetables, such as spring onions, mushrooms and fresh tomatoes are grown close to major capital cities, taking advantage of proximity to markets and low transport costs. However, the majority of vegetables are produced in the major irrigation areas of each state and territory, where access to land and water are the key drivers of investment.

In 2009–10, potatoes were by far the largest vegetable crop in terms of both area and production, covering 36,400 hectares and producing 1.3 million tonnes (table 16.14). South Australia, Tasmania and Victoria produced over 75% of the total potato crop. Tomato production ranked second, with Victoria and Queensland producing over 80% of the 472,000 tonnes grown nationally.

Fruit (excluding grapes)

A wide variety of fruit is grown in Australia, ranging from tropical fruit such as mangoes and bananas in the north to pome, stone and berry fruits in temperate regions. The most significant crops in terms of production weight in 2009–10 were oranges, bananas and apples (table 16.14).

Wine grapes

Grapes are a temperate crop optimally requiring rainfall during the winter period and warm to hot conditions for ripening. In addition, most grape producers in Australia use irrigation water to supplement rainfall. An absence of late spring frosts is essential to prevent the loss of developing fruit. Grapes are grown for

winemaking, drying and table use. The better known grape producing areas are the Adelaide Hills, Barossa Valley, Clare Valley, Riverland, McLaren Vale and Coonawarra (all in South Australia); Sunraysia and the Yarra Valley (Victoria); the Hunter and Riverina (New South Wales); the Swan Valley and Margaret River (Western Australia); and the Tamar Valley and Coal River Valley (Tasmania).

In 2009–10, Australia's vineyards produced 1.5 million tonnes of wine grapes on 152,000 hectares of bearing vines. Table 16.21 shows information on wine grape production, including the area of vines and the quantity of grapes produced. South Australia produced 48% of the total grape harvest, with 731,000 tonnes, while New South Wales (443,000 tonnes) and Victoria (284,000 tonnes) also produced large quantities (table 16.22).

Livestock

Cattle, sheep and pigs are the main livestock grown in Australia and have been present since the earliest days of European settlement.

Table 16.23 shows the number of cattle, sheep and lambs, and pigs in Australia as at 30 June, from 2008 to 2010.

Cattle

Cattle farming occurs in all states and territories. While dairy cattle are mainly found in southern and coastal districts, beef cattle are concentrated in Queensland and New South Wales.

Beef cattle production is often combined with cropping, dairying and sheep production. In the

16.21 WINE GRAPE VARIETALS, Area, production and yield—2009–10

	AREA NOT YET BEARING (PLANTED OR GRAFTED)				Total area(b) ha	Area removed(c) ha	Production(d) t	Yield(e) t/ha
	Bearing area(a) ha	Before the	After the					
		2009 harvest ha	2009 harvest ha					
Red wine grapes	92 431	1 554	825	94 809	3 847	845 305	9.1	
White wine grapes	59 358	1 884	581	61 823	4 316	687 941	11.6	
Total wine grapes	151 789	3 438	1 406	156 632	8 164	1 533 246	10.1	

(a) Bearing area includes area of vines with no or minimal yields.

(b) Total area of grapes refers to the area of vines at harvest and includes bearing area and not yet bearing area.

(c) Area of varieties removed by grubbing, grafting off or abandoning to die, after the 2009 harvest but before the 2010 harvest.

(d) Production for winemaking or distillation (fresh weight).

(e) Yield represents the quantity of grapes produced per hectare of bearing vines.

Source: *Vineyards Estimates, Australia, 2009–10 (1329.0.55.002)*.

16.22 WINE GRAPE VARIETALS: AREA, PRODUCTION AND YIELD, By state and territory—2009–10

	NSW	Vic.	Qld	SA	WA	Tas.	ACT	Aust.
RED WINE GRAPES								
Total area of grapes (ha)(a)	20 959	15 353	497	51 506	5 791	646	58	94 809
Production (t)(b)	192 151	139 476	869	482 262	26 675	3 547	324	845 305
Yield (t/ha)(c)	9.4	9.3	1.8	9.6	4.7	5.9	5.9	9.1
WHITE WINE GRAPES								
Total area of grapes (ha)(a)	21 662	11 145	285	21 903	6 031	742	55	61 823
Production (t)(b)	250 457	144 579	582	248 366	39 792	3 841	324	687 941
Yield (t/ha)(c)	12.2	13.3	2.2	11.7	7.0	5.9	5.9	11.6
TOTAL WINE GRAPES								
Total area of grapes (ha)(a)	42 621	26 498	782	73 409	11 822	1 388	113	156 632
Production (t)(b)	442 608	284 055	1 452	730 628	66 467	7 388	648	1 533 246
Yield (t/ha)(c)	10.8	11.0	1.9	10.2	5.9	5.9	5.9	10.1

(a) Total area of grapes refers to the area of vines at harvest and includes bearing area and not yet bearing area.

(b) Production for winemaking or distillation (fresh weight).

(c) Yield represents the quantity of grapes produced per hectare of bearing vines.

Source: *Vineyards Estimates, Australia, 2009–10 (1329.0.55.002)*.

16.23 LIVESTOCK, Australia—At 30 June

	2008	2009	2010
CATTLE ('000)			
Milk cattle			
Cows in milk and dry	1 640	1 676	1 596
All other milk cattle(a)	897	936	947
Total	2 537	2 612	2 542
Meat cattle			
Cows and heifers one year and over	13 472	12 903	12 945
All other meat cattle(b)	11 312	12 392	11 062
Total	24 784	25 294	24 008
Total cattle and calves(c)	27 321	27 907	26 550
SHEEP ('000)			
Breeding ewes one year and over(d)	45 411	40 867	42 265
All other sheep(e)	31 526	31 873	25 820
Total	76 938	72 740	68 085
PIGS ('000)			
Breeding sows	263	242	232
All other pigs(f)	2 149	2 060	2 058
Total	2 412	2 302	2 289

(a) Includes heifers 1 to 2 years, heifers over 2 years, and other dairy cattle (calves, bulls and bull calves).

(b) Includes bulls, steers and calves.

(c) Includes dairy and meat cattle for all purposes.

(d) Includes maiden ewes intended for breeding.

(e) Includes rams, marked lambs, wethers, hoggets and non-breeding ewes.

(f) Including boars, gilts, suckers, weaners, growers and finishers.

Source: *Agricultural Commodities, Australia (7121.0)*.

northern half of Australia, cattle properties and herd sizes are very large, pastures are generally unimproved, fodder crops are rare and beef is usually the only product. The industry is more intensive in the south, with higher stocking rates per hectare, improved pastures and use

of fodder crops, rotational grazing practices and increased inputs such as fertiliser and animal health products. The beef cattle farming industry remained the largest sector in 2009–10, comprising nearly a third of businesses classified to the agriculture industry.

16.24 LIVESTOCK, By state and territory—At 30 June 2010

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT
CATTLE ('000)								
Milk cattle								
Cows in milk and dry	203	1 028	88	87	^65	124	—	*—
All other milk cattle(a)	145	561	74	51	48	67	^—	*—
Total	348	1 589	162	139	^113	192	^—	*—
Meat cattle								
Cows and heifers one year and over	2 796	1 016	5 953	489	1 214	217	1 256	5
All other meat cattle(b)	2 311	1 064	5 240	415	992	229	810	^2
Total	5 107	2 080	11 193	904	2 206	446	2 066	6
Total cattle and calves(c)	5 455	3 668	11 356	1 042	2 319	637	2 066	6
Proportion of total herd								
Milk cattle (%)	6.4	43.3	1.4	13.3	^4.9	30.1	^—	*0.1
Meat cattle (%)	93.6	56.7	98.6	86.7	95.1	69.9	100.0	99.9
SHEEP ('000)								
Breeding ewes one year and over(d)	15 349	8 808	^1 888	5 793	9 200	1 203	*—	^25
All other sheep(e)	9 018	5 569	^1 734	3 197	5 491	789	*—	^22
Total	24 366	14 378	^3 622	8 989	14 692	1 991	*—	^47
PIGS ('000)								
Breeding sows	59	^54	52	42	23	1	^—	—
All other pigs(f)	^526	456	531	339	196	^10	^—	—
Total	^585	510	583	381	219	^11	^—	—

— nil or rounded to zero (including null cells)

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Includes heifers 1 to 2 years, heifers over 2 years, and other dairy cattle (calves, bulls and bull calves).

(b) Includes bulls, steers and calves.

(c) Includes dairy and meat cattle for all purposes.

(d) Includes maiden ewes intended for breeding.

(e) Includes rams, marked lambs, wethers, hoggets and non-breeding ewes.

(f) Including boars, gilts, suckers, weaners, growers and finishers.

Source: *Agricultural Commodities, Australia (7121.0)*.

Cattle numbers in Australia increased to a peak of 32.7 million in 1976, after which seasonal conditions and profitability saw numbers drop dramatically. For the five years from 1984, the size of the herd remained relatively stable. Between 1989 and 1998, cattle numbers increased gradually, despite unfavourable weather conditions continuing in many parts of Australia. After a slight decline in 1999, cattle numbers increased to 27.9 million in 2002. Dry conditions over much of the country in 2002–03 saw cattle numbers fall but improved conditions in some regions in the following three years resulted in the national herd reaching a 30-year high of 28.4 million head in 2005–06. A return to drier weather has since seen numbers decline.

By 30 June 2010, the Australian cattle herd numbered 26.6 million head, consisting of 2.5 million milk cattle and 24.0 million meat cattle (table 16.23). Victoria had the most milk cattle

(1.6 million) while Queensland grazed the most meat cattle (11.2 million) (table 16.24).

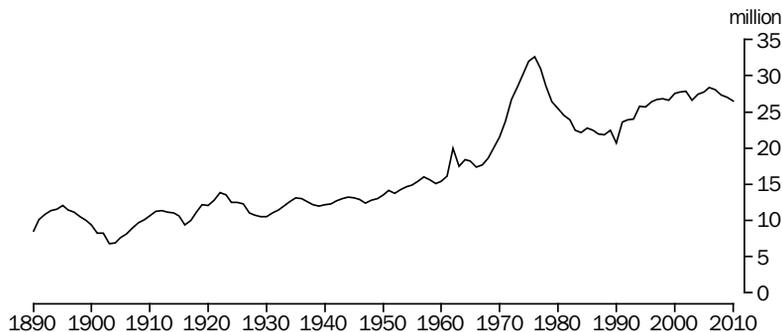
Graph 16.25 shows total cattle (milk and meat) numbers in Australia from 1890–2010.

Sheep

Sheep and lamb numbers reached a peak of 180 million in Australia in 1970. Poor market prospects for wool after 1990 had a marked impact on the flock size, with numbers generally falling until 2003, when there were 99 million head. Following a slight recovery in 2004 and 2005, sheep and lamb numbers had fallen to 68 million head by 2010 – their lowest level since 1905.

In 2010, New South Wales carried the most stock with 24.4 million head, followed by Western Australia (14.7 million) and Victoria (14.4 million) (table 16.24).

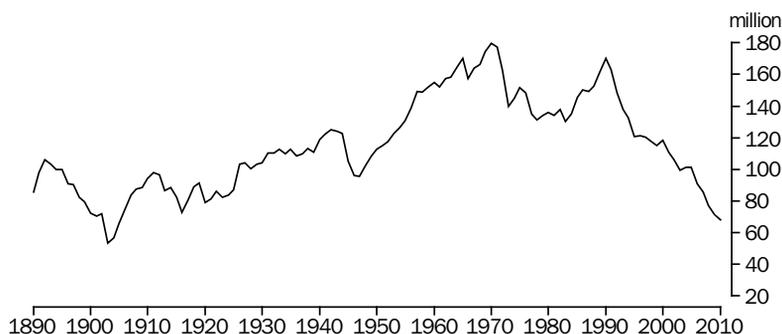
16.25 CATTLE(a)—1890–2010



(a) Due to the scale of this graph, breaks in the time series have not been noted.

Source: *Historical Selected Agriculture Commodities, by State (7124.0)*.

16.26 SHEEP AND LAMBS(a)—1890–2010



(a) Due to the scale of this graph, breaks in time series have not been noted.

Source: *Historical Selected Agriculture Commodities, by State (7124.0)*.

Graph 16.26 shows total sheep and lamb numbers in Australia from 1890 to 2010.

Pigs

Pig farming is a highly intensive industry. The majority of pigs are grown in specially designed sheds that provide a controlled environment conducive to the efficient production of large numbers of animals.

In 2010, pigs numbered 2.3 million head, with New South Wales and Queensland the dominant states (585,000 head and 583,000 head respectively), followed by Victoria (510,000 head) (table 16.24).

Poultry

Poultry farming is also a highly intensive industry, with the majority of poultry raised in large sheds that provide the birds with a stable environment protected from the elements. The poultry farming industry consists of two streams – meat production and egg production. Both are major users of feed grains. Egg production has begun to move towards layer hens being housed in non-caged systems. In June 2010, poultry farmers were holding 71.3 million chickens for meat production and 11.7 million for egg production (table 16.27).

At the end of 2009–10, New South Wales had the highest number of chickens for both meat production and egg production (table 16.28).

16.27 CHICKENS, Australia—At 30 June

	2008	2009	2010
	'000	'000	'000
For meat production	73 869	82 805	71 290
For egg production	14 760	12 604	11 734

Source: *Agricultural Commodities, Australia (7121.0)*.

16.28 CHICKENS, By state and territory—At 30 June 2010

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT
	'000	'000	'000	'000	'000	'000	'000	'000
For meat production	26 043	21 672	12 246	np	np	np	^—	—
For egg production	^ 3 532	3 199	3 250	^ 419	1 140	171	—	22

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

Source: *Agricultural Commodities, Australia (7121.0)*.

16.29 WHOLE MILK INTAKE BY FACTORIES, Production, use and value

	Milk sales		Milk used for		Total milk produced	Gross value		
	ML		other dairy				ML	\$m
	ML	ML	ML	ML				
2007–08	2 188	7 035	9 223	4 571.7				
2008–09	2 229	7 159	9 388	3 987.6				
2009–10	2 269	6 754	9 023	3 371.3				

Source: *Value of Agricultural Commodities Produced, Australia (7503.0) and Dairy Farmers Australia*.

Livestock products

Milk

Dairying is a major Australian agricultural industry. The estimated gross value of dairy production at farm-gate prices in 2009–10 was \$3.4 billion (table 16.29), which was a 15% decrease on the previous year.

Most dairy production occurs in high rainfall coastal fringe areas where climate and natural resources allow production to be based on year-round pasture grazing. This enables efficient, low-cost milk production. With the exception of several inland river schemes, pasture growth generally depends on natural rainfall. Feedlot-based dairying is expanding, although, as at 30 June 2010, it was still uncommon.

Australian milk production decreased by 365 million litres (ML), or 3.9%, to 9.0 billion litres in 2009–10. This reflected benign conditions and strong milk prices in the domestically focused northern states, but also low milk prices and financial challenges in the export-focused south-

east. The irrigated regions of southern New South Wales and northern Victoria also faced another year of difficult conditions in 2009–10, with low water allocations and milk production suffering accordingly.

Average annual per person milk consumption has stabilised at around 100 litres since the mid 1980s. According to data from Dairy Australia, during 2009–10, Australians consumed 102.4 litres of milk, 12.9 kilograms of cheese, 7.1 kilograms of yoghurt and 3.8 kilograms of butter/butter blends per person.

Meat production and slaughterings

Tables 16.30 and 16.31 show details of slaughterings and meat production from abattoirs, and from commercial poultry and other slaughtering establishments. The data relate only to slaughtering for human consumption and do not include animals condemned or those killed for boiling down.

Production of beef (excluding veal) in 2010–11 was virtually static at 2.1 million tonnes (table 16.31).

16.30 LIVESTOCK AND POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION

	Cattle '000	Calves '000	Sheep '000	Lambs '000	Pigs '000	Chickens '000
2006–07	8 162	919	13 271	20 158	5 322	453 910
2007–08	7 833	846	11 158	20 529	5 171	458 064
2008–09	7 789	794	10 501	20 395	4 476	474 810
2009–10	7 461	903	7 333	19 478	4 561	465 677
2010–11	7 369	729	5 340	17 880	4 643	549 891

Source: *Livestock Products, Australia (7215.0)*.

16.31 PRODUCTION OF MEAT

	Beef t	Veal t	Mutton t	Lamb t	Pig t	Total red meat t	Chicken(a) t
2006–07	2 195 714	30 578	270 988	412 584	381 866	3 291 730	811 591
2007–08	2 105 706	26 417	243 119	428 388	374 409	3 178 038	797 280
2008–09	2 098 615	26 489	219 820	415 867	321 005	3 081 798	832 456
2009–10	2 056 514	52 262	161 774	412 537	331 261	3 014 347	834 409
2010–11	2 089 233	44 133	123 245	391 340	342 101	2 990 052	1 014 978

(a) Excludes Northern Territory, Tasmania and the Australian Capital Territory.

Source: *Livestock Products, Australia (7215.0)*.

16.32 GROSS VALUE OF LIVESTOCK SLAUGHTERINGS AND OTHER DISPOSALS

	2007–08 \$m	2008–09 \$m	2009–10 \$m
Cattle and calves	7 353.3	7 451.7	7 267.7
Sheep and lambs(a)	2 167.9	2 492.2	2 627.0
Pigs	901.7	894.7	902.8
Poultry	1 636.6	1 861.5	1 784.7
Other livestock	44.2	51.6	76.6
Total livestock slaughterings and other disposals	12 103.6	12 751.7	12 658.7

(a) Excludes value of wool on skins.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0)*.

In 2010–11, lamb production decreased 21,000 tonnes (5%) to 391,000 tonnes while mutton production decreased 39,000 tonnes (24%) to 123,000 tonnes.

Significant changes have taken place in the pig meat producing industry in recent years. Capital investment and corporate takeovers have seen the emergence of a few large companies that produce a significant proportion of all pig meat sold in Australia. These moves, and the trend to more intensive and efficient production techniques, have seen pig meat production rise steadily since the mid 1970s, when production dipped to a low of 174,000 tonnes. There was an increase of 3% in pig meat production to 342,000 tonnes in 2010–11.

Table 16.32 shows the gross value of livestock slaughterings over recent years. The 2009–10

value of total slaughterings and other disposals decreased by 1% to \$12.7 billion. Poultry slaughterings decreased by 4% in 2009–10 to \$1.8 billion, while cattle and calf slaughterings decreased by 2% to \$7.3 billion.

Table 16.33 shows the volume of exports of fresh, chilled or frozen meat. In 2010–11, beef was again Australia's major meat export with shipments of bone-out beef being the major component at 921,400 tonnes, 4% more than the previous year. Exports of bone-in lamb increased by 3% in 2010–11 and exports of pork meat increased by 3%.

Table 16.34 shows details of live sheep and cattle exported for slaughter. There were 2.9 million live sheep exported for slaughter in 2010–11 – marginally below the previous year – while the free-on-board (FOB) value of exported sheep

16.33 EXPORTS OF FRESH, CHILLED OR FROZEN MEAT(a)(b)

	Beef		Veal		Mutton		Lamb		Bacon and ham(d)		Canned meat(e)
	bone-in(c)	bone-out(c)	bone-in	bone-out	bone-in	bone-out	bone-in	bone-out	Pork	ham(d)	
	t	t	t	t	t	t	t	t	t	t	
2006–07	52 389	971 531	3 752	5 794	124 851	42 825	127 490	29 043	41 314	549	16 051
2007–08	57 199	917 494	3 704	5 049	119 495	43 827	134 101	32 500	39 139	771	12 493
2008–09	47 926	954 473	4 102	4 595	107 004	44 119	131 143	31 253	32 258	463	12 851
2009–10	48 699	882 957	4 673	3 550	85 061	31 503	125 199	34 819	29 961	167	13 480
2010–11	57 848	921 475	6 031	1 808	69 483	27 208	128 486	33 850	31 001	152	12 490

(a) International trade statistics are compiled by the ABS from information submitted to the Australian Customs Service by exporters and importers or their agents. Factors are applied to beef, veal, mutton and lamb bone-out figures to calculate a derived bone-in carcass weight. The derived bone-in carcass weights are then added to bone-in figures to calculate total exports in carcass weight. The factor for beef and veal is 1.5 and for mutton and lamb, 2.0. This information is sourced from the Australian Department of Agriculture, Fisheries and Forestry (DAFF).

(b) Export data may be subject to revision.

(c) Includes buffalo meat.

(d) Cured carcass weight, and stated net weight of packs of canned bacon and ham.

(e) Canned meat excludes bacon and ham.

Source: *Livestock Products, Australia (7215.0)*.

16.34 LIVE SHEEP AND CATTLE EXPORTS(a)

	SHEEP				CATTLE			
	Number	Gross weight	Value (FOB)	Unit value(b)	Number	Gross weight	Value (FOB)	Unit value(b)
	'000	'000t	\$m	\$	'000	'000t	\$m	\$
2006–07	4 137.9	198.8	288.7	69.8	638.1	216.1	437.4	685.5
2007–08	4 068.9	196.9	286.4	70.4	713.3	241.1	450.5	631.6
2008–09	4 064.0	199.1	339.1	83.4	856.0	284.9	558.7	652.7
2009–10	3 055.3	146.0	296.7	97.1	906.6	310.7	600.1	662.0
2010–11	2 912.3	135.0	346.9	119.1	758.1	242.7	559.7	738.3

(a) Export data may be subject to revision.

(b) Gross value divided by the number of animals exported.

Source: *Livestock Products, Australia (7215.0)*.

increased by 17% to \$347 million. The number of live cattle exported for slaughter in 2010–11 decreased by 16% to 758,000 head.

Wool

Australia is the world's largest wool producer, accounting for about a quarter of total global production. In the last twenty years or so, wool production has more than halved, to around 353,000 tonnes in 2009–10. Almost all of Australia's wool is exported, the major markets being China (excludes SARs and Taiwan), Italy and India.

Graph 16.35 shows total wool production for the years 1911 to 1973 and then shorn wool production from 1974 onwards.

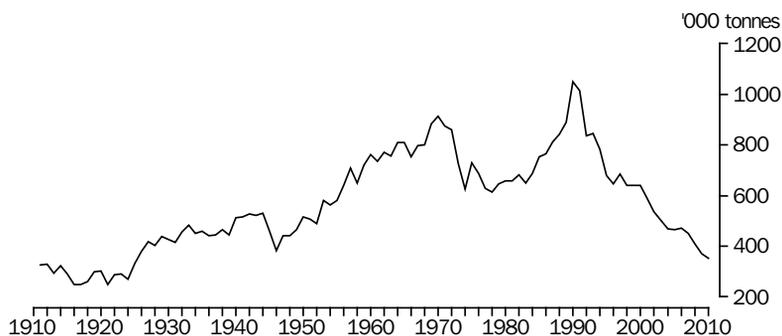
Shorn greasy wool contains an appreciable quantity of grease, dirt, vegetable matter and

other material. The exact quantities of these impurities in the fleece vary with climatic and pastoral conditions, seasonal fluctuations and the breed and condition of the sheep. However, it is the clean wool fibre that is ultimately consumed by the textile industry, and the term 'clean yield' is used to express the net wool fibre content present in greasy wool.

The gross value of wool produced in 2009–10 increased 7% on the previous year to \$1.9 billion (table 16.36), approaching a third of the \$5.9 billion recorded in 1988–89, the peak year in the wool boom of the 1980s.

The total quantities of taxable wool received by brokers and purchased by dealers in recent years are shown in table 16.37. They exclude wool received by brokers on which tax had already been paid by other dealers (private buyers) or brokers.

16.35 WOOL PRODUCTION(a)—1911–2010



(a) Shorn, dead & fell mongered, 1911–73. From 1974, shorn wool received by brokers & dealers.

Source: *Historical Selected Agriculture Commodities, by State (7124.0)*.

16.36 WOOL VALUE (GROSS)

	2007–08	2008–09	2009–10
	\$m	\$m	\$m
Wool – Shorn	2 174.8	1 693.4	1 756.0
Wool – Other(a)	134.2	112.3	171.5
Wool – Total	2 309.0	1 805.7	1 927.5

(a) Includes dead wool and wool on skin.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0)*; ABS data available on request.

16.37 TAXABLE WOOL RECEIVALS(a)

	Tonnes
2006–07	450 529
2007–08	407 881
2008–09	370 601
2009–10	352 737
2010–11	368 325

(a) Annual data are the sum of four quarters of original data.

Source: *Livestock Products, Australia (7215.0)*.

Agricultural land and water ownership

In recent times, there has been considerable government and other sector interest in understanding the degree of foreign ownership in the agricultural industry. To meet this information need, and following consultation with key Government bodies, the ABS undertook a new survey in 2011 – the Agricultural Land and Water Ownership Survey (ALWOS). The ALWOS was despatched in March 2011, to a sample of approximately 11,000 agricultural businesses representing the Australian agricultural industry. Specifically, the survey collected data on the ownership status of agricultural businesses, agricultural land and water assets used for agricultural purposes.

Results of the survey showed that as at 31 December 2010:

- 99% of all agricultural businesses in Australia were entirely Australian owned

- 89% of agricultural land was entirely Australian owned, and
- 91% of water entitlements for agricultural purposes were entirely Australian owned.

The survey results are broadly comparable with levels of foreign ownership of agricultural businesses and land collected in the Agricultural Census of 1983–84. The ABS has not previously collected data on foreign ownership of agricultural water entitlements.

More details can be found in *Agricultural Land and Water Ownership, December 2010* (7127.0).

Migrant farmers

In 2012, Australia celebrates the Australian Year of the Farmer. This special article recognises the year by acknowledging the contribution of migrant farmers.

According to the 2006 Census of Population and Housing, people born overseas have a reasonably strong involvement in farming and farm management in Australia. Of approximately 160,000 farmers and farm managers identified at the 2006 Census, about 10% were born overseas.

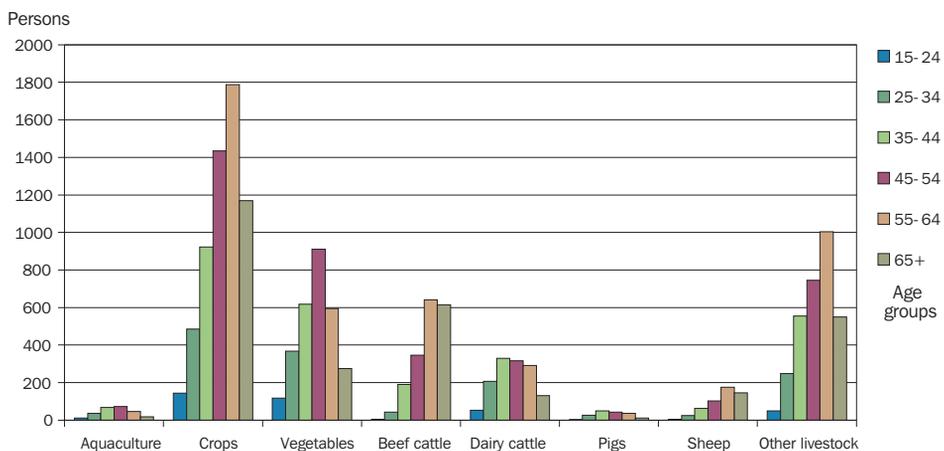
Overseas born farmers and farm managers, in 2006, were particularly well represented in vegetable growing (about 40% of all farmers with the occupation Vegetable grower). A reasonably high proportion of crop farmers and pig farmers were also overseas-born – comprising about 16% of all farmers in these occupations.

Nearly half of all overseas-born farmers were aged 55 or over in 2006 (graph S16.1), which

reflects the general trend of ageing farmers. Overseas-born farmers in this age bracket were more prevalent in crops and livestock farming. Younger arrivals were also prominent in broadacre agriculture, but were also likely to be found in intensive agriculture occupations, such as vegetable growing and dairying (about one-third of overseas-born farmers aged 15–54).

Of those farmers born overseas, a majority (nearly 60%) came from Europe and were mainly crop farmers or livestock farmers. Another 20% of farmers born overseas came from Asian countries and were more involved in vegetable growing than other farming occupations.

S16.1 Number of overseas-born farmers by age and type of farming occupation—2006



Source: 2006 Census of Population and Housing.

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FORESTRY AND FISHING

This chapter outlines the main features of two important primary industries in Australia – forestry and commercial fishing.

Forests are considered to be one of the most important biosphere regions on earth. They protect our soils and water resources, provide habitat for organisms, absorb large quantities of carbon dioxide from the atmosphere, and are used for cultural, recreational and educational purposes.

Australia's native and plantation forests are an important natural resource. They provide much of the timber and paper products consumed by Australians and support other products and services, such as honey, wildflowers, natural oils, firewood and craft wood.

The Australian Fishing Zone (AFZ) covers the offshore area from coastal waters (3 nautical miles from the territorial sea baseline) up to 200 nautical miles seaward to the outer limits of the exclusive economic zone (EEZ). It is the third largest fishing zone in the world. Of the 6,000 species of marine and freshwater fish, crustaceans and molluscs occurring in the waters in and around Australia, fewer than 10% are commercially harvested.

The gross value added for the Forestry and fishing industry in 2009–10 was \$4,445 million, a marginal increase over the previous financial year but less than 1% of Australia's gross domestic product.

Most of the material on forestry in this chapter was provided by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) and the (then) Bureau of Rural Sciences (part of ABARES from 2010). Most of the material on fishing was provided by the Australian Government Department of Agriculture, Fisheries and Forestry and ABARES.

This chapter contains a special article, *Fishing co-operatives in Australia*.

Related information can be found in chapters 1 *Geography and climate*, 2 *Environment*, 16 *Agriculture* and 20 *Manufacturing*.

Forestry and fishing industry

The contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP), is measured by industry gross value added (GVA). Information on the relationship between industry GVA and GDP is provided in the *Industry structure and performance* chapter.

Table 17.1 shows industry gross value added (in volume terms) for the Forestry and fishing industry. Between 2008–09 and 2010–11, GVA for the industry increased by 9%.

Table 17.2 shows employment for the Forestry and logging industry. Between 2008–09 and 2010–11, total employment decreased from 7,500 to 5,600 people, a fall of 25%.

In 2009–10, the Forestry and logging industry generated \$3,567 million in sales and service income (table 17.3), a 12% increase on the previous year. Total income was \$3,552 million, a 3% fall on the previous year.

Industry value added (IVA) increased to \$1,189 million in 2009–10, a 26% rise over the previous year. Despite the increased IVA, fewer than half of the businesses in the industry made a profit or broke even.

Table 17.4 shows employment for the Fishing, hunting and trapping industry. Between 2008–09 and 2010–11, total employment increased from 4,600 to 7,300 people, an increase of 59%.

In 2009–10, the Fishing, hunting and trapping industry generated \$1,706 million in sales and

17.1 FORESTRY AND FISHING INDUSTRY(a), Gross value added(b)

	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Forestry and fishing	4 478	4 499	4 878

(a) Classified according to the National Income and Production Industry Classification (NIPIND) which uses as its basis the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: *Australian System of National Accounts 2010–11 (5204.0)*.

17.2 FORESTRY AND LOGGING INDUSTRY(a), Employment(b)

ANZSIC Subdivision	2008–09	2009–10	2010–11
	'000	'000	'000
Forestry and logging	7.5	7.0	5.6

(a) Classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0)*.

(b) Annual average of quarterly data. Note that some of the quarterly estimates are subject to sampling variability too high for most practical purposes. This affects two quarters of 2008–09, one quarter of 2009–10 and three quarters of 2010–11.

Source: *Labour Force, Australia, Detailed, Quarterly (6291.0.55.003)*.

17.3 FORESTRY AND LOGGING INDUSTRY(a), Selected indicators

ANZSIC Subdivision	BUSINESS PROFITABILITY									
	Wages and salaries(b)	Total income	Sales and service income(c)	Operating profit before tax	Capital expenditure(d)	Industry value added	Profit margin	Made a profit	Broke even	Made a loss
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Forestry and logging										
2008–09	568	3 658	3 189	*152	^ 779	940	4.8	28.5	3.2	68.4
2009–10	540	3 552	3 567	–22	*628	1 189	–0.6	39.7	1.4	58.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry 2009–10 (8155.0)*.

17.4 FISHING, HUNTING AND TRAPPING INDUSTRY(a), Employment(b)

	2008–09	2009–10	2010–11
<i>ANZSIC Subdivision</i>	'000	'000	'000
Fishing, hunting and trapping	4.6	7.6	7.3

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data. Note that most of the quarterly estimates are subject to sampling variability too high for most practical purposes. This affects all quarters of 2008–09, two quarters of 2009–10 and one quarter of 2010–11.

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

17.5 FISHING, HUNTING AND TRAPPING INDUSTRY(a), Selected indicators

<i>ANZSIC Subdivision</i>	<i>Wages and salaries(b)</i>	<i>Total income</i>	<i>Sales and service income(c)</i>	<i>Operating profit before tax</i>	<i>Capital expenditure(d)</i>	<i>Industry value added</i>	BUSINESS PROFITABILITY			
							<i>Profit margin</i>	<i>Made a profit</i>	<i>Broke even</i>	<i>Made a loss</i>
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Fishing, hunting and trapping										
2008–09	278	1 950	1 800	^ 316	*216	^ 765	17.6	74.5	1.6	23.9
2009–10	234	1 818	1 706	np	*160	628	np	73.6	0.7	25.7

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

np not available for publication but included in totals where applicable

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry 2009–10* (8155.0).

service income (table 17.5), a 5% decrease on the previous year. Total income was \$1,818 million, a 7% fall on the previous year.

Forestry

Australia is a biologically diverse country and the forests of south-western Australia are one of the world's 34 recognised biodiversity 'hotspots'. Forests protect soil and water resources, and are increasingly being recognised for their potential as carbon sinks through their ability to absorb carbon from the atmosphere. They are also the foundation for a broad range of cultural and spiritual experiences for diverse groups of people and a major tourist attraction for Australian and overseas visitors, providing for a vast array of recreational and educational activities.

Australia's native and plantation forests provide the majority of the timber and a significant proportion of the paper products used by Australians. Employment and wealth flow directly from manufacturing wood products, such as sawn timber, fibreboard, plywood and paper, derived

from the forests. Forests and plantations also support a variety of other products and services, such as honey, wildflowers, natural oils, firewood and craft wood.

The National Forest Policy Statement, agreed by Australian state and territory governments in 1992, sets out a vision for management of Australia's forests that integrates environmental, commercial and community values and uses. These values are embodied in regional forest agreements negotiated for New South Wales, Victoria, Western Australia and Tasmania.

As a member of the international forest initiative – the Montreal Process – Australia has contributed to the development of the criteria and indicators for the conservation and sustainable management of temperate and boreal forests. Australia has adopted the internationally agreed criteria, and revised the indicator set to reflect its own unique forests, providing a consistent framework for monitoring and reporting on the status of its forests. Information is reported covering themes relating to biological diversity, productive capacity, forest health, soil and water values, and

carbon as well as data on socio-economic, legal and institutional frameworks. The information is compiled every five years by the National Forest Inventory (NFI), within the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), to produce Australia's *State of the Forests Report*. Preparation of the fourth report in the series, due for release in 2013, is underway.

Australia's forestry and forest products industries are important components of Australia's primary and secondary industry sectors. They contribute to economic development and employment in many regions of rural Australia. The industries include native forest and plantation management, log harvesting and transport, hardwood and softwood sawmilling, plywood and panels manufacturing, woodchip production and export and the pulp and paper industries.

Hardwood and softwood sawmilling uses mills of diverse sizes and types that process wood into sawn timber and other products such as mouldings and flooring. The hardwood mills are generally small scale and scattered. The softwood mills are generally larger and more integrated with other wood-processing facilities.

Forest estate

Native forest

A forest is defined by the National Forestry Inventory as an area incorporating all living and non-living components, dominated by trees having usually a single stem and a mature or potentially mature stand height exceeding two metres, and with an existing or potential crown cover of over-storey strata about equal to or greater than 20%. This definition includes Australia's diverse native forests, regardless of age. It is also sufficiently broad to encompass areas of trees that are sometimes described as woodlands.

Based on this definition, the total area of native forest reported in the latest Australia's *State of the Forests Report* is estimated at 147.4 million hectares, which is about 19% of Australia's land area (table 17.6).

An estimated 107.8 million hectares (73%) of native forest area is on public land and 38.1 million hectares (26%) is on private land. Forests growing on public land consist of 65.1 million

hectares (60%) on leasehold tenure, 22.4 million hectares (21%) in nature conservation reserves, 10.9 million hectares (10%) on other Crown land, and 9.4 million hectares (9%) managed by state forest authorities for multiple uses including wood production, recreation and informal reserves. Including forested leasehold land and private freehold forest, about 103.2 million hectares, or 70% of Australia's native forests, are privately managed.

Most of Australia's forests are dominated by eucalypts, which include trees in the genera *Eucalyptus*, *Corymbia* and *Angophora* (table 17.6). The second most extensive forest type is *Acacia*. Despite the predominance of these genera, Australia's forests are very diverse, with more than 700 species of eucalypts, almost 1,000 *Acacia* species, and many other genera of forest trees. As a result, forests vary widely in their species composition, structure and in the fauna they support.

Plantations

After having expanded for many years, the area of Australia's plantation estate appeared to stabilise in 2010 at 2.0 million hectares (table 17.7). The area of coniferous (softwood) plantations increased by 16% between 1994 and 2010, while the area of broadleaved (hardwood) plantations increased six-fold over the same period (graph 17.8). The area of plantations in each state and territory in 2010 is shown in table 17.7.

The plantation estate is dominated by a few species: about three-quarters of softwood plantations by area are radiata pine (*Pinus radiata*). Over half of the hardwood plantations by area are Tasmanian blue gum (*Eucalyptus globulus*) and a further one-quarter are shining gum (*Eucalyptus nitens*). These proportions are similar to those in previous years.

Nearly all softwood plantations in Australia are managed primarily to produce sawlogs to make sawn timber for building and construction (table 17.10). Pulpwood, produced from thinnings and low quality parts of the stems in stands managed primarily to produce sawlogs, is used to make particleboard, medium density fibreboard and paper products. Most hardwood plantations are managed to produce pulpwood for paper manufacturing. A small proportion are managed to produce sawlogs, although most are too young to produce significant volumes.

17.6 NATIVE FOREST AREAS—2008

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha
DOMINANT CANOPY SPECIES									
Eucalypt									
Tall	3 421	1 562	177	—	213	1 101	—	28	6 501
Medium	17 228	4 110	33 825	356	9 508	1 264	18 213	81	84 586
Low	289	105	2 404	1 179	3 888	65	8 176	7	16 115
Mallee	210	1 504	60	6 256	1 217	—	—	—	9 247
Total	21 148	7 281	36 466	7 791	14 826	2 430	26 389	116	116 447
Acacia	1 333	41	6 060	239	1 123	72	1 496	—	10 365
Melaleuca	48	24	5 698	14	62	19	1 690	—	7 556
Rainforest	495	18	1 867	—	5	593	302	—	3 280
Casuarina	1 168	131	61	671	82	1	114	—	2 229
Mangrove	5	2	436	14	164	—	359	—	980
Callitris	1 540	25	597	118	1	1	315	—	2 597
Other	473	314	1 397	7	1 400	—	344	7	3 942
Total	26 208	7 837	52 581	8 855	17 665	3 116	31 010	123	147 397
TENURE									
Public									
Multiple use forest(a)	1 980	3 163	1 991	—	1 248	1 026	—	—	9 408
Nature Conservation Reserve(b)	5 148	3 505	4 576	4 029	3 868	1 121	16	108	22 371
Other Crown land(c)	943	109	1 598	277	7 169	85	674	7	10 862
Leasehold(d)	9 891	35	34 304	3 083	3 891	—	13 920	8	65 132
Total	17 962	6 812	42 469	7 389	16 176	2 232	14 610	123	107 773
Private(e)	8 076	1 025	8 908	1 399	1 489	885	16 317	—	38 099
Unresolved tenure	170	—	1 204	67	—	—	83	—	1 524
Total	26 208	7 837	52 581	8 855	17 665	3 116	31 010	123	147 397

— nil or rounded to zero (including null cells)

(a) Publicly-owned land managed for multiple use including wood production.

(b) Public land on which wood production is excluded (e.g. national parks).

(c) Reserved areas of educational, scientific and other public institutional land, including easements, Defence land, and other minor tenure classifications.

(d) Crown land leased for private use where the right to harvest or clear land must be approved by state/territory governments. Often known as pastoral leases.

(e) Land held under freehold title and private ownership including land held by designated Aboriginal and Torres Strait Islander communities under freehold title with special conditions attached.

Source: Australia's State of the Forests Report 2008, National Forest Inventory, Bureau of Rural Sciences.

17.7 PLANTATION AREAS—2010

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha
Species type									
Hardwood	93	203	40	60	307	234	36	—	973
Softwood	296	226	188	128	100	75	2	8	1 024
Other categories(a)	3	1	3	—	6	—	—	—	12
Total	391	431	231	188	413	309	38	8	2 009

— nil or rounded to zero (including null cells)

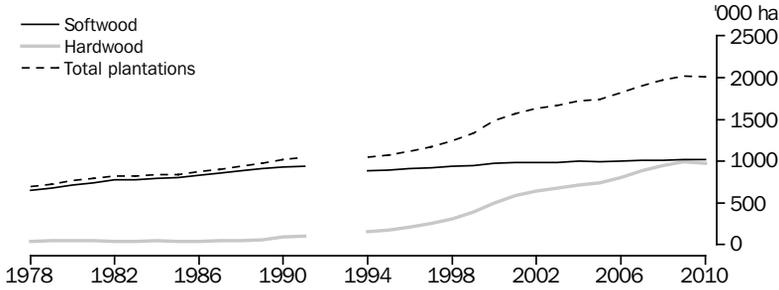
(a) Includes mixed hardwood and softwood species and plantations for which species was not reported.

Source: National Plantation Inventory, Australian Bureau of Agricultural and Resource Economics and Sciences.

For the first hundred years of plantation development in Australia, most of the investment was by governments. The proportion of plantations privately owned has been increasing steadily for many years but increased substantially in 2010 because government-owned plantations in Queensland were sold to superannuation

funds (graph 17.9). The proportion of plantations owned by managed investment scheme investors decreased substantially in 2010 as many were taken over by timber companies and other private investors and some have been written-off following drought and recurring disease problems.

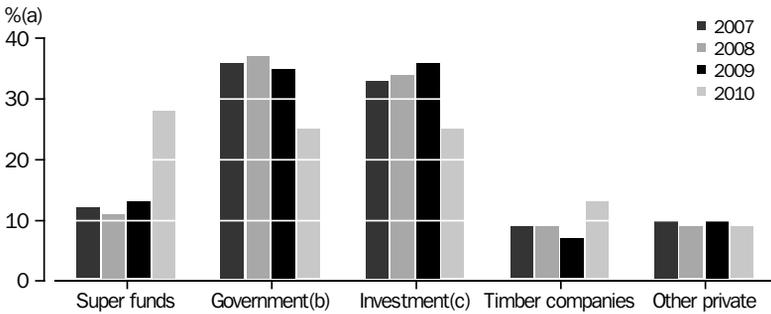
17.8 PLANTATION AREA(a), By species group



(a) Break in the series is due to use of different sources and their collection methods.

Source: Australian Bureau of Agricultural and Resource Economics (1976 to 1991); National Plantation Inventory, Australian Bureau of Agricultural and Resource Economics and Sciences (since 1994).

17.9 PLANTATION OWNERSHIP—2007 to 2010



(a) Proportion of total plantations. (b) Includes joint ventures. (c) Managed investment schemes.

Source: National Plantation Inventory, Australian Bureau of Agricultural and Resource Economics and Sciences.

Wood and paper products

On average, each year, every Australian consumes the equivalent of about 1 cubic metre of harvested log in the form of timber products, including timber for home building, joinery, furniture and paper products. Those products are supplied from domestic production and imports.

Apart from sawnwood, other timber products include plywood, wood-based panels and reconstituted wood panels. Australian-made wood-based panels include particleboard, medium-density fibreboard and hardboard. These are made from softwood or hardwood pulplogs, sawmill residues and thinnings.

A total of 25.1 million cubic metres of logs was harvested from Australian native forests and

plantations in 2009–10; that volume was 1% less than the previous year but 3% more than ten years earlier. The volume harvested from native forests has almost halved (43% or 4.8 million cubic metres) over ten years, while the volume harvested from plantations has increased five-fold (3.5 million cubic metres).

The total value of exports of forest products in 2009–10 was \$2.3 billion. Woodchips comprised 38% of that total and paper and paperboard products (primarily packaging and industrial paper) comprised 29%. The value of imports of forest products in 2009–10 was \$4.2 billion, of which 52% were paper and paperboard products (primarily printing and writing paper). This indicates a trade deficit in forest products of \$1.9 billion in 2009–10, down from the previous year's level of \$2.1 billion.

17.10 PRODUCTION OF WOOD AND SELECTED WOOD PRODUCTS

Commodity	Units	2005–06	2006–07	2007–08	2008–09	2009–10
Sawn Australian-grown timber						
Softwood	'000 m ³	3 821	4 012	4 263	3 740	na
Hardwood	'000 m ³	1 211	1 152	1 109	990	na
Total	'000 m ³	5 032	5 163	5 371	4 730	na
Plywood	'000 m ³	145	130	134	118	120
Particle board	'000 m ³	1 002	933	957	911	928
Medium-density fibreboard	'000 m ³	798	680	710	632	558
Paper and paperboard						
Newsprint	'000 t	415	411	456	444	427
Printing and writing	'000 t	663	693	706	723	496
Household and sanitary	'000 t	203	190	186	196	194
Packaging and industrial	'000 t	1 926	1 907	1 933	1 915	2 058

na not available

Source: Australian Forest and Wood Products Statistics, September and December quarters 2010, Australian Bureau of Agricultural and Resource Economics and Sciences.

Pulp and paper mills use roundwood thinnings, low-quality logs, harvesting residues and sawmill waste, recycled paper and paperboard to produce a broad range of pulp and paper products. Over the past five years, the volume of pulpwood for paper and paperboard harvested from eucalypt plantations has increased by a third while the volume harvested from native forests has declined by 20%.

Woodchips are used to produce paper and paper products. The woodchip export industry uses sawmill residues and native forest logs that are unsuitable for sawmilling. Sawmill waste material, which would otherwise be burnt, is also chipped for local pulpwood-using industries. Woodchips are also produced from thinnings from softwood plantations and from hardwood plantations grown especially for the purpose.

The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) reported that about 7.7 million cubic metres of logs were used for woodchip production for export in 2009–10, a decrease of 18% from five years ago. This was mainly due to a fall over the period of 2.5 million cubic metres (45%) in production from native hardwood forests not being matched by the increase of only 1.5 million cubic metres from hardwood plantations. Production of woodchips for export from coniferous logs has declined from 1.3 million cubic metres to 0.6 million cubic metres over the last five years.

Fishing

Production and trade

Production and value of fisheries

Australia's major fishery products are salmonids (salmon and trout), rock lobster, prawns, abalone, tuna, pearls and oysters. Australian fishing operators concentrate their efforts on estuarine and coastal species, and pelagic (water column-living) and demersal (bottom-living) species that occur on the continental shelf.

Table 17.11 shows the quantity of production and table 17.12 the gross value of production of the Australian commercial fishing industry (including aquaculture) in 2009–10.

In quantity terms, Australian fisheries production increased by 2% during 2009–10 to 241,100 tonnes, with finfish (other than tuna), prawns, oysters, tuna and rock lobster the major contributors to the total. However, the gross value of production fell slightly to \$2.2 billion, with falls in the value of tuna (\$62m) and rock lobster (\$46m), and rises in finfish (other than tuna) (\$41m) and prawns (\$34m) (table 17.13).

Australian fisheries production covers total production from fisheries (including aquaculture) managed by the Australian, state and territory governments, 'Commonwealth fisheries' are those managed by the Australian Fisheries Management Authority on behalf of the Australian Government. They accounted for 15% of the total gross value of Australian fisheries production in 2009–10. State and

17.11 FISHERIES PRODUCTION, Quantity(a)—2009–10

	NSW tonnes	Vic. tonnes	Qld tonnes	SA tonnes	WA tonnes	Tas. tonnes	NT tonnes	Cwlth tonnes	Aust. tonnes
Finfish									
Tuna	—	—	—	7 284	4	—	6	7 593	10 957(b)
Salmonids(c)	150	815	—	na	na	30 950	—	—	31 915
Other	11 494	3 386	14 335	44 697	10 445	1 820	5 573	27 986(d)	119 736
Total	11 644	4 201	14 335	51 981	10 449	32 769	5 579	35 579	162 607
Crustaceans									
Prawns	1 266	130	12 268	2 669	2 790	—	—	7 911(e)	27 034
Rock lobster	122	274	159	1 554	5 947	1 302	—	270	9 628
Crab	299	18	2 917	663	1 238	44	na	6	5 185
Other	66	39	616	42	103	—	—	112	978
Total	1 752	461	15 960	4 928	10 078	1 347		8 299	42 825
Molluscs									
Abalone	73	882	—	1 142	271	2 613	—	—	4 981
Scallops	—	—	2 920	na	2 525	—	—	2 094	7 539
Oysters(f)	4 960	—	na	6 123	na	3 724	—	na	14 807
Other	540	690	141	2 246	769	1 283	21	652	6 342
Total	5 573	1 572	3 061	9 511	3 565	7 620	21	2 746	33 670
Other fisheries production	168	256	—	1 319	171	101	—	6	2 021
Total	19 138	6 490	33 356	67 739	24 263	41 837	5 600	46 630(g)	241 123(b)

— nil or rounded to zero (including null cells)

na not available

(a) Includes estimates of aquaculture production (except NT), but excludes hatchery and inland commercial fishery production.

(b) Total has been adjusted so as not to double-count some southern bluefin tuna caught in the Commonwealth Southern Bluefin Tuna Fishery which was used as input to aquaculture in SA.

(c) Includes salmon and trout production.

(d) Includes the finfish component of Commonwealth Fisheries, plus catch from Commonwealth Fisheries that cannot be disaggregated due to confidentiality.

(e) Includes the Northern prawn, Torres Strait, South East and other fisheries.

(f) Excludes pearl oyster production (which only occurs in Qld, WA and NT).

(g) Totals include all fisheries under federal jurisdiction.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Fisheries Statistics 2010.

Northern Territory governments manage inland fisheries and aquaculture, in addition to those salt water fisheries not managed by the Australian government, as described in Offshore Constitutional Settlement Arrangements.

Table 17.13 shows the quantity produced and gross value of fishery production in the years 2007–08 to 2009–10.

Aquaculture

Aquaculture is a rapidly growing primary industry in Australia, and is an alternative to harvesting the naturally occurring wild fish stocks of aquatic organisms, such as fish, molluscs, crustaceans and aquatic plants. Aquaculture operations may involve the farming of captive-bred stock or the 'grow-out' of 'naturally occurring' larvae and juveniles of wild caught stocks. In all cases, it involves intervention in the rearing process designed to enhance production, through activities such as regular stocking, feeding and

protection from predators. Unlike wild-caught fisheries in which fishers access and harvest a common resource, farming implies individual or corporate ownership of the stock being cultivated, which provides operators with greater control over their operations. In 2009–10, the gross value of production of Australian aquaculture increased slightly to \$870 million, or 40% of the total value of fisheries production (table 17.14).

Aquaculture commenced in Australia in the late 1800s with the successful introduction of trout from the northern hemisphere and cultivation of the native Sydney rock oyster. The industry remained centred on these two species until the 1950s when the first cultured pearl farm was established in north-western Australia. A new wave of aquaculture development began in the 1980s with the beginning of the Atlantic salmon industry in Tasmania and commercial cultivation of native freshwater finfish, freshwater

17.12 FISHERIES PRODUCTION, Gross value(a)—2009–10

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Cwth	Aust.
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Finfish									
Tuna	—	—	—	102 175	32	na	37	58 430	125 299(b)
Salmonids(c)	1 602	5 102	—	na	na	362 422	—	—	369 126
Other	49 924	11 659	107 555	73 692	36 682	4 920	27 506	149 014(d)	460 951
Total	51 526	16 761	107 555	175 867	36 714	367 342	27 542	207 444	955 376
Crustaceans									
Prawns	16 004	904	155 860	31 142	27 940	—	—	92 242(e)	324 092
Rock lobster	6 753	14 422	5 850	85 834	184 101	65 219	—	6 660	368 839
Crab	3 977	721	28 570	4 804	6 897	1 903	9 262	59	56 193
Other	1 099	314	12 463	898	2 295	—	—	2 271	19 340
Total	27 832	16 361	202 743	122 678	221 233	67 122	9 262	101 232	768 464
Molluscs									
Abalone	1 904	21 919	—	38 445	9 227	102 132	—	—	173 628
Scallops	4	—	10 250	na	9 141	—	—	6 407	25 801
Oysters	43 000	—	520	35 027	—	21 264	—	—	99 811
Pearls	—	—	na	—	85 500	—	18 980	—	104 480
Other	4 038	3 069	710	12 086	4 718	5 192	206	1 638	31 657
Total	48 946	24 988	11 480	85 558	108 586	128 588	19 186	8 045	435 376
Other fisheries production	4 597	—	1 940	10 260	1 188	768	730	16	19 499
Total	132 902	58 110	323 718	394 363	367 721	563 819	56 721	316 737(f)	2 178 716(b)

— nil or rounded to zero (including null cells)

na not available

(a) Includes estimates of the value of aquaculture production, but excludes the value of hatchery and inland commercial fishery production.

(b) Total has been adjusted so as not to double-count the value of some southern bluefin tuna caught in the Commonwealth Southern Bluefin Tuna Fishery which was used as input to aquaculture in SA.

(c) Includes salmon and trout production.

(d) Includes the finfish component of Commonwealth Fisheries, plus catch from Commonwealth Fisheries that cannot be disaggregated due to confidentiality.

(e) Includes the value of Northern prawn, Torres Strait, South East and other fisheries.

(f) Totals include all fisheries under federal jurisdiction.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Fisheries Statistics 2010.

crayfish, prawns and Pacific oysters. The value of aquaculture production increased significantly in the 1990s, based on increased production and processing of Pacific oysters, prawns, Atlantic salmon, pearls and southern bluefin tuna.

Aquaculture operations occur in diverse environments including tropical, subtropical and temperate regions. The location of aquaculture is dependent on seasonal factors, the type of species being cultivated and the life cycle stage of aquatic organisms. More than one-third of people employed in the Fishing, hunting and trapping industry are employed in aquaculture, which provides development opportunities in regional Australia and contributes to export income.

In quantity terms, Australian aquacultural production for 2009–10 increased 5% over the previous year. Salmon, with 31,915 tonnes, remained the major aquaculture product in 2009–10, while edible oysters (14,804 tonnes)

was the second most plentiful product. In value terms, salmon (\$369m) continued as the species contributing the most to total gross value of Australian aquaculture, with pearl oysters (\$105m) ranking second. Tuna production and edible oysters followed, with \$102 million and \$100 million respectively.

Processing of fish, crustaceans and molluscs

Processing establishments vary in size, scope of operations and sophistication of technologies employed. The majority of establishments undertake relatively basic cleaning, filleting, chilling, freezing and packaging processes, although some have the capacity for significant product transformation. Much of the value that is added to the catch is due to correct handling and quick delivery to local or overseas markets. Processing aims to maintain quality and freshness of export product by superior handling, cold

17.13 FISHERIES PRODUCTION, Quantity and gross value(a)

	2007-08		2008-09		2009-10	
	'000 t	\$m	'000 t	\$m	'000 t	\$m
Finfish						
Tuna	14.7	210.0	13.7	187.1	11.0	125.3
Other	144.0	733.6	145.8	789.5	151.7	830.1
Total	158.7	943.6	159.5	976.6	162.6	955.4
Crustaceans						
Prawns	22.8	272.3	24.2	290.0	27.0	324.1
Rock lobster	14.3	426.0	12.2	414.8	9.6	368.8
Crab	6.0	56.3	5.3	57.8	5.2	56.2
Other	0.4	7.1	0.4	8.2	1.0	19.3
Total	43.5	761.8	42.1	770.8	42.8	768.5
Molluscs						
Abalone	5.3	188.8	5.6	188.5	5.0	173.6
Scallops	10.3	33.0	7.6	26.2	7.5	25.8
Oysters	13.5	89.1	14.2	93.0	14.8	99.8
Pearls	na	114.3(b)	na	90.0(b)	na	104.5
Other	6.8	29.9	6.6	32.1	6.3	31.7
Total	36.0	455.1	34.0	429.8	33.7	435.4
Other fisheries production	2.3	46.6(c)	1.9	36.8(c)	2.0	19.5
Total	240.5	2 207.1	237.5	2 214.1	241.1	2 178.7

na not available

(a) Includes estimates for aquaculture; excludes hatchery and inland commercial fisheries.

(b) Excludes the value of NT pearl production.

(c) Includes the value of NT pearl production.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Fisheries Statistics 2010.

17.14 AQUACULTURE PRODUCTION, Quantity and gross value(a)

	2007-08		2008-09		2009-10	
	tonnes	\$m	tonnes	\$m	tonnes	\$m
Finfish						
Salmon(b)	25 867	302.3	30 036	326.1	31 915	369.1
Tuna	9 757	186.7	8 786	157.8	7 284	102.2
Other(c)	5 906	58.3	7 282	72.2	8 396	72.7
Total	41 530	547.3	46 103	556.1	47 595	544.0
Crustaceans						
Prawns	3 088	44.2	3 985	56.8	5 381	77.5
Yabbies	84	1.4	60	1.0	51	0.9
Other(d)	140	3.2	144	3.2	132	3.0
Total	3 312	48.7	4 189	61.0	5 564	81.4
Molluscs						
Pearl oysters	na	114.3(e)	na	90.0(e)	na	104.5
Edible oysters	13 536	89.1	14 227	92.9	14 804	99.8
Other(f)	3 762	25.3	4 022	31.9	3 918	25.5
Total	17 298	228.8	18 250	214.8	18 723	229.8
Other fisheries production(g)	1 892	44.4(h)	1 550	34.7(h)	1 660	15.2
Total	64 032	869.3	70 092	866.6	73 542	870.4

na not available

(a) Excludes hatcheries production, crocodiles, microalgae and aquarium worms.

(b) Includes trout production.

(c) Includes silver perch, barramundi, eels, aquarium fish and other native fish.

(d) Includes marron and redclaw.

(e) Excludes the value of NT pearl production.

(f) Includes mussels, scallops, giant clams and abalone.

(g) Includes production of species unable to be assigned to a specific category because of confidentiality restrictions.

(h) Includes value of NT pearl production.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Fisheries Statistics 2010.

storage and rapid transport to markets. This quality aspect is important in generating high values.

Trade

Exports of fisheries products come under Australian Government jurisdiction, while domestic market activity is the responsibility of the state and territory governments.

A significant proportion of Australian fisheries production – edible and non-edible – is exported. However, in 2009–10, the total value of exports (including live fish) fell by 18% to \$1.2 billion (table 17.15), leaving Australia as a net importer of fisheries products by value, for the third year in a row. Although the value of rock lobster exports fell 13% in 2009–10, it was still the highest earning fisheries export, accounting for 32% of total value of exports of fisheries products. Abalone exports rose 4% and remained the second most valuable single edible fisheries export product.

Exports of the highest value non-edible earner, pearls, slipped back 33% to \$244 million in 2009–10 after a big increase the previous year.

In 2009–10, Hong Kong (SAR of China) continued as the major destination for Australian exports of

fisheries products, taking \$629 million worth of product (excluding live) and accounting for 52% of the total value of Australian fisheries exports (excluding live). Japan was the number two destination, accounting for 29%, with a value of \$353 million. The United States of America and China (excludes SARs and Taiwan) followed, with \$64 million and \$44 million respectively.

Western Australia was the highest earning state or territory from exports of seafood in 2009–10, with income of \$267 million, accounting for 27% of the total value of Australia's seafood exports. The state earned \$225 million (84%) of this income from exporting rock lobster. South Australia had the next highest earnings from seafood exports with \$258 million, 46% earned from exports of fresh or frozen fish (\$119m). Abalone earned Tasmania 57% of its total seafood export income of \$183 million.

The total value of Australian imports of fisheries products in 2009–10 fell 11% to \$1.5 billion. The major items of imports, in value terms, were fish (\$752m), pearls (\$171m) and prawns (\$159m). The two main source countries for imported fisheries products were Thailand (\$323m) and New Zealand (\$220m) which together accounted for 36% of the value of imports.

17.15 EXPORTS AND IMPORTS OF FISHERIES PRODUCTS(a)(b)

	2007–08		2008–09		2009–10	
	Exports	Imports	Exports	Imports	Exports	Imports
	\$m	\$m	\$m	\$m	\$m	\$m
Fish	324.8	715.0	334.0	824.6	258.4	751.5
Tuna (whole)	202.3	1.6	175.5	1.1	117.0	1.2
Other fish (including canned and fillets)	122.5	713.4	158.5	823.5	141.4	750.3
Prawns	68.6	166.6	82.2	135.0	61.5	159.2
Rock lobster	400.9	14.1	461.7	9.2	399.7	11.2
Abalone	217.2	—	208.2	—	216.4	—
Scallops	27.8	28.1	33.3	29.9	29.5	33.5
Pearls(c)	264.0	166.4	366.4	320.6	243.9	170.8
Other fisheries products	38.3	307.7	43.6	390.5	37.4	388.5
Total	1 341.7	1 397.9	1 529.4	1 709.8	1 246.7	1 514.7

— nil or rounded to zero (including null cells)

(a) Includes non-edible products (e.g. marine fats and oils, fishmeals, pearls and ornamental fish). Exports exclude sea products landed abroad directly from the high seas.

(b) For some fisheries categories, the value of exports exceeds the value of production because exports are valued on a free-on-board basis which includes the value of packaging and distribution services to the point of export.

(c) Export data include items temporarily exported.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Fisheries Statistics 2010.

Fisheries resources

The Australian Fishing Zone (AFZ) covers an area of almost 9 million square kilometres. This amounts to an expanse 16% larger than the Australian land mass and is the third largest fishing zone in the world. Despite the size of the AFZ, the Australian fisheries catch is small by world standards, as the waters of the AFZ tend to be relatively poor in nutrients and therefore not highly productive.

The *Fisbery status reports* provide an independent review of the biological status of fish stocks and the economic status of fisheries managed, or jointly managed, by the Australian Government. They provide an assessment of whether or not stocks are overfished (i.e. their stock biomass is below a prescribed level) or subject to overfishing (the rate of mortality due to fishing exceeds a prescribed level).

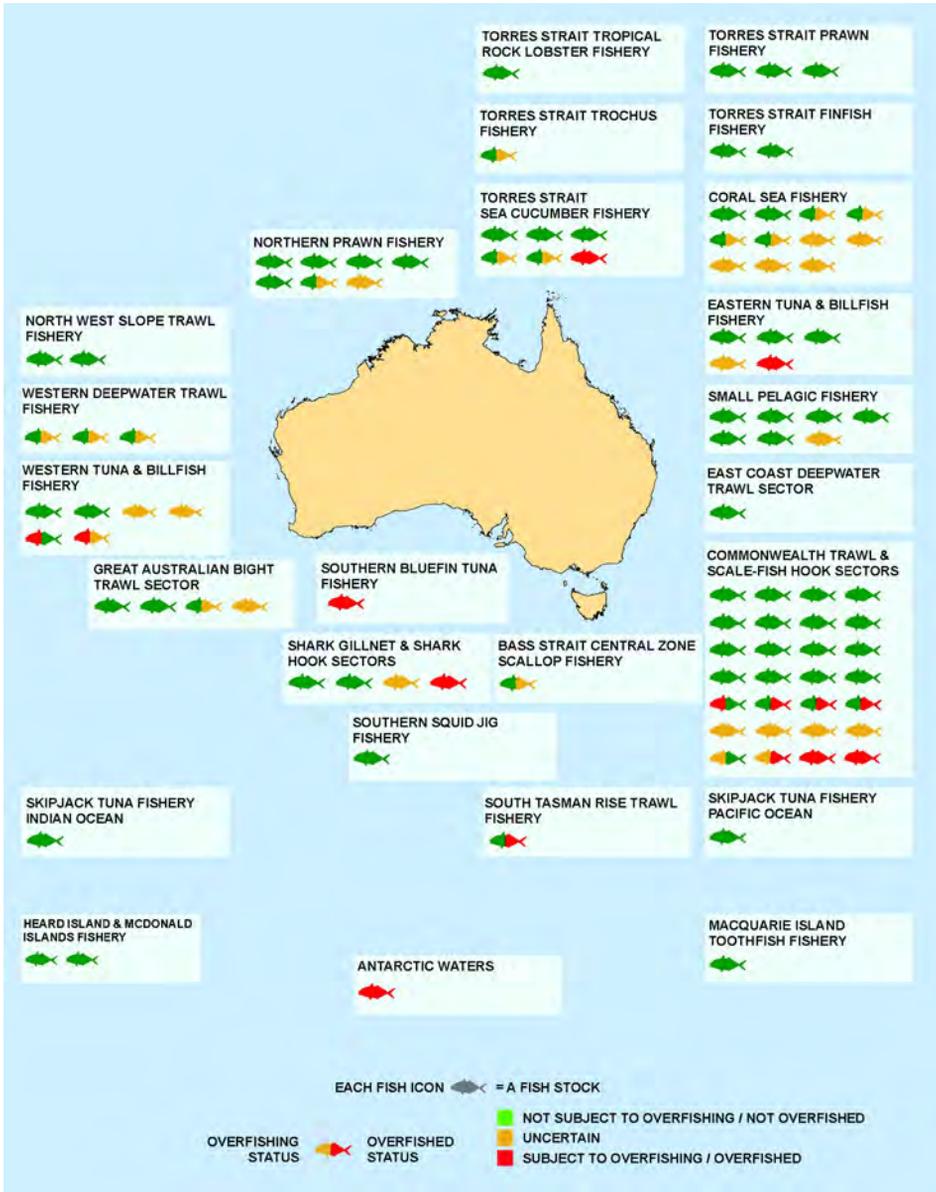
The *Fisbery status reports* of 2009, produced by the (then) Australian Bureau of Agricultural and Resource Economics – Bureau of Rural Sciences (ABARE–BRS), provide assessment information for 101 species or groups of species (hereafter referred to as ‘stocks’) in fisheries

for which the Australian Government has management responsibility. The *Fisbery status reports* also provide economic information on Commonwealth fisheries. These fisheries may be managed solely by the Australian Government, through the Australian Fisheries Management Authority (AFMA) or through joint authorities with state or territory governments, bilateral international agreements or broader regional or global international management entities.

Map 17.16 shows the status of 101 fish species (or groups of species) in Australia’s Commonwealth-managed or jointly-managed fisheries in 2009.

Of the 101 stocks assessed in 2009, 59 were classified as not overfished, 12 as overfished and the status of the remaining 30 species was uncertain. In terms of the overfishing status, 73 were classified as not subject to overfishing and 10 were classified as subject to overfishing. A further 18 stocks were classified as uncertain if subject to overfishing. Of the 101 assessed stocks, 56 were classified as being both not overfished and not subject to overfishing, while seven stocks were classified as both overfished and subject to overfishing.

17.16 STATUS OF COMMONWEALTH-MANAGED OR JOINTLY-MANAGED FISHERIES RESOURCES—2009



Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Fishery status reports 2009.

Fishing co-operatives in Australia

In 2012, Australia recognises the United Nations International Year of Co-operatives. This article was contributed by Co-operatives Australia and recognises the year by looking at the role of co-operatives in Australia's fishing industry.

With an annual revenue of over \$2 billion, fisheries products are the sixth most valuable Australian rural commodities after cattle/calves, wheat, milk, sheep/lambs and wool. Australia's fishing zone is the world's third largest, with a total of 8,148,250 square kilometres. Australian waters contain about 3,000 known species of fish and at least an equal number of crustaceans and molluscs. However, only about 10% of these are commercially fished.¹

Fishing fleets throughout the world have been getting progressively smaller and this has also occurred in Australia – resulting in a decreased number and size of surviving fishing co-operatives along the Australian coast. For example, the fishing fleet of the San Remo Fishermen's Co-operative in Victoria had decreased from 60 boats in the 1980s to 12 in 2010.² Additional pressures have come from competition from individual fishers who are not members of co-operatives, domestic aquaculture operations and cheaper imported

products.³ A number of surviving fishing co-operatives are 'reinventing' themselves as tourist attractions or marketing their products to niche customers.

Most of Australia's fishing co-operatives were established in the 1940s and 1950s. According to Co-operatives Australia's April 2011 list of the top 100 co-operatives, credit unions and mutuals,⁴ the top three fishing co-operatives in 2011 in Australia had a combined turnover of \$171 million and had 459 employees.

The Geraldton Fishermen's Co-operative had the largest turnover. It was established in the 1950s and is a major processor and exporter of rock lobsters. The value of Western Australia's production of rock lobsters represents about 50% of Australia's production value of rock lobsters and about 8% of the total value of Australia's fisheries production. The export value of Australian rock lobsters in 2009–10 was \$400 million. just over half of which (\$225 million) was from Western Australia.

Endnotes

1. <http://www.bermaguiswharf.com.au/abouty-bfw.php>.
2. ABC The 7.30 Report transcript 7 April 2010, p1.
3. Richard Stevens Report on Structural Adjustment in Commercial Fisheries in New South Wales, Government Relations and Fisheries management Advisor, 12 October 2007 pp iii, iv and ix.
4. *Australia's Top 100 Co-operatives, Credit Unions and Mutuals by Annual Turnover* (April 2011).

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MINING

Mining broadly relates to the extraction of minerals occurring naturally as solids, such as coal and ores, liquids such as crude petroleum, or gases such as natural gas. Included are activities carried out at or near mine sites as an integral part of mining operations, such as dressing or beneficiation of ores or other minerals. Natural gas absorption and purifying plants are also included.

However, the first stage processing of minerals and mineral extracts, while closely related to the mining industry, is included as part of the manufacturing industry (see chapter 20).

Australia continues to rank as one of the world's leading mining nations, with substantial identified resources of major minerals and fuel close to the surface. In 2009, it had the world's largest economic demonstrated resources of brown coal, mineral sands (rutile and zircon), nickel, uranium, lead and zinc.

Australia was the largest producer of iron ore, bauxite and the mineral sands, rutile and zircon in 2009. It was also a top ten producer of a wide range of other minerals including coal, copper, gold and uranium.

In industry gross value added terms (at current prices), the mining industry was the fourth largest contributor to Australia's gross domestic product (GDP) in 2009–10, with 8% of total GDP.

Expenditure on mineral exploration in 2010–11 was 72% higher than in 2006–07. During the same period, the value of exports from the mining industry more than doubled to \$136 billion. The industry contributed 55% of the total value of goods exported from Australia in 2010–11, an increase of 37% from 2006–07.

Related information can be found in chapters 1 *Geography and climate*, 19 *Energy*, 20 *Manufacturing* and 31 *International accounts and trade*.

Information on the Mining industry can be found in chapters 8 *Labour*, 15 *Industry structure and performance*, 25 *Information and communication technology* and 26 *Research and innovation*.

Mining industry

Economic contribution

The contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP), is measured by industry gross value added (GVA). Information on the relationship between industry GVA and GDP is provided in the *Industry structure and performance* chapter.

Total production of the Mining industry as measured by industry GVA (in volume terms), increased by 6% between 2008–09 and 2009–10, and doubled between 1989–90 and 2009–10 (graph 18.1).

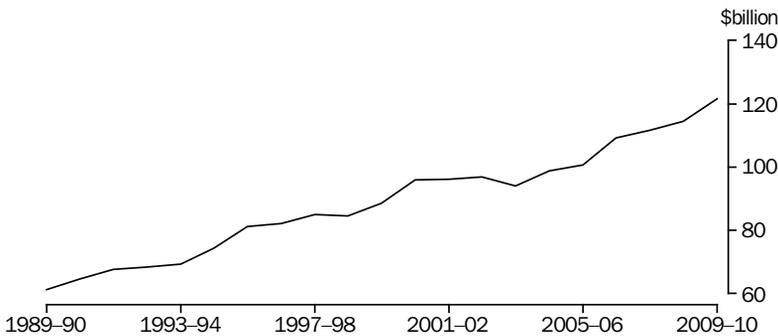
Over the last 10 financial years, the only annual decrease in production was in 2003–04 (3%) while the largest annual increase (8%) was in 2006–07.

Table 18.2 shows the industry GVA of the Mining industry and its contribution to Australia's GDP in the period 2005–06 to 2009–10.

Total industry GVA of the Mining industry increased by 21% over the period 2005–06 to 2009–10. The Mining industry's contribution to GDP was 8.4% in 2009–10 and 9.8% the year before.

Production in the Services to mining industry accounts for a small proportion (around 6%) of total mining production. However, the total value of services to mining may be larger than these figures indicate as some services may have been provided by businesses classified to other industries, such as construction or business services.

18.1 MINING PRODUCTION(a)(b)



(a) Industry gross value added. (b) Volume measures. Reference year is 2008–09.

Source: Australian System of National Accounts (5204.0).

18.2 MINING INDUSTRY(a), Gross value added(b)

Industry	Units	2005–06	2006–07	2007–08	2008–09	2009–10	Percentage change from 2005–06 to 2009–10
Mining (excl. services to mining)	\$m	95 395	103 414	104 702	107 695	115 015	20.6
Services to mining	\$m	5 568	6 085	6 749	6 767	6 498	16.7
Total Mining(c)	\$m	100 780	109 323	111 541	114 462	121 513	20.6
Contribution to GDP(d)	%	7.2	7.7	7.6	9.8	8.4	

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2008–09.

(c) Volume measures for years other than 2008–09 and 2009–10 are not additive.

(d) In current prices.

Source: Australian System of National Accounts, 2009–10 (5204.0).

Contribution to state and territory production

The importance of the Mining industry in terms of production, as measured by total factor income, varies across the states and territories. Total factor income is a measure of state/territory production and is equal to the total payments received by labour and owners of capital used in the production of goods and services.

In Western Australia, the contribution of the Mining industry remained relatively steady through the years 1997–98 to 2003–04 (between 18% and 21% of state production). However, since 2004–05, the contribution has risen to be 29% in 2009–10 (graph 18.3).

The Mining industry's share of Queensland production rose gradually from 6% in 1997–98 to 11% in 2006–07, peaked in 2008–09 at 15%, then returned to 11% in 2009–10.

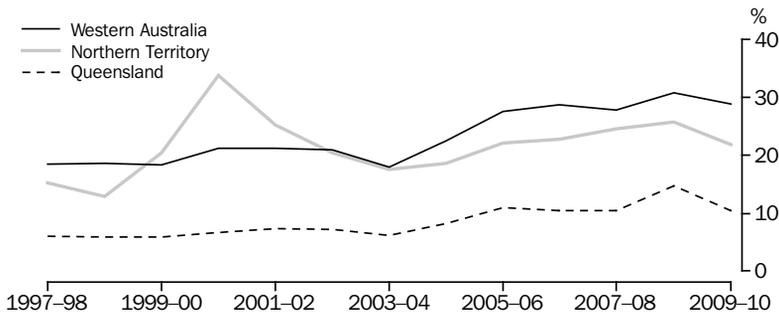
During the period 1997–98 to 2003–04, the Northern Territory experienced significant changes in the contribution of the Mining industry to territory production, with a low of 13% in 1998–99 to a high of 34% in 2000–01, before falling to 18% in 2003–04. From this period, a steady annual increase saw the contribution rise to 26% in 2008–09, followed by a fall to 22% in 2009–10.

Exports

Table 18.4 shows the proportion of exports contributed by the Mining industry, based on exports by industry of origin.

In the period 2006–07 to 2010–11, the value of exports from the Mining industry more than doubled. By comparison, the value of exports from the manufacturing industry, after a peak in 2008–09, declined to 2006–07 levels. As a consequence, the Mining industry's contribution to total goods exported from Australia increased

18.3 MINING INDUSTRY CONTRIBUTION TO STATE PRODUCTION(a), Selected states



(a) State production as measured by total factor income at current prices.

Source: Australian National Accounts: State Accounts (5220.0).

18.4 VALUE OF EXPORTS(a), By industry of origin

	Mining \$m	Manufacturing \$m	All industries \$m	SHARE OF TOTAL EXPORTS	
				Mining %	Manufacturing %
2006–07	61 882	85 141	168 099	36.8	50.6
2007–08	72 832	88 260	180 857	40.3	48.8
2008–09	117 646	92 279	230 829	51.0	40.0
2009–10	99 693	79 799	200 720	49.7	39.8
2010–11	135 604	84 067	244 595	55.4	34.4

(a) On a free-on-board basis.

Source: ABS data available on request, International trade.

18.5 MINING INDUSTRY(a), Summary of operations—2009–10

ANZSIC Subdivision	Wages and salaries(b) \$m	Sales and service income(c) \$m	Operating profit before tax \$m	Change in inventories \$m	Industry value added \$m
Coal mining	4 120	44 844	12 678	196	22 533
Oil and gas extraction	2 384	28 273	12 845	44	22 573
Metal ore mining	5 583	61 126	25 856	846	35 713
Non-metallic mineral mining and quarrying	898	5 371	-422	-20	2 031
Exploration and other mining support services	3 766	13 873	**334	*78	4 956
Total Mining	16 751	153 488	51 291	1 144	87 807

*estimate has a relative standard error of 25% to 50% and should be used with caution

**estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

Source: *Australian Industry, 2009–10* (8155.0).

from 37% in 2006–07 to 55% in 2010–11, while that for the manufacturing industry fell from 51% to 34% over the same period.

Structure and performance

Production of an industry can be measured in terms of industry value added (IVA), in much the same way as industry GVA. However, unlike industry GVA (the national accounts concept of production), IVA is not adjusted for a number of national accounting conventions, as the information to make these adjustments cannot be collected in the Economic Activity Survey (the main source of data for this section). The advantage of using IVA is the availability of more detailed (component) industry statistics.

In 2009–10, mining businesses paid a total of \$16.8 billion in wages and salaries, and generated \$153.5 billion in sales and service income and \$87.8 billion IVA (table 18.5).

The Metal ore mining industry contributed the largest proportion (41%) of total mining production measured in terms of IVA, followed by Oil and gas extraction and Coal mining (both 26%). The Metal ore mining industry also generated the most operating profit before tax (50%, \$25.9b) in 2009–10.

In terms of wages and salaries, the largest industry contributors were Metal ore mining (\$5.6b or 33%) and Coal mining (\$4.1b or 25%).

Capital expenditure

In 2009–10, net capital expenditure (capital expenditure after disposals of assets) was highest in the Oil and gas extraction industry (43%), followed by Metal ore mining (32%) (table 18.6). The Exploration and other mining support services industry had the highest level of disposal of assets, with \$1,024 million (48% of total).

18.6 MINING INDUSTRY(a), Acquisition and disposal of assets—2009–10

ANZSIC Subdivision	Total acquisitions \$m	Disposal of assets \$m	Net capital expenditure \$m
Coal mining	9 115	531	8 584
Oil and gas extraction	18 883	272	18 611
Metal ore mining	14 232	262	13 970
Non-metallic mineral mining and quarrying	645	40	605
Exploration and other mining support services	2 757	*1 024	*1 733
Total Mining	45 632	2 129	43 503

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Australian Industry, 2009–10* (8155.0).

18.7 MINING INDUSTRY(a), Operating profit before tax

ANZSIC Subdivision	2008–09 \$m	2009–10 \$m
Coal mining	28 636	12 678
Oil and gas extraction	27 006	12 845
Metal ore mining	10 586	25 856
Non-metallic mineral mining and quarrying	–395	–422
Exploration and other mining support services	–2 677	**334
Total Mining	63 155	51 291

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Australian Industry, 2009–10* (8155.0).

Operating profit before tax (OPBT)

Operating profit before tax (OPBT) is a measure of profit before extraordinary items are brought to account and prior to the deduction of income tax and appropriations to owners (e.g. dividends paid).

From 2008–09 to 2009–10, OPBT for the Mining industry fell by \$11.9 billion or 19% to \$51.3 billion (table 18.7). The Coal mining and the Oil and gas extraction industries both fell significantly (56% and 52% respectively), which more than offset a large increase of \$15.3 billion (144%) by the Metal ore mining industry.

Research and experimental development (R&D)

The Organisation for Economic Co-operation and Development (OECD) defines R&D as comprising “... creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.” R&D includes types of activities: basic research, applied research and experimental development. In general, mining exploration is not considered to be R&D. Information on R&D expenditure by type of activity for the Mining industry can be found in chapter 26.

Graph 18.8 shows the type of business expenditure on R&D in the Mining industry. For the period 1999–2000 to 2009–10, Other current expenditure (which excludes labour costs) was the major component of R&D expenditure for the Mining industry, accounting for 81% of total Mining industry R&D expenditure in 2009–10. Other current expenditure is a broad category and includes expenditure on materials, fuels,

rent, leasing, maintenance, payments to outside organisations for specialised services, and the proportion of expenditure on general services and overheads attributable to R&D activity. Its value increased significantly from \$201 million in 1999–2000 to \$3,005 million in 2009–10 (69% and 81% of total Mining industry R&D expenditure respectively). The amounts spent on labour costs and capital expenditure also increased significantly over this period, by \$520 million and \$80 million respectively.

During the period 1999–2000 to 2009–10, the Mining industry’s contribution to total business R&D expenditure rose from 11% to 22%. The manufacturing industry’s share of total business R&D expenditure continued to be the highest, accounting for 25% in 2009–10.

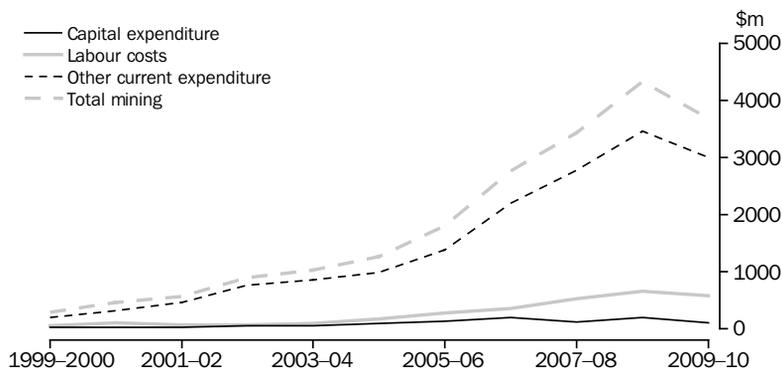
Mineral, oil and gas resources

Mineral resources

The statistics on identified mineral resources provided in table 18.9 are obtained from *Australia’s Identified Mineral Resources* publication produced by Geoscience Australia. They provide an indication of the extent of mineral resources available for extraction, with the main focus being on economic demonstrated resources (EDR).

EDR is a measure of the resources that are established, analytically demonstrated or assumed with reasonable certainty to be profitable for extraction or production under defined investment assumptions. Classifying a mineral resource as EDR reflects a high degree of certainty as to the size and quality of the resource and its economic viability.

18.8 MINING INDUSTRY, Type of expenditure on R&D



Source: Research and Experimental Development, Businesses, Australia (8104.0).

18.9 ECONOMIC DEMONSTRATED RESOURCES (EDR) OF MAJOR MINERALS—December 2009

Mineral	Quantity	Australia	World	Australia's percentage of world EDR	Australia's ranking in world holdings of EDR—2009
Bauxite	Gt	6	27	23	2nd
Black coal					
In situ	Gt	61	na	na	na
Recoverable	Gt	44	670(a)	7	5th
Brown coal					
In situ	Gt	41	na	na	na
Recoverable	Gt	37	148(a)	25	1st
Copper(b)	Mt	80	596	13	2nd
Diamond					
Gem and near gem(c)	Mc	105	na	na	na
Industrial	Mc	109	594	18	3rd
Gold(b)	t	7 399	47 000	16	2nd
Iron ore	Gt	28	168	17	2nd
Lead(b)	Mt	31	85	36	1st
Lithium(b)	kt	607	9 927	6	na
Manganese ore	Mt	181	1 420	13	4th
Mineral sands					
Ilmenite	Mt	200	1 252	16	2nd
Rutile	Mt	23	46	50	1st
Zircon	Mt	40	88	46	1st
Nickel(b)	Mt	24	69	35	1st
Silver(b)	kt	70	438	16	2nd
Tantalum(b)	kt	51	116	44	2nd
Uranium(b)(d)	kt	1 223	2 577(d)	47	1st
Zinc(b)	Mt	58	235	25	1st

na not available

(a) Geoscience Australia estimate.

(b) Quantity measured in contained metal.

(c) Detailed data are not available on world resources of gem/near gem diamond but Australia has one of the largest stocks for this category.

(d) From OECD Nuclear Energy Agency and International Atomic Energy Agency (OECD/NEA & IAEA) (2009). Compiled from the most recent data for resources recoverable at <US\$80 per kilogram of uranium.

Source: Geoscience Australia, Australia's Identified Mineral Resources, 2010.

18.10 ECONOMIC DEMONSTRATED RESOURCES OF SELECTED MINERALS

Mineral	Quantity	AUSTRALIA			WORLD		
		2008	2009	% change	2008	2009	% change
Bauxite	Gt	6.2	6.2	—	27.0	27.0	—
Coal, black(a)	Gt	39.2	43.8	11.7	681.0(b)	669.0(b)	-1.8
Coal, brown(a)	Gt	37.2	37.1	-0.3	147.0(b)	148.0(b)	0.7
Copper(c)	Mt	77.8	80.4	3.3	603.0	596.0	-1.2
Diamond(d)	Mc	95.7	109.1	14.0	586.0	594.0	1.4
Gold(c)	t	6 255.0	7 399.0	18.3	48 655.0	47 000.0	-3.4
Iron ore	Gt	24.0	28.0	16.7	158.0	168.0	6.3
Lead(c)	Mt	26.8	30.8	14.9	82.0	85.0	3.7
Lithium(c)	kt	584.0	607.0	3.9	4 514.0	9 927.0	120.0
Manganese ore	Mt	181.0	181.0	—	1 370.0	1 420.0	3.6
Mineral sands(e)	Mt	274.3	263.1	-4.1	1 399.0	1 385.7	-0.9
Nickel(c)	Mt	26.4	24.0	-9.1	69.9	68.6	-1.9
Silver(c)	kt	61.4	70.3	14.5	302.0	438.0	45.0
Tantalum(c)	kt	51.0	51.0	—	130.0	116.0	-10.8
Uranium(c)(f)	kt	1 163.0	1 223.0	5.2	3 047.0	2 577.0	15.4
Zinc(c)	Mt	53.1	58.4	10.0	193.0	235.0	21.8

— nil or rounded to zero (including null cells).

(a) Recoverable coal.

(b) Geoscience Australia estimate.

(c) Quantity measured in contained metal.

(d) Industrial diamond only. Data are not available on world resources of gem/near gem diamonds but Australia has stocks amongst the largest for this category.

(e) Includes ilmenite, rutile and zircon.

(f) From OECD Nuclear Energy Agency and International Atomic Energy Agency (OECD/NEA & IAEA) (2007). Compiled from the most recent data for resources recoverable at <US\$80/kilogram of uranium.

Source: Geoscience Australia, *Australia's Identified Mineral Resources*.

Table 18.9 shows the importance of the main mineral resources in Australia as at December 2009.

In terms of Australia's ranking in world holdings of EDR, in 2009, Australia had the world's largest EDR of brown coal (recoverable), lead, rutile, zircon, nickel, uranium and zinc, and ranked second in the world for bauxite, copper, gold, iron ore, ilmenite, silver and tantalum. In addition, Australia's EDR for industrial diamonds was ranked third and manganese ore was ranked fourth largest in the world.

The most significant increase in Australia's mineral EDR between 2008 and 2009 was recorded for gold (18%), followed by iron ore (17%) (table 18.10). However, the EDR of nickel was down 9%, while mineral sands fell by 4%.

Oil and gas resources

Australia's oil and gas resources encompass crude oil, condensate (a liquid mixture of pentane and heavier hydrocarbons that is recoverable from a

gas well through a separation system), naturally occurring liquefied petroleum gas (LPG) and natural gas. Economic demonstrated resources (EDR) for oil and gas are resources that are judged to be economically extractable and for which the quantity and quality are computed partly from specific measurements, and partly from extrapolation for a reasonable distance on geological evidence. Subeconomic demonstrated resources (SDR) are similar to EDR in terms of certainty of occurrence but are considered to be potentially economic only in the future.

The information presented in table 18.11 was obtained from the annual report *Oil and Gas Resources of Australia*, produced by Geoscience Australia. Between the start of 2006 and 2010, EDR for condensate increased by 82 gegalitres or 32%. The EDR of sales gas (natural gas for sale after treatment to remove impurities) increased by 550 billion cubic metres or 23%, while the EDR of LPG fell by 48 gegalitres (22%) over this period. In 2010, estimated crude oil reserves fell to 2006 levels. SDR for all oil and gas resources remained well below the levels of 2006.

18.11 OIL AND GAS RESOURCES(a), As at 1 January

	CRUDE OIL		CONDENSATE		LPG	SALES GAS	
	<i>gigalitres</i>	<i>million barrels</i>	<i>gigalitres</i>	<i>million barrels</i>	<i>gigalitres</i>	<i>million barrels</i>	<i>billion cubic metres</i>
ECONOMIC DEMONSTRATED RESOURCES							
2006	171	1 078	258	1 624	214	1 348	2 434
2007	161	1 010	239	1 504	207	1 299	2 446
2008	162	1 020	230	1 447	192	1 206	2 365
2009	188	1 181	343	2 156	177	1 113	3 158
2010	170	1 067	340	2 141	166	1 042	2 984
SUBECONOMIC DEMONSTRATED RESOURCES							
2006	95	599	146	917	78	488	1 884
2007	95	595	150	945	78	489	2 084
2008	81	507	208	1 305	77	486	2 313
2009	45	284	98	614	60	379	1 505
2010	45	286	94	592	60	379	1 506

(a) McKelvey classification estimates (according to the resource's geological certainty and economic feasibility).

Source: Geoscience Australia, *Oil and Gas Resources of Australia, 2010*.

18.12 MINERAL EXPLORATION EXPENDITURE, By state and territory

	2006-07	2007-08	2008-09	2009-10	2010-11	Change from 2006-07 to 2010-11
	\$m	\$m	\$m	\$m	\$m	%
New South Wales	144.1	189.9	175.3	130.4	153.2	6.3
Victoria	82.5	93.7	62.2	83.4	57.4	-30.4
Queensland	272.3	397.9	351.6	436.6	663.5	143.7
South Australia	260.8	355.2	220.8	167.9	254.7	-2.3
Western Australia	839.2	1 259.7	1 246.8	1 244.0	1 590.1	89.5
Tasmania	23.9	32.5	20.3	20.7	37.2	55.6
Northern Territory	92.2	132.7	146.2	149.4	195.3	111.8
Australia	1 714.6	2 461.4	2 223.2	2 232.6	2 951.3	72.1

Source: *Mineral and Petroleum Exploration, Australia (8412.0)*.

18.13 MINERAL EXPLORATION EXPENDITURE, By mineral sought

	2006-07	2007-08	2008-09	2009-10	2010-11	Change from 2006-07 to 2010-11
	\$m	\$m	\$m	\$m	\$m	%
Selected base metals	555.0	783.4	519.0	457.1	669.4	20.6
Copper	234.5	293.5	178.7	201.7	323.1	37.8
Silver, lead, zinc	139.4	186.5	80.5	51.6	75.5	-45.8
Nickel, cobalt	181.1	303.2	259.9	203.9	270.9	49.6
Gold	455.9	592.6	438.0	575.4	652.2	43.1
Iron ore	285.4	449.8	588.7	524.1	665.0	133.0
Mineral sands	37.3	37.0	30.6	16.0	6.2	-83.4
Uranium	114.1	231.5	185.2	169.1	213.9	87.5
Coal	193.2	234.8	297.3	321.2	519.7	169.0
Diamonds	26.9	21.7	10.0	3.7	0.6	-97.8
Other(a)	46.9	110.3	154.1	147.1	196.3	318.6
Total	1 714.6	2 461.4	2 223.2	2 232.6	2 951.3	72.1

(a) Includes tin, tungsten, scheelite, wolfram and construction materials.

Source: *Mineral and Petroleum Exploration, Australia (8412.0)*.

Expenditure on mineral, oil and gas exploration

Exploration involves the search for new ore occurrences or undiscovered oil or gas, and/or appraisal intended to ascertain or extend the limits of known deposits, using geological, geophysical, geochemical, drilling or other methods. It includes construction of shafts and adits, primarily for exploration purposes, but excludes activity of a developmental or production nature.

Mineral exploration

Expenditure during the last five years on mineral exploration (excluding oil and gas) is shown in table 18.12.

Mineral exploration expenditure in 2010–11 was \$2,951 million which was \$1,237 million (72%) higher than in 2006–07, with four states and the Northern Territory recording increases over the period. Western Australia had the highest absolute increase in exploration expenditure between 2006–07 and 2010–11 with a \$751 million (89%) rise followed by Queensland with

18.14 OIL AND GAS EXPLORATION EXPENDITURE

	2006–07	2007–08	2008–09	2009–10	2010–11	Change from 2006–07 to 2010–11
	\$m	\$m	\$m	\$m	\$m	%
Onshore	498.2	493.8	492.3	748.6	756.5	51.8
Offshore	1 727.3	2 541.1	3 318.4	2 745.5	2 558.9	48.1
Total	2 225.5	3 034.9	3 810.8	3 494.1	3 315.4	49.0

Source: *Mineral and Petroleum Exploration, Australia (8412.0)*.

18.15 MINERAL, OIL AND GAS PRODUCTION, Quantity

	Units	2004–05	2005–06	2006–07	2007–08	2008–09	Percentage change from 2004–05 to 2008–09
METALLIC MINERALS							
Bauxite	Mt	57	61	63	66	65	14.0
Copper (metal content)	'000 t	894	920	832	849	881	-1.5
Gold (metal content)	t	255	247	248	228	213	-16.5
Iron ore and concentrate	Mt	236	246	262	298	325	37.7
Lead (metal content)	'000 t	643	703	602	609	554	-13.8
Nickel (metal content)	'000 t	180	184	174	172	180	—
Silver (metal content)	t	2 226	2 007	1 731	2 002	1 903	-14.5
Uranium oxide	t	10 963	9 949	9 581	10 089	10 284	-6.2
Zinc (metal content)	'000 t	1 184	1 216	1 240	1 413	1 254	5.9
FUEL MINERALS							
Black coal (saleable)	Mt	305	311	326	326	340	11.5
Brown coal	Mt	67	68	66	66	68	1.6
Crude oil	ML	20 864	18 772	21 229	19 903	20 014	-4.1
Condensate	ML	7 927	8 087	8 352	8 365	8 829	11.4
Natural gas	Mm ³	23 847	23 838	28 310	26 556	26 669	11.8
Liquefied natural gas	'000 t	11 038	12 543	15 203	15 124	17 489	58.4
Liquefied petroleum gas	'000 t	2 588	2 781	2 756	2 543	2 630	1.6
INDUSTRIAL MINERALS							
Diamonds	'000 c	22 800	29 777	24 618	16 528	15 166	-33.5
Ilmenite	'000 t	860	744	1 313	1 060	762	-11.3
Leucosene	'000 t	71	77	61	82	50	-29.8
Manganese ore	'000 t	3 606	3 826	4 564	5 010	4 329	20.0
Phosphate rock	'000 t	1 936	2 083	2 131	2 157	1 963	1.4
Salt	'000 t	12 186	11 467	11 229	11 278	11 314	-7.2
Zircon	'000 t	471	455	433	518	484	2.7

— nil or rounded to zero (including null cells).

Source: *Australian Industry, 2008–09 (8155.0)*.

a \$391 million (144%) rise during this period. Western Australia continued to account for the majority of exploration expenditure at 54%, followed by Queensland at 22%, during 2010–11.

Nearly half of the mineral exploration expenditure in 2010–11 was for iron ore and gold (table 18.13), accounting for \$665 million (23%) and \$652 million (22%) respectively. In percentage terms, the greatest increases recorded for the period 2006–07 to 2010–11 were for other minerals (319%), coal (169%) and iron ore (133%). There was a sharp fall in expenditure on exploration of mineral sands (down 83%) and, silver, lead and zinc (down 46%) over the period 2006–07 to 2010–11. The significant decline in expenditure on diamond exploration in recent years continued in 2010–11 and is now negligible.

Oil and gas exploration

Data for oil and gas exploration expenditures are shown in table 18.14. In the period 2006–07

to 2010–11, total expenditure on oil and gas exploration rose by 49% (\$1,090m) due to increases in both offshore and onshore exploration expenditure of 48% (\$832m) and 52% (\$258m) respectively.

In 2010–11, total oil and gas exploration expenditure declined by \$179 million (5%), mainly due to a fall in offshore exploration of \$187 million (7%).

Production and trade – minerals, oil and gas

Production of mineral, oil and gas commodities

Tables 18.15 and 18.16 show the quantity and value respectively of selected minerals, oil and gas produced in Australia.

18.16 MINERAL, OIL AND GAS PRODUCTION, Value

	2004–05	2005–06	2006–07	2007–08	2008–09	Percentage change from 2004–05 to 2008–09
	\$m	\$m	\$m	\$m	\$m	%
METALLIC MINERALS						
Bauxite	862	875	847	799	855	-0.8
Copper (metal content)	3 777	6 290	7 559	7 456	5 775	52.9
Gold (metal content)	4 635	5 609	6 514	6 769	8 260	78.2
Iron ore and concentrate	8 330	12 897	15 958	22 422	34 217	310.8
Lead (metal content)	830	1 015	1 301	2 000	1 112	34.0
Nickel (metal content)	3 613	3 816	8 401	5 567	3 210	-11.1
Silver (metal content)	666	801	908	1 116	1 073	61.0
Uranium oxide	463	530	664	882	1 007	117.5
Zinc (metal content)	1 852	3 484	5 846	4 180	2 377	28.3
FUEL MINERALS						
Black coal (saleable)(a)	17 720	26 317	24 373	27 663	61 392	246.5
Brown coal	843	851	1 016	1 247	np	np
Condensate	3 101	4 045	4 237	5 352	4 156	34.0
Crude oil	8 471	10 080	11 193	13 506	11 971	41.3
Liquefied natural gas	3 953	4 930	5 543	6 380	10 830	174.0
Liquefied petroleum gas	1 315	2 002	1 858	2 146	2 029	54.3
Natural gas	2 445	2 547	2 954	2 854	3 646	49.1
INDUSTRIAL MINERALS						
Diamonds	468	np	np	361	432	-7.7
Ilmenite	np	np	119	np	97	np
Leucoxene	22	24	22	22	19	-13.6
Manganese ore	479	478	1 135	1 310	1 880	292.5
Phosphate rock	135	94	96	97	147	8.9
Salt	222	237	242	248	412	85.6
Synthetic rutile	401	419	393	382	414	3.2

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Excludes production from Tasmania.

Source: *Australian Industry, 2008–09* (8155.0).

In the period 2004–05 to 2008–09, the most significant increases in production were for liquefied natural gas (58%) and iron ore and concentrate (38%). Manganese ore (20%), bauxite (14%), natural gas (12%), saleable black coal (12%), condensate (11%), zinc (6%) and zircon (3%) also increased in production.

Production of diamonds, leucosene, gold, silver, lead, ilmenite, salt, uranium, crude oil and copper decreased between 2004–05 and 2008–09, with the largest falls recorded for diamonds (34%), leucosene (30%), gold (16%) and silver (15%).

The largest increases in percentage terms in the value of minerals production in the period 2004–05 to 2008–09 were for iron ore and concentrate (311%), manganese ore (293%), saleable black coal (247%), liquefied natural gas (174%), uranium oxide (118%) and salt (86%). Decreases were recorded for the value of nickel (11%) and leucosene (14%).

As few minerals can be directly used in the form in which they are mined, most undergo processing and treatment before use.

Table 18.17 shows the production of the main manufactured products of mineral origin.

Exports of mineral, oil and gas commodities

Tables 18.18 and 18.19 show the quantity and value respectively of the main mineral, oil and gas commodities exported from Australia. In 2009–10, black coal (including metallurgical and thermal) was the largest export earner (\$36 billion), followed by iron ore and pellets (\$35b), refined gold (\$13b), crude oil and other refinery feedstock (\$10b), liquid natural gas (LNG) (\$8b), copper (\$7b), alumina (\$5b) and aluminium (\$4b).

18.17 PRODUCTION OF PRINCIPAL MANUFACTURED PRODUCTS, By mineral origin

	Units	2005–06	2006–07	2007–08	2008–09	2009–10
Metals						
Non-ferrous						
Alumina	'000 t	17 826	18 506	19 359	19 597	20 057
Refined aluminium	'000 t	1 912	1 954	1 964	1 974	1 920
Refined copper	'000 t	461	435	444	499	395
Lead bullion	'000 t	141	114	152	155	148
Refined lead	'000 t	234	191	203	213	189
Refined zinc	'000 t	446	496	507	506	515
Refined tin	t	736	321	na	na	na
Ferrous						
Iron and steel	'000 t	7 886	8 010	8 151	5 568	6 886
Precious						
Refined gold	t	380	360	364	386	356
Refined silver	t	655	618	605	751	701
Petroleum						
Petroleum products						
Diesel automotive oil	ML	10 154	11 055	12 177	12 231	11 720
Industrial and marine diesel fuel	ML	31	21	3	13	3
Fuel oil(a)	ML	1 048	942	979	872	846
Automotive gasoline	ML	16 528	17 732	17 079	17 159	16 771
Building Materials						
Clay bricks (standard brick equivalent)	million	1 606	1 570	1 459	1 369	1 424
Portland cement	'000 t	8 910	9 380	9 752	9 108	8 903
Chemicals						
Single superphosphate	'000 t	1 309	944	1 413	1 961	2 136

na not available

(a) Excludes refinery fuel.

Source: *Production of Selected Construction Materials, June 2011 (8301.0)*; Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), *Australian Mineral Statistics, March Quarter 2011*.

18.18 EXPORTS OF MAJOR MINERALS, OIL AND GAS, Quantity

	Units	2006-07	2007-08	2008-09	2009-10
Alumina	kt	15 056	15 739	16 395	16 653
Aluminium (ingot metal)	kt	1 638	1 650	1 748	1 624
Coal, black					
Metallurgical	Mt	132	137	125	157
Thermal	Mt	112	115	136	135
Copper	kt	699	732	815	805
Diamonds	'000 c	24 632	16 528	16 279	10 355
Gold, refined	t	400	382	437	335
Iron and steel					
Iron ore and pellets	Mt	257	294	324	390
Iron and steel	kt	2 648	2 131	1 741	1 549
Lead	kt	635	588	645	658
Manganese ore and concentrate	kt	4 667	5 105	3 226	5 648
Nickel	kt	207	212	194	221
Oil and gas					
Crude oil and other refinery feedstock	ML	15 965	15 975	16 588	18 064
LNG	Mt	15	14	15	18
LPG	ML	2 824	2 589	2 500	2 776
Salt	kt	10 749	10 686	10 978	11 185
Tin	t	1 867	3 079	4 159	6 031
Titanium minerals					
Ilmenite concentrate	kt	999	894	1 538	1 763
Rutile concentrate	kt	307	399	550	575
Uranium oxide	t	9 519	10 139	10 114	7 555
Zinc	kt	1 321	1 507	1 471	1 482
Zircon concentrate	kt	555	637	685	748

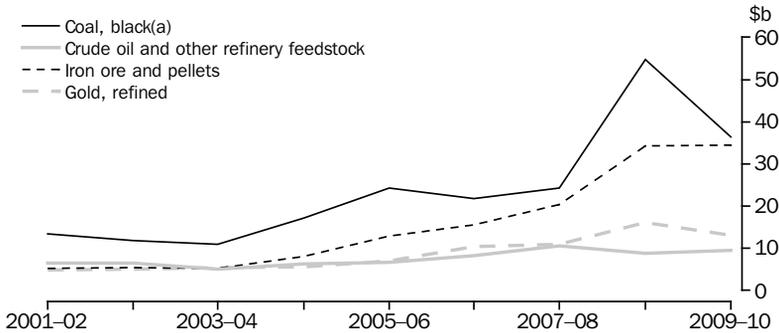
Source: Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Australian Mineral Statistics, March Quarter 2011.

18.19 EXPORTS OF MAJOR MINERALS, OIL AND GAS, Value

		2006-07	2007-08	2008-09	2009-10
Alumina	\$m	6 243	5 809	6 015	4 969
Aluminium (ingot metal)	\$m	5 650	4 967	4 724	3 838
Coal, black					
Metallurgical	\$m	15 039	15 996	36 813	24 526
Thermal	\$m	6 758	8 364	17 885	11 886
Copper	\$m	6 526	6 728	5 863	6 506
Diamonds	\$m	726	664	676	471
Gold, refined	\$m	10 320	10 903	16 146	12 996
Iron and steel					
Iron ore and pellets	\$m	15 512	20 423	34 239	34 515
Iron and steel	\$m	1 743	1 562	1 363	1 120
Lead	\$m	1 579	2 050	1 637	1 833
Manganese ore and concentrate	\$m	482	1 532	1 406	1 395
Nickel	\$m	8 469	5 653	2 705	3 875
Oil and gas					
Crude oil and other refinery feedstock	\$m	8 317	10 487	8 757	9 534
LNG	\$m	5 222	5 854	10 079	7 789
LPG	\$m	1 038	1 182	1 044	1 105
Salt	\$m	239	232	237	247
Tin	\$m	25	42	70	101
Titanium minerals					
Ilmenite concentrate	\$m	113	104	171	197
Rutile concentrate	\$m	259	277	335	382
Uranium oxide	\$m	660	887	990	751
Zinc	\$m	4 298	3 352	1 858	2 214
Zircon concentrate	\$m	478	421	540	370

Source: Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Australian Mineral Statistics, March Quarter 2011.

18.20 EXPORTS OF SELECTED MINERALS



(a) Includes metallurgical and thermal.

Source: ABARES, *Australian Mineral Statistics*, March Quarter 2011.

Graph 18.20 shows the value of Australia's four largest mineral exports during the period 2001–02 to 2009–10. The value of exports of black coal, iron ore and pellets, crude oil and other refinery feedstock and refined gold have all grown over this period, with iron ore and pellets recording the largest increase (569%), followed by black coal (173%) and refined gold (163%). Crude oil and other refinery feedstock increased 49% for the same period. The increases in the value of black coal exports in 2004–05 and 2005–06 were due to an increase in unit values of metallurgical and thermal coal.

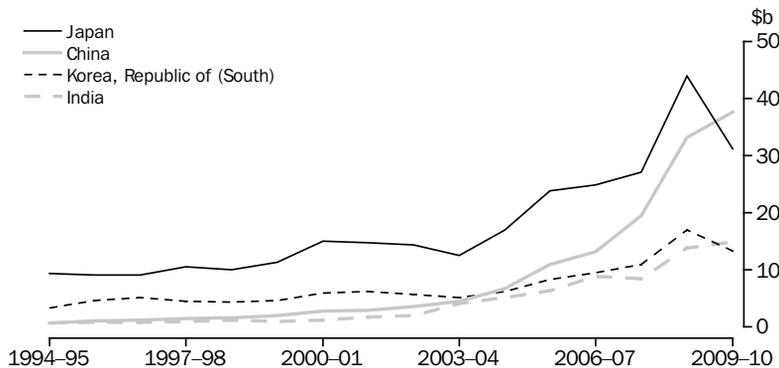
The value of coal exports in 2008–09 was more than double that of the previous year (an increase of 124%), mainly due to higher commodity prices. However, in 2009–10, despite a 26% increase in volume of metallurgical coal exports,

the value of total coal exports declined by 33%, due to lower unit values. In 2008–09, the value of iron ore exports increased 68% due to increased production and higher prices. The following year, increased volume of iron ore and pellets exported just off-set the fall in prices to see total value of exports rise marginally.

The major markets for Australian mineral, oil and gas exports for the period 1994–95 to 2009–10 were China (excludes SARs and Taiwan), Japan, India and Korea, Republic of (South) (graph 18.21).

Up until 2008–09, Japan had been the main destination for Australian minerals. However, for the first time, 2009–10 saw the value of exports of minerals to China (\$37.7b) exceed those to Japan (\$31.2b). China is a major export destination for iron ore, zinc ores concentrates, coal and copper.

18.21 EXPORTS OF MINERAL COMMODITIES, By country of destination



Source: ABARES, *Australian Commodity Statistics*, 2010.

18.22 IMPORTS OF MAJOR MINERALS, OIL AND GAS

	Units	2006–07	2007–08	2008–09	2009–10
QUANTITY					
Diamonds	'000 c	3 430	2 964	767	1 024
Gold	na	na	na	na	na
Iron and steel					
Iron ore and pellets	kt	4 722	4 401	3 599	5 094
Iron and steel	kt	2 318	1 848	2 082	1 736
Petroleum					
Crude oil and other refinery feedstock	ML	25 345	26 222	24 302	27 284
LPG	ML	748	965	1 002	1 067
Automotive gasoline	ML	2 912	3 533	4 087	3 884
Aviation turbine fuel	ML	1 045	1 846	2 026	2 168
Diesel fuel	ML	5 439	7 470	8 246	8 668
Fuel oil	ML	1 363	1 625	1 682	1 797
Lubricants	ML	365	396	369	415
Other products	ML	2 146	2 147	2 285	1 966
Phosphate rock	kt	472	707	540	85
Platinum and platinum group metals	kg	4 571	2 518	1 203	2 461
VALUE					
Diamonds	\$m	397	444	417	442
Gold	\$m	5 309	7 311	11 250	7 739
Iron and steel					
Iron ore and pellets	\$m	338	311	269	259
Iron and steel	\$m	2 479	2 225	3 191	1 889
Petroleum					
Crude oil and other refinery feedstock	\$m	13 360	17 149	14 727	15 031
LPG	\$m	261	436	382	405
Automotive gasoline	\$m	1 872	2 719	2 784	2 447
Aviation turbine fuel	\$m	668	1 505	1 393	1 283
Diesel fuel	\$m	3 466	6 155	6 314	5 270
Fuel oil	\$m	536	831	867	910
Lubricants	\$m	495	477	629	519
Other products	\$m	1 285	1 331	2 927	1 683
Phosphate rock	\$m	32	80	193	10
Platinum and platinum group metals	\$m	186	111	29	92

na not available

Source: Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Australian Mineral Statistics, March Quarter 2011.

Japan continues to be a major destination for aluminium, coal and iron ore and other refinery feedstock. Korea, Republic of (South) is a major buyer of Australian iron ore, lead ores and concentrates, refined lead metal and crude oil and other refinery feedstock. India imports large quantities of Australian coal, gold bullion and copper concentrates.

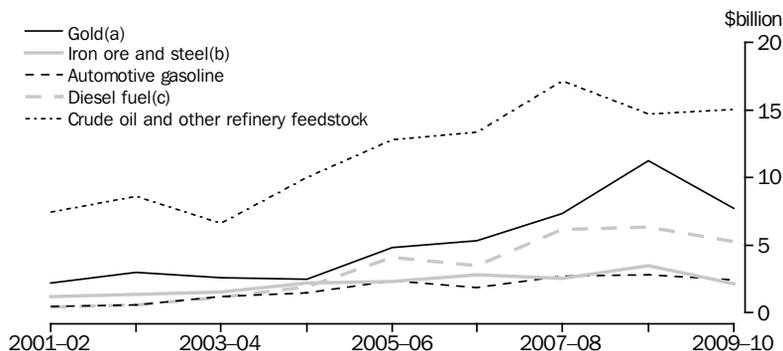
Imports of mineral, oil and gas commodities

Table 18.22 provides details of the quantity and value of the major commodities imported in the period 2006–07 to 2009–10. In terms of value, the largest imports for 2009–10 were for

crude oil and other refinery feedstock (\$15b), followed by gold (\$8b). The major sources of imports of crude oil and other refinery feedstock in 2009–10 were Malaysia, Indonesia, Vietnam and the United Arab Emirates, which collectively represented 63% of the total import quantity for this commodity.

Graph 18.23 shows imports of selected major minerals, oil and gas during the period 2001–02 to 2009–10. Crude oil and other refinery feedstock continues as Australia's highest value imported mineral commodity. Gold still ranks second despite a 31% fall in imports in 2009–10. Imports of diesel fuel, automotive gasoline, and iron ore and steel showed little fluctuation over the last two years.

18.23 IMPORTS OF SELECTED MINERAL COMMODITIES



(a) Refined and unrefined bullion. (b) Includes iron ore and pellets, and iron and steel.
(c) Includes automotive diesel oil, and industrial and marine diesel fuel.

Source: ABARES, Australian Commodity Statistics, 2010.

Profile of major minerals, oil and gas

This section is based mainly on information provided by Geoscience Australia and the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES). Values are given in Australian currency unless otherwise stated.

Minerals

Maps 18.24, 18.25, 18.26 and 18.27 show selected mines and deposits. Map 18.24 covers deposits of gold and diamonds, map 18.25 bauxite, iron ore and manganese ore, map 18.26 base metals (copper, zinc/lead and nickel) and mineral sands, and map 18.27 black and brown coal and uranium.

Bauxite, alumina and aluminium

Bauxite is a heterogeneous naturally occurring material from which alumina and aluminium are produced. The principal minerals in bauxite are gibbsite, boehmite and diaspore (which has the same composition as boehmite but is denser and harder). Bauxite is the ore from which alumina (aluminium oxide) is extracted, while aluminium is produced from smelting alumina.

Australia's aluminium industry is a large integrated industry of mining, refining, smelting and semi-fabrication, which is of major economic importance nationally and globally. Its 2009 economic demonstrated resources (EDR) of

bauxite (6 gigatonnes (Gt)) provides a world class resource base for the industry, which comprises five bauxite mines, seven alumina refineries, six primary aluminium smelters, twelve extrusion and two rolled product (sheet, plate and foil) mills.

In 2009, Australia was the largest producer of bauxite and alumina. Production in 2009 totalled 63 million tonnes (Mt) of bauxite (table 18.29), 20 Mt of alumina and 2 Mt of aluminium (ingot metal). Steadily increasing interest and investment from China (excludes SARs and Taiwan) has accelerated changes in Australia's bauxite exploration, mining and processing industries in recent years. In November 2009, the first shipment of bauxite from the Bindoon project in Western Australia was loaded for export to China.

Coal

Black coal forms under conditions where vegetation is buried under intense pressure and temperature over millions of years to form a sedimentary layer of rock.

Black coal is a sedimentary rock formed from vegetation which has been altered by temperature and pressure over millions of years. Black coals are distinguished by rank and may be sub-bituminous, bituminous or anthracite. The higher ranked black coals are primarily used for electricity generation and the production of coke, which is integral to the production of iron and steel. Black coal is also used as a source of

heat in the manufacture of cement and in food processing.

Brown coal, also known as lignite, is a less matured form of coal. It has high in situ moisture content (up to 60%) with a correspondingly low heating value. It is highly susceptible to spontaneous combustion. Brown coal is used widely for power generation, is made into briquettes and can be converted to liquid or gaseous fuels.

In December 2007, there were 118 operating black coal mines in Australia (74 open cut, 44 underground) with many new deposits added (mainly in Queensland) in 2009. In 2009, most of the coal was produced in Queensland (55%) and New South Wales (42%), with locally significant operations at Collie (Western Australia), Leigh Creek (South Australia) and in the Fingal Valley and at Kimbolton (Tasmania).

In 2008–09, Australia produced 441 Mt of raw black coal which yielded 340 Mt of saleable coal. Exports of black coal for 2009–10 comprised 157 Mt of metallurgical coal valued at \$25 billion and 135 Mt of thermal coal valued at \$12 billion.

Australia had 7% of the world's recoverable black coal EDR (as at the end of 2009) and ranked fifth, with the United States of America (31%) ranking first.

Australia produced about 6% of the world's black coal in 2009 and ranked fourth, with China (excludes SARs and Taiwan) ranked first (49%).

Australian brown coal production for 2008–09, all of which was from Victoria, was 68 Mt. The La Trobe Valley mines of Yallourn, Hazelwood and Loy Yang in Victoria produce about 98% of Australia's brown coal.

Australia has the world's largest recoverable brown coal EDR (25%). However, it produces only about 7% of the world's brown coal and is ranked the fifth largest producer after Germany (21%), Russia (10%), Turkey (9%), and the United States of America (8%).

Copper

Copper occurs in various forms. It can occur naturally in its pure state (native copper) but is principally mined as chalcopyrite. Copper is one of the most important and widely used metals of modern society due to its properties of:

- high electrical and heat conductivity
- ductility and malleability
- resistance to corrosion and
- ability to form alloys with other metals.

These properties enable copper to be used in a wide range of applications. The largest use of copper is in the electrical industry where copper wire and cable account for about half of the world's copper production. Other major markets are the motor vehicle and construction sectors. Copper is also an integral part of the expanding information and communication technology sector and is used in the manufacture of computers, mobile phones, fax machines and televisions.

Major Australian copper mining and smelting operations are at Olympic Dam (South Australia) and Mt Isa (Queensland), with smaller projects in New South Wales, Queensland, Western Australia and Tasmania. Australia's EDR of copper at the end of 2009 was 80.4 Mt, giving it the world's second largest holding of copper EDR with 13% of the total (after Chile with 27%).

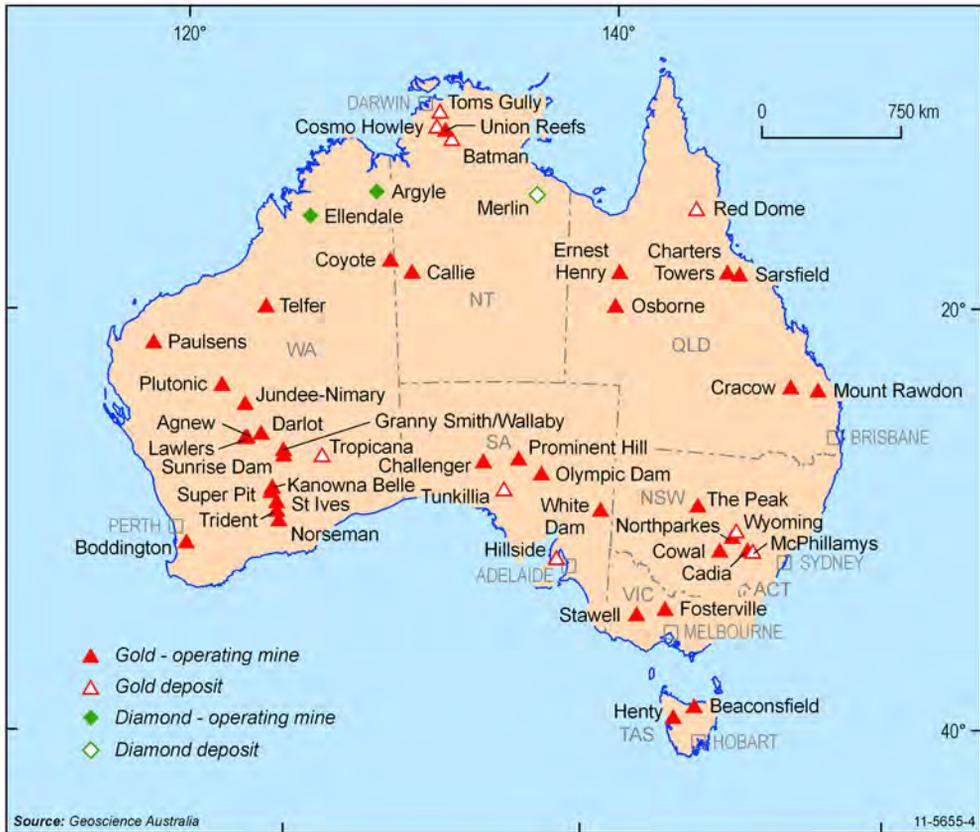
In 2009, Australia produced 950 kilotonnes (kt) of copper (metal content). Despite lower production at the Ernest Henry operation, Queensland dominated Australian production with 31% (largely from Mt Isa). South Australia continued as the second largest producer with Olympic Dam, now one of the world's largest mines, producing 18% of national production. New South Wales produced 161 kt in 2009, Western Australia 145 kt and Tasmania 27 kt.

As a producer, Australia's copper mine production ranked sixth in the world in 2009, with 6% of world output.

Diamond

Diamond is composed of carbon, and is the hardest known natural substance. Diamonds occur naturally but are extremely rare compared with other minerals. They are thought to form deep in the earth at high temperatures and pressures and are carried to the surface or near surface by volcanic rocks in narrow cylinder-like bodies called 'pipes'. A large proportion of industrial diamond is manufactured, and it is also possible to produce synthetic diamonds of gem quality. Uses for diamonds include jewellery,

18.24 SELECTED MINES AND DEPOSITS OF GOLD AND DIAMONDS—2011



computer chip manufacture, drill bit facing, and stone cutting and polishing. A diamond's mass is measured by carat weight, with one carat (c) defined as 0.2 grams.

Australia produced 15 million carats (Mc) of diamonds in 2009, making it the world's sixth largest producer of diamonds (all types) by weight after Botswana, Russia, Congo, South Africa and Canada. It is the fifth largest producer of industrial grade diamonds and the sixth largest producer of gem/near gem diamonds.

Australia's EDR at the end of 2009 of gem/near gem diamonds was 105 Mc and industrial diamonds 109 Mc. Australia's EDR of industrial diamonds is ranked third in the world, with 18% of world EDR. There are no detailed data available on world resources of gem/near gem diamonds but Australia's stocks are among the largest for this category.

Most of Australian production came from the Argyle mine in the Kimberley region of Western Australia, which produced 11 million carats. Production from the Argyle mine is mostly industrial and cheap diamonds. Due to a deterioration in global markets in 2009, production was suspended for three months and employment reduced by 61%, which resulted in production falling by about one third.

Gold

Gold has a range of uses but the two principal applications are as an investment instrument and in the manufacture of jewellery. Secondary uses, in terms of the amount of gold consumed, are in electronic and dental applications.

Gold resources occur and are mined in all Australian states and the Northern Territory. Australia's EDR of gold (at the end of 2009) was

18.25 SELECTED MINES AND DEPOSITS OF BAUXITE, IRON ORE AND MANGANESE ORE—2011



7,399 tonnes, the second largest in the world after South Africa.

Australian gold mine production in 2009 was 220 tonnes (metal content). This level of production made Australia the second largest mine producing country in the world in 2009, after China (excludes SARs and Taiwan) (300 tonnes). Australia's largest producer mine in 2009 was the Super Pit at Kalgoorlie, with 19 tonnes, followed by the Telfer operation in Western Australia where 18 tonnes were produced. In 2009, Western Australia dominated Australian production with 152 tonnes, just over two-thirds of total Australian output.

During 2009, exploration spending on gold in Australia fell by about 19% to \$463 million and its share of total exploration spending was 23%.

Iron ore

Iron is a metallic element which constitutes about 5% of the Earth's crust and is the fourth most abundant element in the crust. Iron ores are rocks from which metallic iron can be economically extracted. The principal iron ores are hematite and magnetite. Iron ore is the source of primary iron for the world's steel industries. Around 92% of Australian iron ore production occurs in the Pilbara region of

18.26 SELECTED MINES AND DEPOSITS OF BASE METALS AND MINERAL SANDS—2011



Western Australia, an area known to have 80% of Australia's total identified resources. Small levels of production come from elsewhere in Western Australia, Tasmania, South Australia and New South Wales. Australia's EDR of iron ore in 2009 was about 17% of world EDR, ranking Australia as the second largest iron ore holding in the world.

Australia's production of iron ore in 2009 was 394 Mt, which was 25% of the world's total iron ore production and made Australia the world's largest producer followed by Brazil at 19%. In 2009, Australia was the world's largest exporter of iron ore, shipping 363 Mt (natural weight) or 38% of total world exports. Brazil ranked second with 266 Mt (28%). The value of Australia's exports of iron ore and pellets in 2009–10 was \$34.5 billion.

Manganese ore

Manganese is the twelfth most abundant element in the Earth's crust and the fourth

most used metal in terms of tonnage, after iron, aluminium and copper. About 90% of the world's production of manganese is used in the desulphurisation and strengthening of steel. Other uses include the manufacture of dry batteries, as a colourant, and as an ingredient in plant fertilisers and animal feed. In 2009, manganese ore was mined in the Northern Territory and Western Australia.

Australia's EDR of manganese ore, at 181 Mt (at the end of 2009) is 13% of world EDR, ranking Australia fourth, with Ukraine (29%) ranked first.

Production of manganese ore in 2009 reached 4.4 Mt, 14% of world manganese ore output, ranking Australia second behind China (excludes SARs and Taiwan) (32%). Australian production comes from three mines – Woodie Woodie (Western Australia) and Groote Eylandt and Bootu Creek (both in the Northern Territory).

Mineral sands

The three main minerals mined from Australian mineral sands deposits are the titanium-bearing minerals rutile and ilmenite and the zirconium-bearing mineral zircon. Rutile and ilmenite are used mainly in the production of titanium dioxide pigment. A small portion of total titanium mineral production is used in making titanium sponge metal. Zircon is used to make glazes on ceramic tiles opaque, and is used in refractories and the foundry industry.

Australia's EDR of ilmenite at the end of 2009 was 200 Mt with 54% in Western Australia, 21% in Queensland and the rest in Victoria (12%), New South Wales (10%), and South Australia (3%). Australia accounts for 16% (the second largest holding behind China (excludes SARs and Taiwan) at 30%) of the world's EDR of ilmenite.

Victoria has the largest share of Australia's rutile EDR with 33%, followed by Queensland (25%), New South Wales (20%), Western Australia (19%) and South Australia (3%). Australia has the world's largest EDR of rutile (49%), followed by South Africa (18%) and India (16%). At the end of 2009, Australia's EDR of rutile was 23 Mt.

Australia's EDR for zircon at the end of 2009 was 40 Mt, with Western Australia, Victoria and Queensland holding around 76% of Australia's zircon EDR. In world terms, Australia has the world's largest EDR of zircon, with 46%.

Although Australia has substantial EDR of mineral sands, Geoscience Australia estimates that around 17% of ilmenite, 15% of rutile and 16% of zircon EDR is unavailable for mining, as they are in areas quarantined from mining that are largely incorporated into national parks. Deposits in this category include Moreton Island, Bribie Island and Fraser Island, the Cooloola sand mass, the Byfield sand mass and the Shoalwater Bay area (all areas in Queensland), and the Yuraygir, Bundjalung, Hat Head and Myall Lakes National Parks in New South Wales.

In 2009, Australia produced 1.5 Mt of ilmenite, 280 kt of rutile and 476 kt of zircon. About 1.8 Mt of ilmenite was exported during 2009 as well as 587 kt of rutile and 744 kt of zircon from production and stockpiles. Stockpiled ilmenite was upgraded to synthetic rutile, with Australia producing 616 kt of this commodity.

Australia was the second largest producer of ilmenite in 2009 with 17% of world production, behind South Africa with 21%, and the largest producer of rutile with 49%, followed by South Africa with 23%. Australia was also the largest producer of zircon with 41% of world production, followed by South Africa at 34%.

Nickel

More than 80% of nickel production is used in alloys. When alloyed (mixed) with other elements, nickel imparts toughness, strength, resistance to corrosion and various electrical, magnetic and heat resistant properties. About 65% of world nickel output is consumed in the manufacture of stainless steel, which is used widely in the chemical industry, motor vehicle manufacture, the construction industry and in consumer products such as sinks, cooking utensils, cutlery and white-goods.

Australia's EDR of nickel was 24 Mt at the end of 2009. Western Australia has the largest nickel resources, with 91% of total Australian EDR. Australia holds the largest share of the world's EDR (35% in 2009), followed by New Caledonia and Russia (both 10%) and Cuba (8%).

Australia's nickel mine production in 2009 was 166 kt, all of which came from Western Australia. The value of all nickel products exported in 2008–09 was almost \$3.2 billion. Australia was the world's third largest producer in 2009 (nickel content of all ores and concentrates), accounting for 12% of estimated world nickel mine production. Although nickel prices recovered during 2009, leading to increased production, some nickel mines were closed and others placed on care and maintenance. Russia was the largest producer with 262 kt (19% of world output), followed by Indonesia with 203 kt (15%).

Tantalum

Tantalum minerals have more than 70 different chemical compositions, of which tantalite, microlite, and wodginite are of greatest economic importance. Tantalum is used in the manufacture of capacitors required for the electronics and telecommunications industries. Approximately 60% of annual world consumption of tantalum is used in the electronics industries, with more than half used in the manufacture of mobile phones. It is also used in the chemical industry for its anti-corrosive properties.

Brazil has the world's largest EDR of tantalum (65 kt), followed by Australia with 51 kt. Almost all (98%) of the Australian deposits are located at Greenbushes and Wodgina in south west Western Australia.

In 2009, Australia was the world's fifth largest producer of tantalum (in the form of tantalum concentrates). World production was estimated by United States Geological Survey (USGS) data to be 665 tonnes. Production was dominated by Brazil with 180 tonnes, which amounted to about 28% of world output. Australia produced 81 tonnes of tantalum in 2009 which was a decrease of 85% on the previous year's output.

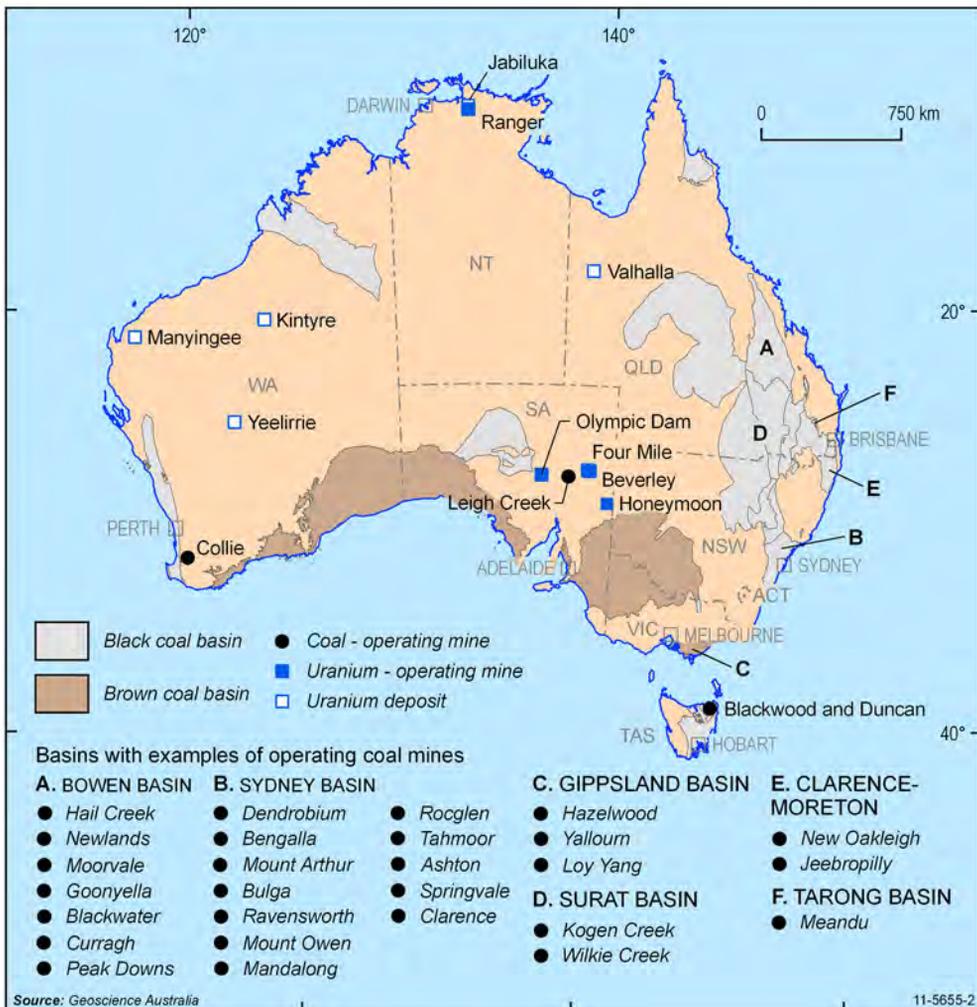
Mining at the Wodgina mine in Western Australia remained suspended throughout 2009 because of a fall in demand for tantalum.

Uranium

Major uses for uranium are as fuel in nuclear power reactors, in the manufacture of radioisotopes for medical applications and in nuclear science research using neutrons from reactors.

Australia had 1,223 kt of uranium in reasonably assured resources recoverable at costs of less than US\$80/kilogram of uranium at the end

18.27 SELECTED MINES AND DEPOSITS OF BLACK AND BROWN COAL AND URANIUM—2011



of 2009, representing around 47% of world resources in this category. Approximately 90% of Australia's total uranium resources in EDR are within the following deposits:

- Olympic Dam (South Australia) which is the world's largest uranium deposit
- Ranger, Jabiluka and Koongarra in the Alligator Rivers region (Northern Territory) and
- Kintyre and Yeelirrie (Western Australia).

Approximately 9% of uranium EDR is inaccessible for mining.

Three uranium mines operated in Australia in 2009 – Ranger open cut, Olympic Dam underground mine, and the Beverley (South Australia) in situ leach operations for a total of 7,982 tonnes, according to the World Nuclear Association. Australia, with approximately 16% of world uranium production in 2009, is the world's third largest producer after Kazakhstan and Canada.

Exports of uranium oxide in 2008–09 were 10,114 tonnes, valued at \$990 million. Exports of uranium are controlled by stringent safeguards, conditions which ensure that Australian uranium is used only for peaceful purposes and does not enhance, or contribute to, any military applications. Receiving countries must be a party to and comply with the Treaty on the Non-Proliferation of Nuclear Weapons, have a bilateral safeguards agreement with Australia and, in the case of non-nuclear weapon states, have an Additional Protocol, which ensures the International Atomic Energy Agency has access to and inspection rights in the recipient country. These requirements apply also to third party states that may be involved in processing and transshipment of the material.

Australian mining companies supply uranium under long-term contracts to electricity utilities in a number of countries, including the United States of America, Japan, China (excludes SARs and Taiwan), Korea, Republic of (South), Canada and several countries of the European Union.

Zinc, lead, silver

Zinc is the 23rd most abundant element in the earth's crust and the fourth most common metal in use after iron, aluminium and copper.

The construction, appliance and vehicle manufacturing industries use large amounts of zinc, mainly as coatings on steel beams, sheet steel and vehicle panels in the automotive industry. The widespread use of zinc as a protective coating is due mainly to its resistance to normal weathering. Zinc is used also in brass, alloy die cast precision components, pigments, salts, as oxide additives to rubber and for agricultural chemicals as well as for wrought or rolled products.

The widespread occurrence, relatively simple extraction, and combination of desirable properties have made lead useful to humans since at least 5000 BC. In deposits mined today, lead (in the form of galena) is usually associated with zinc, silver and commonly copper, and is extracted as a co-product of these metals. More than half of the lead currently used comes from recycling, rather than mining. The largest use is in batteries for vehicles and communications. Less important uses include cable sheathing, solder, casting alloys, chemical compounds, ammunition, ceramics and glass in TV and computer screens for radiation protection. Uses for lead could increase in the future in large storage batteries used for load-levelling of electrical power and in electric vehicles.

The relative scarcity, attractive appearance and malleability of silver have made it suitable for use in jewellery, ornaments and silverware. Its extensive use in coins throughout history has declined over the past 50 years. In Australia, the 1966 fifty-cent piece was the last coin in general use to contain silver (80% silver, 20% copper). Silver is mined and produced mainly as a co-product of copper, lead, zinc, and to a lesser extent, gold. Currently, photographic paper and film followed by the electronics and jewellery/tableware industries are the most important users of silver. Other uses include mirrors, as an anti-bacterial agent, for example in water treatment (as an ioniser with copper in domestic swimming pools) and for biocide and bacteriostatic activity in plastic and textiles formulations.

Australian EDR of zinc at the end of 2009 was 58 Mt, which represents 25% of the world EDR and the largest share of the world's zinc resources. Queensland holds the largest amount of Australian EDR, with the Northern Territory, New South Wales and Western Australia also having holdings.

In 2009, Australia's EDR of 31 Mt of lead was 36% of world EDR giving it the largest share of the world's lead resources. Queensland has around 59% of total Australian EDR. Other holdings are in the Northern Territory, New South Wales and Western Australia.

EDR for silver at the end of 2009 was 70 Kt (16% of world economic resources), with Queensland having the largest share at around 60%. Other holdings occur in South Australia, the Northern Territory, New South Wales and Western Australia.

Weak zinc and lead prices saw decreased production in 2009 with several mines on care and maintenance during the year. Of those that remained in operation, most pursued a high-grade, lower tonnage plan with reduced workforce and lower expenditure. Mine production of zinc, lead and silver during 2009 was 1,267 kt, 525 kt and 1,633 kt respectively. The majority of production was from Queensland, which contributed 63% to national zinc production for 2009, along with 72% of lead and 82% of silver. The Century zinc mine, which is located approximately 250 kilometres north of Mt Isa in north west Queensland, ranks in the top few zinc producing mines in the world. The Cannington mine, also located in north west Queensland, is the world's largest and lowest cost single mine producer of both silver and lead and a significant producer of zinc.

In terms of world production in 2009, Australia ranked second for lead after China (excludes SARs and Taiwan), third for zinc and fourth for silver.

Oil and gas

Map 18.28 shows locations of significant oil and gas production, pipelines and oil refineries.

Crude oil and condensate

In 2008–09, Australia produced 28.8 gegalitres of crude oil and condensate. Western Australia and Victoria accounted for 68% and 17% respectively of the total combined production of these commodities.

Liquefied natural gas (LNG)

Australia is a major exporter of LNG, with exports in 2009–10 of 18 Mt, an increase of 20% over the previous year. Export earnings from LNG in 2009–10 were \$7.8 billion.

Liquefied petroleum gas (LPG)

LPG is a valuable co-product of oil and gas production and petroleum refining. The major constituents of LPG are propane and iso- and normal-butane, which are gaseous at normal temperatures and pressures, and are easily liquefied at moderate pressures or reduced temperatures. Operations involving LPG are expensive in relation to other liquid fuels because LPG has to be refrigerated or pressurised when transported and stored. LPG is an alternative transport fuel for high mileage vehicles in urban areas, as well as a petrochemical feedstock and domestic fuel.

In 2008–09, Australia produced 3.9 gegalitres of LPG. The major producers were the Gippsland Basin and the North West Shelf, accounting for 41% and 40% of total production respectively.

18.28 LOCATIONS OF OIL AND GAS PRODUCTION AND PIPELINES—2009



International comparisons

The Australian continent is a resource rich land with a thriving Mining industry. Our miners have placed the nation amongst the world's leading producers of the most sought after minerals and contribute over half the total value of Australia's exports. Table 18.29 shows world production of most of the main commodities by the highest producing countries in 2009.

Australia ranks in the top six producing nations of fifteen important minerals (including lead,

manganese, silver, tantalum and ilmenite which are not listed in table 18.29). Australia's production of iron ore, bauxite, zircon and rutile rank first in the world, while production of gold, lead, manganese and ilmenite rank second. Zinc, nickel and uranium rank third, followed by coal and silver fourth, tantalum fifth and copper sixth.

Information on Australia's international standing in economic demonstrated resources (EDR) of a number of minerals can be found in table 18.9.

18.29 PRODUCTION OF MAJOR MINERALS, OIL AND GAS BY SIGNIFICANT PRODUCER COUNTRIES—2009

	Crude oil(a)	Natural gas(b)	Hard coal(c)	Iron ore	Copper(d)	Zinc(e)	Nickel(f)	Zircon(g)	Rutile	Bauxite	Uranium	Gold
	'000 barrels daily	bill. cubic metres	Mt	Mt	kt	kt	kt	kt	kt	kt	t	t
China (excludes SARs and Taiwan)	3 790	85	2 845	234	962	3 092	79	130	—	37	750	300
United States of America	7 196	583	906	27	1 200	736	—	na	na	—	1 453	210
Russian Federation	10 032	528	229	91	742	214	262	5	—	3	3 564	185
India	754	—	520	257	—	695	—	31	21	22	290	—
Peru	145	4	—	—	1 275	1 509	—	—	—	—	—	180
Canada	3 212	164	28	33	495	692	137	—	—	—	10 173	100
Chile	—	—	—	—	5 390	28	—	—	—	—	—	40
Indonesia	1 021	72	263	—	970	—	203	63	—	—	—	100
South Africa	—	—	247	55	116	28	—	392	134	—	563	210
Saudi Arabia	9 713	79	—	—	—	—	—	—	—	—	—	—
Iran	4 216	131	—	—	255	115	—	—	—	—	—	—
Mexico	2 979	55	—	—	238	494	—	—	—	—	—	55
United Arab Emirates	2 599	49	—	—	—	—	—	—	—	—	—	—
Iraq	2 482	1	—	—	—	—	—	—	—	—	—	—
Kuwait	2 481	11	—	—	—	—	—	—	—	—	—	—
Brazil	2 029	12	—	303	—	173	38	18	3	28	345	50
Colombia	685	11	73	—	—	—	72	—	—	—	—	48
Ukraine	—	19	—	66	—	—	—	35	60	—	840	—
Kazakhstan	1 682	33	96	—	406	442	—	—	—	5	14 020	22
Norway	2 342	104	—	—	—	—	—	—	—	—	—	—
Qatar	1 345	89	—	—	—	—	—	—	—	—	—	—
Namibia	—	—	—	—	—	208	—	—	—	—	4 626	—
Niger	—	—	—	—	—	—	—	—	—	—	3 243	—
Philippines	—	—	—	—	49	—	119	—	—	—	—	37
Australia	559	48	335	394	950	1 267	166	476	280	63	7 982	220
World total	79 948	2 976	5 842	1 588	15 761	11 296	1 347	1 160	577	201	50 772	2 350
Australian % of world	0.7	1.6	5.7	24.8	6.0	11.2	12.3	41.0	48.5	31.3	15.7	9.4

na not available

— indicates nil or very little production by world standards

(a) Includes crude oil, shale oil, oil sands and NGLs (liquid content of natural gas where recovered separately).

(b) Excludes gas flared or recycled.

(c) Includes anthracite and bituminous, and for the United States of America, sub-bituminous coal.

(d) Total metallic content of minerals produced.

(e) Recovered metal zinc content by analysis of zinc ores and concentrates, plus zinc content of other ores intended for recovery.

(f) Includes total metallic content of minerals produced.

(g) Zirconium mineral concentrates.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Commodity Statistics; BP Statistical Review of World Energy; U.S. Geological Survey, Mineral Commodity Summaries; Index Mundi; World Nuclear Association.

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19

ENERGY

Energy is a vital input to all sectors of the economy. As well as supplying the power on which industry and households depend, the production and supply of energy provides employment, investment and export opportunities, all of which contribute substantially to the welfare and standard of living of Australians.

Energy sources are divided into two groups – renewable (energy sources for which the supply is essentially inexhaustible) and non-renewable (energy sources with a finite supply). Renewable energy sources include solar, wind, hydro-electric and bio-energy. However, most of Australia's energy production, for export or domestic energy consumption, comes from uranium and fossil fuels, such as oil, natural gas and coal.

Australia's energy resources are outlined in the initial section of this chapter. Subsequent sections describe the supply and use of energy in Australia, the production of energy and international trade in energy products.

Information on the Electricity supply and Gas supply industries can be found in chapter 22 *Service industries*.

Other related information can be found in chapter 2 *Environment* and chapter 18 *Mining*.

Resources

Australia has large identified resources of uranium, coal and natural gas. It has the world's largest economic demonstrated resources (EDR) of uranium and brown coal and is ranked 5th in the world for black coal. For more detailed information on Australia's energy and mineral resources, see chapter 18 *Mining*.

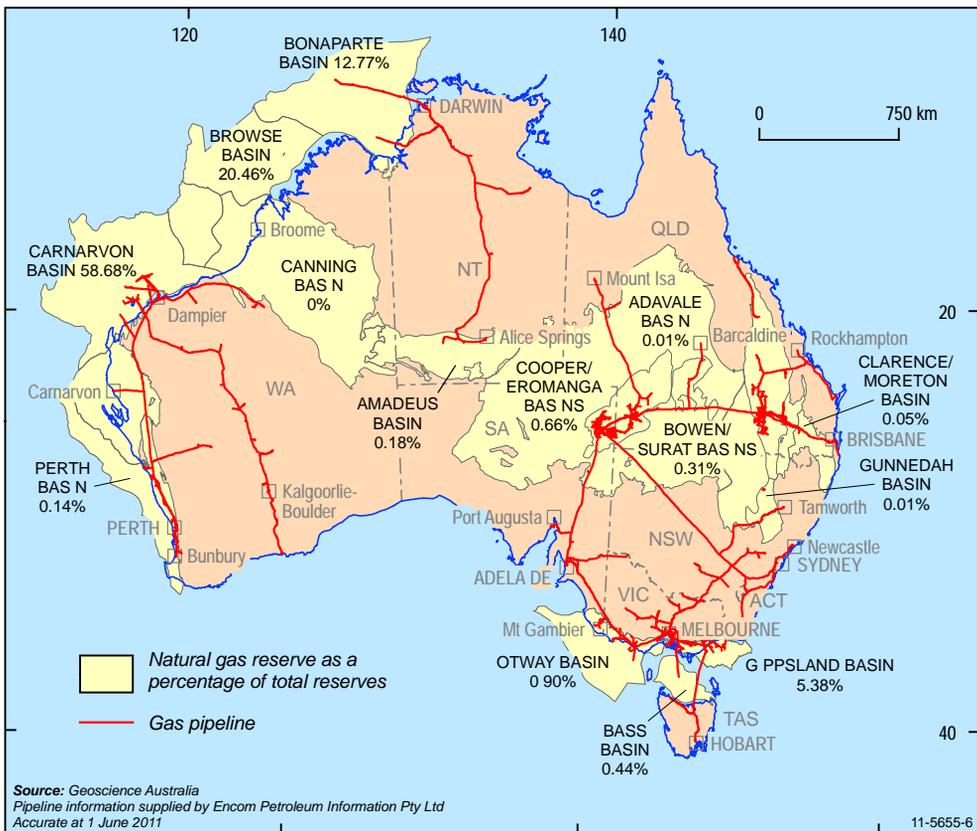
Australia has substantial resources of high quality black coal. At June 2010, the EDR of black coal (table 19.2) totalled 1,288,200 petajoules (PJ), with most of these resources located in New South Wales and Queensland. Small black coal resources occur in Western Australia, South Australia and Tasmania. Large brown coal deposits are mainly located in Victoria with other deposits in Western Australia, South Australia and Tasmania.

At June 2010, the EDR of natural gas totalled 134,504 petajoules, with the Carnarvon Basin accounting for nearly 60% of total reserves. Map 19.1 shows the extent of access to gas resources and major transmission pipelines in Australia. The total length of Australia's natural gas transmission and reticulation pipeline system as at June 2010 was 114,000 kilometres.

In the period 2000 to 2010, the EDR of liquefied petroleum gas (LPG), crude oil, and brown coal each decreased, while the EDR of black coal, condensate, natural gas and uranium increased. Changes in EDRs can result from production activity, new discoveries or the reclassification of existing resources.

The net present value (NPV) of an energy resource is the expected value of the resource based on current market value, with some modifications based on depletion and economic

19.1 GAS RESERVES AND PIPELINES—June 2011



19.2 ECONOMIC DEMONSTRATED RESOURCES OF PRIMARY ENERGY PRODUCTS(a)—30 June

Fuel	2000	2010	Change from 2000 to 2010
	PJ(b)	PJ	%
Black coal	1 188 450	1 288 200	8.4
Brown coal	365 690	359 870	-1.6
Crude oil	7 548	7 215	-4.4
Condensate(c)	11 100	12 414	11.8
Liquefied petroleum gas (LPG)	6 943	4 076	-41.3
Natural gas	82 240	134 504	63.6
Uranium	305 970	609 167	99.1
Total	1 967 941	2 415 446	22.7

(a) Non-renewable resources only.

(b) PJ = petajoule = 10^{15} joules.

(c) Geoscience Australia, Reserves Table 3, 2011.

Source: ABS National Accounts data available on request.

19.3 NET PRESENT VALUE OF PRIMARY ENERGY RESOURCES—30 June

Fuel	2000	2010	Change from 2000 to 2010
	\$m	\$m	%
Black coal	36 310	141 806	290.5
Brown coal	589	2 393	306.3
Crude oil	15 113	53 192	252.0
Condensate	10 523	29 256	178.0
LPG(a)	5 680	11 853	108.7
Natural gas	59 008	97 613	65.4
Uranium	2 210	3 391	53.4
Total	129 433	339 504	162.3

(a) Naturally occurring.

Source: Australian System of National Accounts, 2009–10 (5204.0), Table 62.

forces. At June 2010, the NPV of Australia's primary energy resources was \$339 billion (table 19.3). The energy resources with the highest NPV were black coal and natural gas, accounting for 42% and 29% of the total NPV of energy resources respectively. In the period 2000–2010, the NPV of energy resources in Australia increased from \$129 billion to \$340 billion (up by 162%).

Supply and use

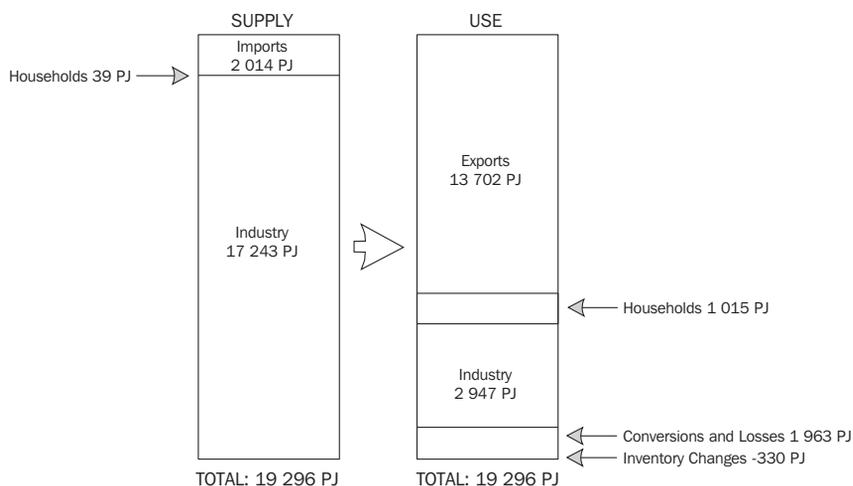
An overview of the supply and use of energy in Australia in 2009–10 is shown in diagram 19.4. Australia's total energy supply is derived from primary energy production plus imports of energy. In 2009–10, Australia produced 17,282 petajoules of primary energy products and

imported 2,014 petajoules of energy products, mainly crude oil and refined petroleum products.

Australia's primary energy products can be exported, converted into other energy products used by Australian households and industry, or stockpiled for future consumption. Most of the energy produced in Australia in 2009–10 was exported (13,702 PJ), with black coal (8,327 PJ) and uranium (3,551 PJ) accounting for 87% of exports. More information on imports and exports of Australia's energy is provided later in the chapter.

Of the 5,925 petajoules of energy available for domestic use in 2009–10, 2,947 petajoules were used by industry, 1,015 petajoules used by households and 1,963 petajoules of energy were lost in the conversion process, transmission and distribution.

19.4 ENERGY SUPPLY AND USE—2009–10



Source: Energy Account Australia, 2009–10 (4604.0).

Production

In 2009–10, Australia's total domestic energy production was estimated at 17,282 petajoules (table 19.5), of which black coal accounted for just over half (57%), followed by uranium (19%), natural gas (12%) and crude oil (5%). Renewable energy production accounted for only 1.6% (285 PJ) of total production in 2009–10.

In the period 2008–09 to 2009–10, Australia's total energy production decreased by 540 petajoules (3%). This was mainly due to a 31% decrease

in the production of uranium (down 1,483 PJ). Increases occurred for other fuels, including black coal (up 761 PJ) and natural gas (up 152 PJ).

Graphs 19.6 and 19.7 show longer-term trends in the production of non-renewable and renewable energy fuels. Over the period 1979–80 to 2009–10, the production of non-renewable fuels has shown an upward trend, increasing from 3,994 petajoules in 1979–80 to 16,996 petajoules in 2009–10 (up 326%). However, there has been less growth in the production of renewable energy fuels, which only increased from 194 petajoules in

19.5 PRODUCTION OF ENERGY

Fuel	2008–09	2009–10	Change from 2008–09 to
	PJ	PJ	2009–10
Black coal	9 066	9 827	8.4
Brown coal	669	744	11.2
Crude oil and ORF(a)	997	946	-5.1
LPG(b)	104	111	6.7
Natural gas	1 853	2 005	8.2
Uranium	4 846	3 363	-30.6
Renewables(c)	288	285	-1.0
Total	17 822	17 282	-3.0

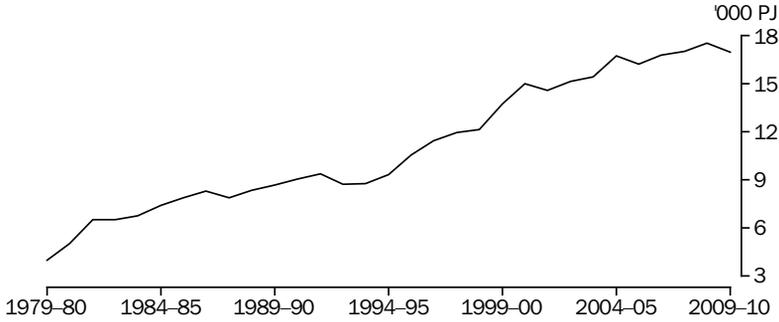
(a) Other refinery feedstock.

(b) Naturally occurring.

(c) Includes energy from wood, woodwaste, bagasse (produced from sugar cane fibre), biofuels, wind, water (hydro-electricity) and solar.

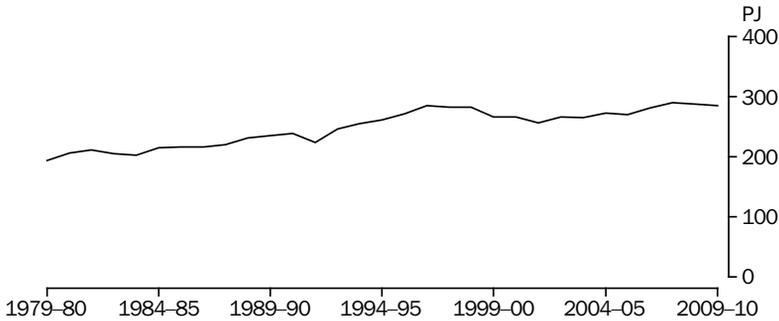
Source: Energy Account Australia, 2009–10 (4604.0).

19.6 PRODUCTION OF NON-RENEWABLE FUELS



Source: Australian Bureau of Agricultural and Resource Economics and Sciences, *Australian Energy Statistics – Energy Update, 2011*; ABS, *Energy Account Australia, 2009–10 (4604.0)*.

19.7 PRODUCTION OF RENEWABLE FUELS



Source: Australian Bureau of Agricultural and Resource Economics and Sciences, *Australian Energy Statistics – Energy Update, 2011*; ABS, *Energy Account Australia, 2009–10 (4604.0)*.

1979–80 to 285 petajoules in 2009–10 (up 47%). Renewable energy is still sourced predominantly from bagasse and hydroelectricity. Energy supplies from ‘newer’ renewables, such as wind, solar and biofuels have increased rapidly in recent years, but from a very low base.

International trade in energy products

In 2009–10, Australia exported a total of 13,702 petajoules of energy products (table 19.8). In terms of energy content, the largest contributors were black coal (61% of total energy exports) and uranium (26%), followed by natural gas (7%) and crude oil (5%). Total energy exports decreased by less than 1% from 2008–09 to 2009–10 with

natural gas up 16% and black coal up 12%. The largest fall was uranium (down 25%).

By contrast, total imports of energy products in 2009–10 were relatively small (2,014 PJ), with crude oil making up 52% of energy imports. Imports of primary energy products increased from 1,227 petajoules in 2008–09 to 1,311 petajoules in 2009–10 (up 7%). Imports of secondary energy products increased slightly from 689 petajoules in 2008–09 to 703 petajoules in 2009–10.

Graph 19.9 shows the comparison between energy exports and imports from 1979–80 to 2009–10. Over that period, exports of energy products exhibited very strong growth, up 587% from 1,995 petajoules in 1979–80 to 13,702 petajoules in 2009–10. In contrast, there was

19.8 ENERGY PRODUCTS, Volume of exports and imports

	EXPORTS			IMPORTS			
	2008–09	2009–10	Change from 2008–09 to 2009–10	2008–09	2009–10	Change from 2008–09 to 2009–10	
						PJ	PJ
Primary energy products							
Black coal	7 411	8 327	12.4	—	—	—	—
Crude oil and ORF(a)	614	668	8.8	941	1 056	12.2	12.2
LPG	68	75	10.3	27	29	7.4	7.4
Natural gas	838	972	16.0	259	226	—	—
Uranium	4 754	3 551	-25.3	—	—	—	—
<i>Total</i>	13 685	13 593	-0.7	1 227	1 311	6.8	6.8
Secondary energy products							
Automotive gasoline	8	8	—	139	132	-5.0	-5.0
Diesel	14	7	-50.0	318	335	5.3	5.3
Other refined fuels and products(b)	97	94	-3.1	232	236	1.7	1.7
<i>Total</i>	119	109	-8.4	689	703	2.0	2.0
Total	13 803	13 702	-0.7	1 915	2 014	5.2	5.2

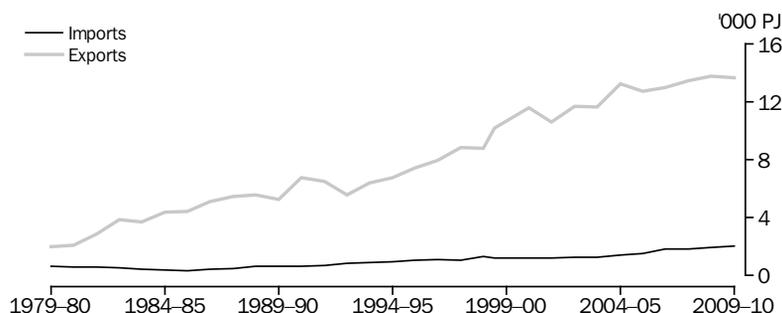
— nil or rounded to zero (including null cells)

(a) Other refinery feedstock (ORF).

(b) Excludes non-fuel petroleum products such as bitumen, lubricants, solvents and greases.

Source: *Energy Account Australia, 2009–10 (4604.0)*, tables 2.3, 2.4, 3.5 and 3.6.

19.9 EXPORTS AND IMPORTS OF ENERGY PRODUCTS(a)



(a) Excludes lubricants, solvents, greases and bitumen.

Source: Australian Bureau of Agricultural and Resource Economics and Sciences, *Australian Energy Statistics – Energy Update, 2011*.

slower growth in imports of energy products, up 230% from 610 petajoules in 1979–80 to 2,014 petajoules in 2009–10.

Table 19.10 shows the value and contribution of selected energy products to Australia's trade. In 2009–10, the export of selected energy products, excluding uranium, contributed \$56.7 billion (28%) to Australia's total merchandise export earnings. Black coal accounted for 64% of the total value of these selected energy exports (\$36.4b), followed by crude oil (16%) and natural gas (14%).

Imports of selected energy products accounted for \$27.5 billion (14%) of the total value of

Australia's imports in 2009–10. Crude oil accounted for 54% of the total value of these selected energy imports (\$14.7b), followed by refinery products (41%).

Energy use

In 2009–10, Australia's total domestic energy use, including losses and conversions (5,925 PJ), was one-third of the total energy produced (17,282 PJ) (diagram 19.4). Over the period 1979–80 to 2009–10, there was a 90% increase in Australia's total energy use, from 3,131 petajoules to 5,925 petajoules (graph 19.11).

19.10 ENERGY PRODUCTS, Value of exports and imports

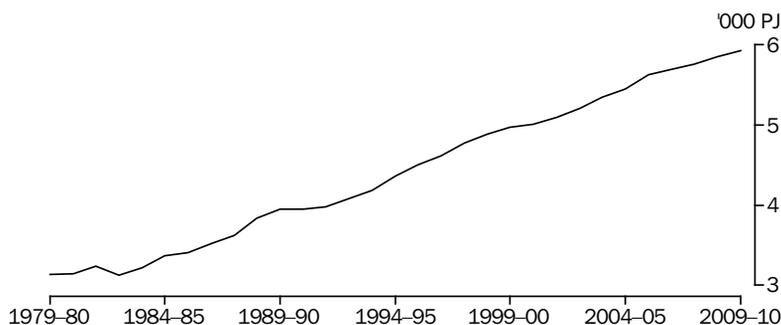
	EXPORTS			IMPORTS		
	2008–09	2009–10	Change from 2008–09 to 2009–10	2008–09	2009–10	Change from 2008–09 to 2009–10
	\$m	\$m	%	\$m	\$m	%
Black coal(a)	54 711	36 446	-33.4	16	12	-25.0
Crude oil and ORF(b)	8 255	8 953	8.5	14 463	14 720	1.8
LPG	1 044	1 103	5.7	382	405	6.0
Natural Gas	10 079	7 789	-22.7	2 165	1 218	-43.7
Refinery products	2 783	2 430	-12.7	12 928	11 136	-13.9
Total of selected energy products	76 872	56 721	-26.2	29 954	27 491	-8.2
Total merchandise trade	230 828	200 720	-13.0	219 485	203 590	-7.2

(a) Coking plus steaming.

(b) Other refinery feedstock (ORF).

Source: *International Trade in Goods and Services, Australia, July 2011* (5368.0), tables 12b and 13b.

19.11 TOTAL ENERGY USE



Source: Australian Bureau of Agricultural and Resource Economics and Sciences, *Australian Energy Statistics – Energy Update, 2011*; ABS, *Energy Account Australia, 2009–10* (4604.0).

Energy end-use by sector and industry

In 2009–10, Australia's end-users of energy, comprising Australian households and industries (excluding conversions and losses), used 3,962 petajoules of energy, an increase of 1% on the previous year (3,923 PJ) (table 19.12). Total net energy use by industry accounted for three-quarters of the energy use (2,947 PJ), with households accounting for the other quarter (1,015 PJ).

The Manufacturing industry was the largest end-user of energy by industry, using 1,034 petajoules in 2009–10. Non-ferrous metals manufacturing accounted for 35% (365 PJ) of manufacturing energy use, with the next largest contributor being Petroleum and chemicals products manufacturing (21%),

In 2009–10, the Transport, postal and warehousing industry was the second largest end user of energy by industry, at 18% (544 PJ), closely followed by the Mining industry at 18% (543 PJ).

Energy end-use by product

Table 19.13 shows the major energy products consumed for final purposes in Australia. Intermediate purposes are not reported in the table; for example, the consumption of fossil fuels used in the generation of electricity is not reported because those fuels are transformed in the generation process. If both the energy content of the fossil fuel and the energy content of the electricity were included, this would result in double counting.

19.12 ENERGY END-USE, By sector and industry

Sector and industry(a)	Change from 2008–09 to 2009–10		
	2008–09 PJ	2009–10 PJ	%
Agriculture, forestry and fishing	107	109	1.9
Mining	519	543	4.6
Manufacturing			
Food, beverages, tobacco and textiles (Subdivisions 11, 12 and 13)	127	125	-1.6
Wood, paper and printing (Subdivisions 14, 15 and 16)	80	84	5.0
Petroleum and chemical products (Subdivisions 17, 18 and 19)	232	222	-4.3
Iron and steel (Groups 211 and 212)	63	75	19.0
Non-ferrous metals (Groups 213 and 214)	379	365	-3.7
Other manufacturing	160	163	1.9
<i>Total Manufacturing</i>	1 041	1 034	-0.7
Electricity, gas, water and waste services	150	146	-2.7
Construction	144	144	0.0
Transport, postal and warehousing			
Road	166	171	3.0
Rail	38	38	0.0
Air and space	232	247	6.5
Water	43	36	-16.3
Other transport, postal and warehousing (Subdivisions 50–53)	51	51	0.0
<i>Total Transport, postal and warehousing</i>	531	544	2.4
Other services			
Wholesale and retail trade	123	121	-1.6
Accommodation and food services	57	57	0.0
Information, financial, rental and professional services(b)	138	137	-0.7
Administrative, education, health, arts and other services(c)(d)	115	114	-0.9
<i>Total Other services</i>	433	429	-0.9
<i>Total All industries</i>	2 926	2 947	0.7
Households	997	1 015	1.8
Total	3 923	3 962	1.0

(a) Industries are based on the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0). Some industries have been re-aggregated at Subdivision or Group level as shown in the table.

(b) Includes Information media and telecommunications; Financial and insurance services; Rental, hiring and real estate services; and Professional, scientific and technical services.

(c) Includes Administrative and support services; Public administration and safety; Education and training; Health care and social assistance; Arts and recreational services; and Other services.

(d) Includes General government.

Source: *Energy Account Australia, 2009–10 (4604.0)*.

The main fuels consumed in Australia's net domestic energy consumption in 2009–10 were Natural gas (24%), Electricity (22%), Diesel (18%) and Petrol (16%).

The net energy use by households of 1,015 petajoules consisted of Petrol (457 PJ), Electricity (217 PJ) and Natural gas (144 PJ).

The main fuels used in the net use of energy by the Manufacturing industry (1,034 PJ) were Natural gas (399 PJ), Electricity (241 PJ), Black coal (99 PJ) and Renewable energy (71 PJ).

The Mining and Transport, postal and warehousing industries each accounted for 14%

of domestic energy use in 2009–10. The main fuels consumed by the Mining industry were Natural gas (314 PJ) and Diesel (147 PJ). The main fuels used in transport were Other refined fuels and products (290 PJ, mainly aviation turbine fuel used in air transport) and Diesel (202 PJ), used largely in road transport.

Of the net use of renewable energy, Food, beverages, tobacco and textiles manufacturing used 34 petajoules of renewable energy in the form of bagasse, and the Wood, paper and printing industries used 29 petajoules in the form of wood and waste products. Households used 10 petajoules of solar energy in the form of solar electricity and solar hot water.

19.13 ENERGY NET END-USE BY PRODUCT—2009–10

Sector and industry(a)	Black	Natural	Electricity(b)	Diesel	Petrol	Renewable	Other(d)
	coal	gas				energy(c)	
	PJ	PJ	PJ	PJ	PJ	PJ	PJ
Agriculture, forestry and fishing	—	—	8	92	7	—	2
Mining	4	314	64	147	2	1	11
Manufacturing	99	399	241	33	17	71	174
Electricity, gas, water and waste services	—	14	121	9	3	—	—
Construction	—	3	—	96	39	—	6
Transport, postal and warehousing	—	20	14	202	10	8	290
Other services(a)	—	48	206	63	93	1	18
Total All industries	104	798	653	642	170	81	502
Households	—	144	217	82	457	67	47
Total	104	942	870	724	627	148	549

— nil or rounded to zero (including null cells)

(a) Industries are based on the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0). For definition of Other services, see table 19.12.

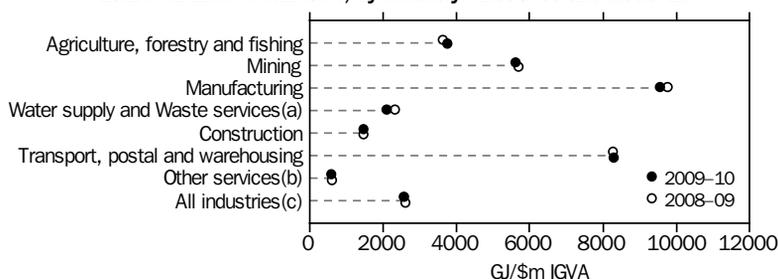
(b) Includes electricity generated from all sources, but excludes conversion losses in generating electricity from fossil fuels and transmission and distribution losses.

(c) Includes biofuels, wood and wood waste, bagasse and solar energy. Excludes renewable fuels used to generate electricity and the consumption of electricity from those sources.

(d) includes other refined fuels and products (mainly aviation turbine fuel), LPG, crude oil and refinery feedstock, coal by-products, coke and briquettes.

Source: *Energy Account Australia, 2009–10 (4604.0)*.

19.14 ENERGY INTENSITY, By industry—2008–09 and 2009–10



(a) Includes Water supply, sewerage and drainage services and Waste collection, treatment and disposal services.

(b) See table 19.12 for definition of Other services.

(c) Excludes Electricity supply and Gas supply.

Source: *Energy Account Australia 2009–10, 2011*.

Energy intensity

The energy intensity of an industry is a measure of the energy consumed to produce one unit of economic output. Differences in energy intensity reflect different production processes and the efficiency of energy use within the production input mix. In 2009–10, the Manufacturing industry at 9,600 gigajoules/\$m industry gross value added (GJ/\$m IGVA) was the most energy intensive industry within the Australian economy, followed by Transport (8,291 GJ/\$m IGVA) and Mining (5,651 GJ/\$m IGVA) (graph 19.14).

International comparisons

Per capita energy consumption

Countries around the world are striving for increased progress and economic development. However, development relies heavily on the increased provision and use of energy products and services. While energy consumption may have become more efficient, total energy consumption and energy consumption per capita continue to grow in developed countries. In developing countries, even more rapid growth

can be expected as their per capita income increases. Therefore, accurate measures and comparisons of energy consumption are required to understand the role of energy in driving economic development.

Total primary energy supply (TPES) figures are commonly used to represent intermediate and final consumption of energy in an economy. According to the International Energy Agency (IEA):

$$\text{TPES} = \text{production} + \text{imports} - \text{exports} - \text{international marine bunkers} - \text{international aviation bunkers} + \text{stock changes}$$

Table 19.15 shows TPES as tonnes of oil equivalent (toe) per capita and per GDP (energy intensity ratio) for a number of OECD countries and other countries. It should be noted that these figures can be misleading indicators for cross-country comparisons because countries exhibit a range of climates, industrial structures, geographical features and economic development traits. Therefore, careful analysis should also involve the breakdown of these figures to identify individual factors such as changes to the level of economic activity (production effect), the composition of the economy (structural effect), and the energy intensity of energy-using sectors (real intensity effect).

Australia's TPES is valued at 5.93 toe per capita, above the OECD total of 4.28 toe per capita, and well above the world total of 1.80 toe per capita. In contrast, Australia's energy intensity ratio is on par with the world total of 0.19 toe per GDP and also above the OECD total (0.16 toe per GDP). Typically, developed countries supply and consume more energy per capita compared to their less developed counterparts and Australia's energy supply is one of the highest in the world. This may be partially due to Australia's propensity to extract its abundant, low-cost energy resources, especially coal and gas, and partially due to the energy intensive nature of Australia's exports. Australian manufacturing is

energy intensive (in 2009–10, the manufacturing industry accounted for over one-third of Australia net energy use by industry). In particular, energy use for the production of non-ferrous metals (aluminium refining and aluminium smelting) increased dramatically as Australia captured a larger share of the global market. Net energy use in the non-ferrous metal sector accounted for 35% of the energy use by the manufacturing industries in 2009–10.

Contribution of renewable energy sources

The contribution of renewable energy to total primary energy supply varies widely between countries. This reflects both their level of development and the availability of natural resources used to produce renewable energy, especially water, biomass and geothermal energy. Countries with abundant water supplies and suitable topography, such as Norway, Sweden and New Zealand, have high shares of renewables, dominated by hydro-electricity. Iceland has the highest share of renewables, attributable to its abundant geothermal energy sources.

Australia's contribution of renewable energy for 2010 was relatively low at 5.2%, compared with 7.6% for the OECD country total. It has historically been dominated by biomass (bagasse and wood) and hydro-electricity (the generation of which varies between years according to river inflows). In more recent years, the use of wind to generate electricity, and solar to generate electricity and heat, have increased.

Under-developed and developing countries often have a greater reliance on certain types of renewables (e.g. traditional biomass such as wood used for home cooking/heating) than developed countries.

Table 19.16 compares the contribution of renewable energy to TPES for a number of OECD and other countries.

19.15 TOTAL PRIMARY ENERGY SUPPLY(a), By country—2009

	TPES/population (toe/capita)(b)	TPES/GDP (PPP) (toe/\$ '000)(c)
Australia	5.93	0.19
Austria	3.79	0.12
Belgium	5.30	0.18
Brazil	1.24	0.15
Canada	7.53	0.25
Chile	1.70	0.15
China (excludes SARs and Taiwan)	1.70	0.19
Czech Republic	4.00	0.20
Denmark	3.37	0.12
Finland	6.21	0.22
France	3.97	0.15
Germany	3.89	0.14
Greece	2.61	0.11
Hungary	2.48	0.17
Iceland	16.38	0.50
India	0.58	0.15
Indonesia	0.88	0.22
Ireland	3.21	0.10
Italy	2.74	0.11
Japan	3.71	0.14
Korea, Republic of (South)	4.70	0.20
Luxembourg	7.95	0.13
Mexico	1.63	0.16
Netherlands	4.73	0.15
New Zealand	4.02	0.17
Norway	5.85	0.15
Poland	2.46	0.16
Portugal	2.27	0.13
Slovakia	3.09	0.18
South Africa	2.92	0.27
Spain	2.75	0.12
Sweden	4.88	0.16
Switzerland	3.45	0.10
Turkey	1.36	0.12
United Kingdom	3.18	0.11
United States of America	7.03	0.19
OECD total	4.28	0.16
World	1.80	0.19

(a) Total primary energy supply (TPES) is made up of production + imports – exports – international marine bunkers – international aviation bunkers + stock changes.

(b) toe: tonnes of oil equivalent.

(c) Referenced to year 2000 US dollar exchange rate; PPP: purchasing power parity.

Source: International Energy Agency (IEA), Key World Energy Statistics 2011, Oct 2011.

19.16 CONTRIBUTION OF RENEWABLE ENERGY, Percentage of TPES(a), By country

	1977	1987	1997	2007	2010
Australia	7.3	6.3	6.5	5.5	5.2
Austria	13.4	22.4	21.9	24.1	26.0
Belgium	0.1	0.5	1.6	2.7	4.1
Canada	14.4	17.8	16.9	16.3	16.5
Chile	na	na	na	23.6	22.7
Czech Republic	0.4	0.4	1.7	4.7	6.4
Denmark	2.1	5.9	8.7	16.3	18.8
Estonia	na	na	na	10.7	14.4
Finland	19.3	17.6	21.5	23.5	24.9
France	9.0	8.2	7.3	6.6	7.9
Germany	1.5	1.6	2.6	7.8	9.3
Greece	4.5	4.1	5.6	5.7	7.5
Hungary	2.0	1.8	3.3	5.1	7.6
Iceland	54.8	68.4	69.1	80.8	85.3
Ireland	0.8	0.7	1.5	3.1	4.0
Israel	na	na	na	3.5	4.9
Italy	6.1	5.1	5.5	6.7	10.2
Japan	2.0	3.4	3.5	3.2	3.0
Korea, Republic of (South)	0.4	0.7	0.7	0.6	0.7
Luxembourg	0.8	1.0	1.6	2.6	2.9
Mexico	12.5	11.7	10.9	10.0	10.3
Netherlands	0.3	0.2	2.2	3.0	3.6
New Zealand	28.2	30.7	29.6	32.1	38.6
Norway	40.6	46.4	44.3	46.5	37.3
Poland	1.4	1.9	4.3	5.0	6.9
Portugal	19.0	14.8	17.8	17.7	24.0
Slovakia	2.1	1.5	3.9	5.4	6.7
Slovenia	na	na	na	10.1	12.7
Spain	5.7	3.8	6.5	6.9	11.4
Sweden	19.2	24.1	27.5	30.5	32.7
Switzerland	18.1	16.9	17.1	17.7	18.8
Turkey	25.0	21.0	15.9	9.6	11.0
United Kingdom	0.2	0.2	1.0	2.2	3.3
United States of America	3.7	5.6	5.2	4.7	5.6
OECD total	4.7	6.1	6.2	6.6	7.6
Brazil	45.8	49.3	40.9	44.5	na
China (excludes SARs and Taiwan)	32.5	26.7	20.4	12.8	na
India	59.6	47.9	36.1	29.0	na
Indonesia	60.5	48.3	36.8	34.4	na
Russian Federation	na	na	na	2.9	na
South Africa	10.5	9.9	11.2	10.1	na

na not available

(a) Total primary energy supply (TPES) = production + imports – exports – international marine bunkers – international aviation bunkers + stock changes.

Source: OECD Factbook 2010: Economic, Environmental and Social Statistics; OECD Factbook 2011–2012: Economic, Environmental and Social Statistics.

Business expenditure on energy research and experimental development

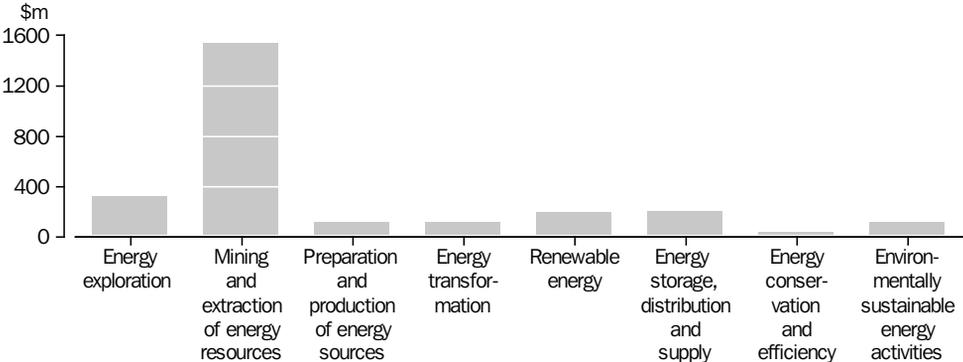
Research and experimental development (R&D) expenditure is important in fostering innovation, in order to increase productivity. In 2009–10, businesses in Australia spent \$16,685 million on R&D, of which \$2,722 million (16%) was directed to energy-related R&D as classified by socio-economic objective (SEO). The SEO classification allows R&D activity to be categorised according to the intended purpose or outcome of the research, rather than the processes or techniques used in order to achieve this objective. The SEO reflects the dominant beneficiary or beneficiaries of the research output.

Business expenditure on R&D is further classified to different energy sources and stages of the energy supply chain (graph S19.1). In 2009–10, R&D directed to the SEO,

Mining and extraction of energy resources, totalled \$1,542 million or 57% of total business expenditure on energy R&D. Mining and extraction of energy resources covers R&D directed towards mining and extraction of energy mineral resources (such as coal, oil and gas) as well as the extraction of geothermal energy.

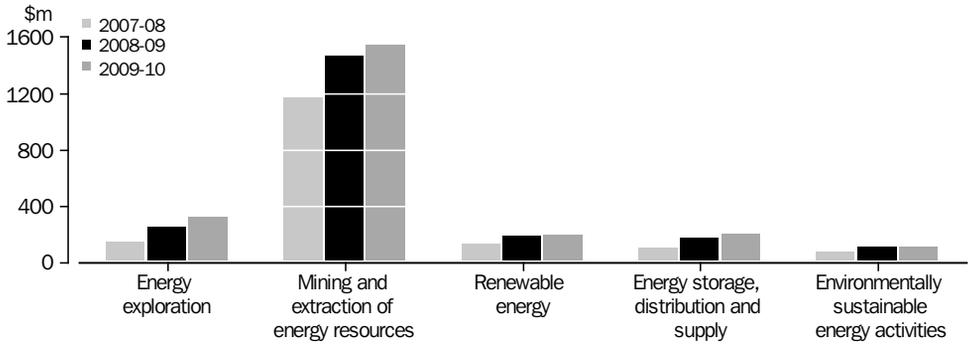
From 2007–08 to 2009–10, business expenditure on R&D related to energy SEOs increased by 30%, compared to an 11% increase in total business expenditure on R&D. Within energy SEOs, the increase was predominantly related to activities supporting Mining and extraction of energy resources (graph S19.2) which rose by \$373 million (or 32%) between 2007–08 and 2009–10.

S19.1 BUSINESS EXPENDITURE ON R&D BY SELECTED ENERGY SEO—2009–10



Source: Research and Experimental Development, Businesses, Australia, 2009–10 (8104.0).

S19.2 BUSINESS EXPENDITURE ON R&D BY SELECTED ENERGY SEO
—2007-08 to 2009-10



Source: *Research and Experimental Development, Businesses, Australia, 2009-10 (8104.0)*.

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MANUFACTURING

Manufacturing broadly relates to the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machinery or by hand. Manufacturing covers a range of production techniques ranging from computer-assisted production using robots to production of fine jewellery by hand.

The Manufacturing industry contributed 9% to Australia's gross domestic product (GDP) in 2009–10.

In 2010–11, the industry employed 9% of all people employed in Australia, with males outnumbering females by a ratio of nearly 3 to 1. The industry accounted for 34% of the value of merchandise exports in 2010–11; New Zealand was the main destination for exported Australian manufactured commodities, taking goods valued at \$7.1 billion in 2010–11.

Related information can be found in chapters 17 *Forestry and fishing*, 18 *Mining*, 19 *Energy*, 29 *Prices* and 31 *International accounts and trade*.

More information on the Manufacturing industry can be found in chapters 8 *Labour*, 15 *Industry structure and performance*, 25 *Information and communication technology* and 26 *Research and innovation*.

Manufacturing industry

Economic contribution

The contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP), is measured by industry gross value added (GVA). Information on the relationship between industry GVA and GDP is provided in the *Industry structure and performance* chapter.

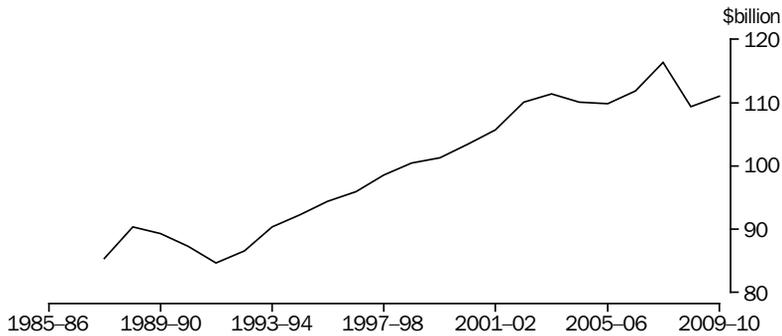
Total production of the Manufacturing industry, as measured by industry GVA (in volume terms), increased 37% from 1991–92 to a peak of \$116 billion in 2007–08 (graph 20.1). The impact

of the global financial crisis saw the level of manufacturing production fall by 6% in 2008–09, before staging a small recovery in 2009–10.

Table 20.2 shows the industry GVA for components of the Manufacturing industry. The contribution of the Manufacturing industry to Australia's GDP between 2005–06 and 2009–10 fell from 9.5% to 8.7%.

During this period, Manufacturing industry GVA (in volume terms) rose \$1.3 billion or 1.1%. The largest increase in production over the period was for Metal products manufacturing (15%), followed by Food, beverage and tobacco products (4.4%).

20.1 MANUFACTURING PRODUCTION(a)(b)



(a) Industry gross value added. (b) Volume measures. Reference year is 2008–09.

Source: Australian System of National Accounts (5204.0).

20.2 MANUFACTURING INDUSTRY, Gross value added(a)

NIPIND Sub-industries(b)		2005–06	2006–07	2007–08	2008–09	2009–10	Percentage
							change from 2005–06 to 2009–10
Food, beverage and tobacco products	\$m	22 743	22 973	22 945	22 228	23 755	4.4
Textile, clothing and other manufacturing	\$m	6 153	6 096	6 381	5 720	4 704	-23.5
Wood and paper products	\$m	8 309	8 080	7 768	7 176	7 442	-10.4
Printing and recorded media	\$m	5 484	5 536	5 676	4 683	4 486	-18.2
Petroleum, coal, chemical and rubber products	\$m	20 979	20 608	21 113	18 995	19 660	-6.3
Non-metallic mineral products	\$m	5 424	5 551	5 801	5 764	5 658	4.3
Metal products	\$m	20 048	22 024	24 521	23 738	22 990	14.7
Machinery and equipment	\$m	21 671	21 659	22 375	21 099	22 361	3.2
Total manufacturing(c)	\$m	109 798	111 869	116 306	109 403	111 057	1.1
Contribution to GDP	%	9.5	9.4	9.4	8.7	8.7	

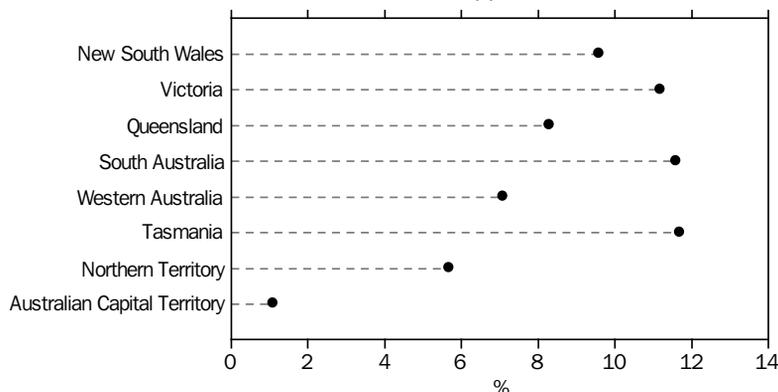
(a) Volume measures. Reference year is 2008–09.

(b) Classified according to the National Income and Production Industry Classification (NIPIND) which uses as its basis the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(c) Volume measures for years other than 2008–09 and 2009–10 are not additive.

Source: Australian System of National Accounts, 2009–10 (5204.0).

20.3 MANUFACTURING INDUSTRY'S CONTRIBUTION TO STATE AND TERRITORY PRODUCTION(a)—2009–10



(a) State and territory production as measured by total factor income (in current prices).

Source: Australian National Accounts: State Accounts (5220.0).

Production for the Textile, clothing and other manufacturing industry fell by 24%. Other industries that recorded falls over this period were Printing and recorded media (18%), Wood and paper products (10%) and Petroleum, coal, chemical and rubber products (6.3%).

In the year to June 2010, the Textile, clothing and other manufacturing industry suffered the biggest fall in production (18% decrease), while Food, beverage and tobacco products experienced the greatest rise (6.9%).

Contribution to state and territory production

Graph 20.3 shows the Manufacturing industry's contribution to state and territory production (in current prices) for 2009–10. Tasmania and South Australia had the highest contribution to state production from manufacturing (11.7% and 11.6% respectively), followed by Victoria (11.2%) and New South Wales (9.6%). The Australian Capital Territory had the lowest contribution by manufacturing in 2009–10, with 1.1%.

Structure and performance

Production of an industry can be measured in terms of industry value added (IVA), in much the same way as industry GVA. However, unlike industry GVA (the national accounts concept of production), IVA is not adjusted for a number of national accounting conventions, as the information to make these adjustments cannot be

collected in the Economic Activity Survey (a major source of data in this section). The advantage of IVA is the availability of more detailed industry.

In 2009–10, manufacturing businesses paid \$52 billion in wages and salaries, and generated \$381 billion of sales and service income and \$97 billion of industry value added (IVA) (table 20.4).

Food product manufacturing was the largest contributor to total manufacturing sales and service income (\$74b or 19%), the largest contributor to wages and salaries (\$9b or 18%), and also contributed the most to total manufacturing IVA (\$17b or 17%). Other industries making major contributions were Primary metal and metal product manufacturing (16% of sales and service income and 7% of IVA), Machinery and equipment manufacturing (9% of sales and service income and 11% of IVA) and Transport equipment manufacturing (8% of sales and service income and 9% of IVA).

Capital expenditure

Overall, capital expenditure by the Manufacturing industry decreased by \$4.1 billion (20%) between 2008–09 and 2009–10 (table 20.5).

Ten of the fifteen Manufacturing industry components recorded decreases in capital expenditure in this period. The largest falls in percentage terms were in Furniture and other manufacturing (55%), Petroleum and coal product manufacturing (46%) and Printing (43%).

20.4 MANUFACTURING INDUSTRY(a), Selected performance measures—2009–10

ANZSIC Subdivision	Wages and salaries(b)	Sales and service income(c)	Industry value added
	\$m	\$m	\$m
Food product manufacturing	9 183	74 128	16 832
Beverage and tobacco product manufacturing	1 942	17 770	6 609
Textile, leather, clothing and footwear manufacturing	1 595	9 162	2 839
Wood product manufacturing	2 224	12 692	4 211
Pulp, paper and converted paper product manufacturing	1 459	9 657	2 633
Printing (including the reproduction of recorded media)	2 246	9 183	4 034
Petroleum and coal product manufacturing	627	25 590	1 584
Basic chemical and chemical product manufacturing	3 625	30 482	8 393
Polymer product and rubber product manufacturing	2 764	16 078	5 390
Non-metallic mineral product manufacturing	2 689	17 197	5 411
Primary metal and metal product manufacturing	4 585	59 188	6 844
Fabricated metal product manufacturing	5 820	28 656	10 510
Transport equipment manufacturing	5 350	30 431	8 448
Machinery and equipment manufacturing	6 299	33 653	10 575
Furniture and other manufacturing	1 445	7 296	2 495
Total Manufacturing	51 853	381 165	96 809

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

Source: *Australian Industry, 2009–10* (8155.0)

20.5 MANUFACTURING INDUSTRY(a), Capital expenditure

ANZSIC Subdivision	2008–09 \$m	2009–10 \$m	Subdivision contribution to total manufacturing	
			Change from 2008–09 to 2009–10 %	2009–10 %
Food product manufacturing	2 403	2 914	21.3	17.4
Beverage and tobacco product manufacturing	2 968	1 898	-36.1	11.3
Textile, leather, clothing and footwear manufacturing	^ 288	^ 364	26.4	2.2
Wood product manufacturing	^ 499	^ 564	13.0	3.4
Pulp, paper and converted paper product manufacturing	515	537	4.3	3.2
Printing (including the reproduction of recorded media)	*1 193	^ 676	-43.3	4.0
Petroleum and coal product manufacturing	897	485	-45.9	2.9
Basic chemical and chemical product manufacturing	1 238	1 234	-0.3	7.4
Polymer product and rubber product manufacturing	413	^ 596	44.3	3.6
Non-metallic mineral product manufacturing	1 109	868	-21.7	5.2
Primary metal and metal product manufacturing	4 621	2 902	-37.2	17.3
Fabricated metal product manufacturing	^ 1 501	^ 952	-36.6	5.7
Transport equipment manufacturing	1 137	^ 1 084	-4.7	6.5
Machinery and equipment manufacturing	*1 698	*1 528	-10.0	9.1
Furniture and other manufacturing	^ 380	^ 170	-55.3	1.0
Total Manufacturing	20 862	16 772	-19.6	100.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1202.0).

Source: *Australian Industry, 2009–10* (8155.0).

In absolute terms, the Primary metal and metal product manufacturing industry expended \$1.7 billion less in 2009–10 than the previous year.

The largest increases in percentage terms were Polymer product and rubber product manufacturing (44%), Textile, leather, clothing and footwear manufacturing (26%) and Food product manufacturing (21%). In absolute terms, the Food product manufacturing industry saw the greatest increase between 2008–09 and 2009–10 (\$0.5b).

Industries contributing most to total Manufacturing industry capital expenditure in 2009–10 were Food product manufacturing and Primary metal and metal product manufacturing (both 17%), and Beverage and tobacco product manufacturing (11%).

Operating profit before tax (OPBT)

OPBT is a measure of profit before extraordinary items are brought to account and prior to the deduction of income tax and appropriations to owners (e.g. dividends paid). The OPBT for total manufacturing decreased by \$2.8 billion (or 10%) between 2008–09 and 2009–10 (table 20.6).

OPBT for nine of the fifteen industry components was lower in 2009–10 than 2008–09. The largest falls, in percentage terms, occurred in

Primary metal and metal product manufacturing (down 82%) and Transport and equipment manufacturing (down 42%). In absolute terms, the OPBT of Primary metal and metal product manufacturing fell most (\$3.1b).

The manufacturing industries with the biggest gains in OPBT in 2009–10 included Petroleum and coal product manufacturing, which turned a \$633 million loss in 2008–09 into a \$609 million gain in 2009–10, Textile, leather, clothing and footwear manufacturing (up 74%) and Beverage and tobacco product manufacturing (up 39%).

Industries contributing most to total Manufacturing industry OPBT in 2009–10 were Food product manufacturing (17%), Beverage and tobacco product manufacturing (16%) and Basic chemical and chemical product manufacturing (14%).

State and territory distribution of activity

Graph 20.7 shows the manufacturing production contribution of states and territories (as measured by total factor income) to total manufacturing in 2009–10. New South Wales and Victoria continued to be the largest contributors to manufacturing production, accounting for 32% (\$35b) and 28% (\$30b) respectively.

20.6 MANUFACTURING INDUSTRY(a), Operating profit before tax

ANZSIC Subdivision	2008–09	2009–10	Change from 2008–09 to 2009–10	Subdivision contribution to total manufacturing 2009–10
	\$m	\$m	%	%
Food product manufacturing	3 645	4 259	16.8	17.2
Beverage and tobacco product manufacturing	2 771	3 855	39.1	15.5
Textile, leather, clothing and footwear manufacturing	^ 413	^ 718	73.8	2.9
Wood product manufacturing	^ 1 067	*955	-10.5	3.8
Pulp, paper and converted paper product manufacturing	^ 412	^ 275	-33.3	1.1
Printing (including the reproduction of recorded media)	^ 958	^ 876	-8.6	3.5
Petroleum and coal product manufacturing	-633	609	196.2	2.5
Basic chemical and chemical product manufacturing	3 655	3 528	-3.5	14.2
Polymer product and rubber product manufacturing	^ 1 106	^ 1 467	32.6	5.9
Non-metallic mineral product manufacturing	1 536	1 275	-17.0	5.1
Primary metal and metal product manufacturing	3 747	**672	-82.1	2.7
Fabricated metal product manufacturing	^ 4 060	^ 2 706	-33.3	10.9
Transport equipment manufacturing	*1 188	*689	-42.0	2.8
Machinery and equipment manufacturing	^ 3 241	^ 2 324	-28.3	9.4
Furniture and other manufacturing	*506	^ 625	23.5	2.5
Total Manufacturing	27 673	24 832	-10.3	100.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

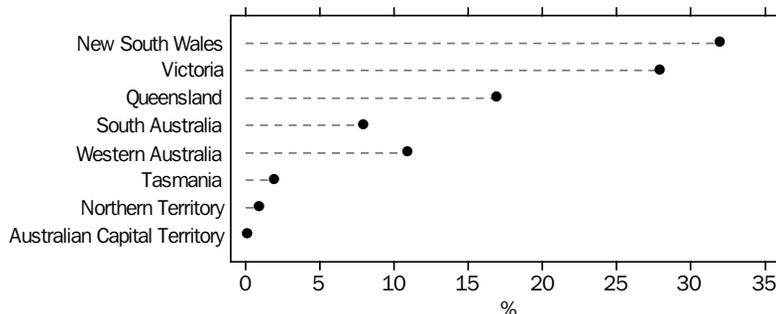
* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Australian Industry, 2009–10* (8155.0).

20.7 MANUFACTURING PRODUCTION(a), STATE AND TERRITORY CONTRIBUTION—2009–10



(a) Production as measured by total factor income (in current prices).

Source: *Australian National Accounts: State Accounts (5220.0)*.

Employment and earnings

The number of male and female workers in each Manufacturing industry component for 2009–10 and 2010–11 is provided in table 20.8.

In 2010–11, the Manufacturing industry employed 9% (991,800) of all people employed in Australia (11,354,500). Males outnumbered females by a ratio of nearly 3 to 1 (74% males and 26% females).

The largest employers of males in 2010–11 were Food product manufacturing (127,500) and Machinery and equipment manufacturing (90,500). The largest employers of females were Food product manufacturing (76,500) and Textile, leather, clothing and footwear manufacturing (29,300).

Table 20.9 presents information on average weekly earnings (ordinary time earnings plus overtime earnings) of employees in the

20.8 MANUFACTURING INDUSTRY(a), Employment(b)

ANZSIC Subdivision	2009–10			2010–11		
	Males '000	Females '000	Persons '000	Males '000	Females '000	Persons '000
Food product manufacturing	122.0	77.1	199.1	127.5	76.5	203.9
Beverage and tobacco product manufacturing	20.3	9.0	29.4	18.4	7.0	25.4
Textile, leather, clothing, and footwear manufacturing	18.4	28.1	46.5	15.3	29.3	44.6
Wood product manufacturing	40.5	5.5	46.0	32.8	4.6	37.4
Pulp, paper and converted paper product manufacturing	12.6	5.8	18.4	14.3	4.9	19.2
Printing (including the reproduction of recorded media)	37.4	14.5	51.9	41.6	14.1	55.7
Petroleum and coal product manufacturing	5.1	1.1	6.1	7.2	1.2	8.4
Basic chemical and chemical product manufacturing	26.7	21.0	47.7	28.2	15.6	43.9
Polymer product and rubber product manufacturing	24.5	9.4	34.0	24.3	8.3	32.5
Non-metallic mineral product manufacturing	30.6	6.2	36.8	32.9	4.1	37.0
Primary metal and metal product manufacturing	73.3	10.9	84.2	81.0	11.9	92.9
Fabricated metal product manufacturing	52.8	9.5	62.4	45.5	8.9	54.5
Transport equipment manufacturing	72.1	12.9	85.0	75.9	14.0	89.9
Machinery and equipment manufacturing	96.1	28.2	124.4	90.5	26.4	116.8
Furniture and other manufacturing	46.3	11.3	57.6	41.7	11.7	53.4
Manufacturing, n.f.d.(c)	57.6	18.6	76.3	57.6	18.7	76.3
Total Manufacturing	736.3	269.1	1 005.8	734.7	257.2	991.8

(a) Classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0)*.

(b) Annual average of quarterly data. Some individual quarterly estimates are subject to sampling variability too high for most practical purposes.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate them to a specific industry code.

Source: *Labour Force Australia, Detailed, Quarterly (6291.0.55.003)*.

Manufacturing industry compared with all industries. Between May 2001 and May 2011, the average weekly earnings of all employees in the Manufacturing industry increased by \$373 (49%). This was higher in dollar terms than the increase of \$353 (53%) for all industries, though slightly lower in percentage terms.

In the Manufacturing industry, the earnings of both male and female full-time employees increased by a similar proportion between May 2001 and May 2011 (56% and 55% respectively). However, the increase in dollar terms for male

employees was higher than for female employees (\$475 compared with \$369). Female earnings in the Manufacturing industry remain well below those of males – with a difference in average weekly full-time earnings of \$291 at May 2011.

Research and experimental development (R&D)

The Organisation for Economic Co-operation and Development (OECD) defines R&D as comprising "... creative work undertaken on a systematic basis in order to increase the stock of knowledge,

20.9 MANUFACTURING INDUSTRY, Average weekly earnings(a)(b)—May

	ALL EMPLOYEES			FULL-TIME EMPLOYEES		
	2001	2011	Change from 2001 to 2011	2001	2011	Change from 2001 to 2011
	\$	\$	%	\$	\$	%
Males						
Manufacturing	817.40	1 243.9	52.2	855.70	1 330.3	55.5
All industries	789.40	1 236.5	56.6	923.40	1 472.8	59.5
Females						
Manufacturing	579.40	823.80	42.2	670.50	1 039.1	55.0
All industries	524.70	729.80	39.1	750.60	1 167.1	55.5
Persons						
Manufacturing	756.70	1 129.8	49.3	815.10	1 269.4	55.7
All industries	662.60	1 015.2	53.2	861.00	1 357.9	57.7

(a) Derived by dividing estimates of weekly total earnings (including overtime) by estimates of number of employees. Changes in average weekly earnings may be affected not only by changes in the level of earnings of employees but also by changes in the overall composition of the wage and salary earner segment of the labour force.

(b) The actual reference period is the last pay period ending on or before the third Friday of the middle month of the quarter.

Source: *Average Weekly Earnings, Australia* (6302.0).

20.10 MANUFACTURING INDUSTRY(a), Business R&D expenditure(b)

ANZSIC Subdivision	2007–08	2008–09	2009–10
	\$m	\$m	\$m
Food product manufacturing	368.9	389.4	427.8
Beverage and tobacco product manufacturing	48.0	58.1	49.0
Textile, leather, clothing and footwear manufacturing	33.0	35.0	np
Wood product manufacturing	51.3	57.1	57.5
Pulp, paper and converted paper product manufacturing	71.1	53.8	np
Printing (including the reproduction of recorded media)	19.7	22.8	31.0
Petroleum and coal product manufacturing	106.7	100.7	77.5
Basic chemical and chemical product manufacturing	612.5	701.5	619.0
Polymer product and rubber product manufacturing	114.2	113.0	110.3
Non-metallic mineral product manufacturing	116.3	112.5	145.3
Primary metal and metal product manufacturing	617.3	649.9	438.2
Fabricated metal product manufacturing	176.7	168.5	188.4
Transport equipment manufacturing	1 021.9	876.2	867.3
Machinery and equipment manufacturing	992.9	1 010.1	975.3
Furniture and other manufacturing	23.3	28.5	30.6
Total Manufacturing	4 373.6	4 377.0	4 218.6

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capital and current expenditure.

Source: *Research and Experimental Development, Businesses, Australia* (8104.0).

20.11 MANUFACTURING INDUSTRY(a), Type of business expenditure on R&D—2009–10

ANZSIC Subdivision	Capital expenditure	Labour costs	Other current expenditure	Total
	\$m	\$m	\$m	\$m
Food product manufacturing	25.2	193.4	209.1	427.8
Beverage and tobacco product manufacturing	4.5	21.2	23.3	49.0
Textile, leather, clothing and footwear manufacturing	np	14.0	10.1	np
Wood product manufacturing	1.0	13.6	42.9	57.5
Pulp, paper and converted paper product manufacturing	np	36.7	np	np
Printing (including the reproduction of recorded media)	np	14.3	np	31.0
Petroleum and coal product manufacturing	6.7	21.6	49.1	77.5
Basic chemical and chemical product manufacturing	23.9	221.9	373.1	619.0
Polymer product and rubber product manufacturing	10.1	65.8	34.4	110.3
Non-metallic mineral product manufacturing	6.7	32.6	106.0	145.3
Primary metal and metal product manufacturing	27.6	64.3	346.3	438.2
Fabricated metal product manufacturing	12.6	74.8	101.0	188.4
Transport equipment manufacturing	29.8	459.7	377.8	867.3
Machinery and equipment manufacturing	58.2	499.2	417.9	975.3
Furniture and other manufacturing	3.9	17.3	9.4	30.6
Total Manufacturing	222.5	1 750.6	2 245.5	4 218.6

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Research and Experimental Development, Businesses, Australia (8104.0)*.

including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.” R&D includes basic research, applied research and experimental development. Information on R&D expenditure by type of activity for the Manufacturing industry can be found in chapter 26, *Research and innovation*.

Total business expenditure on R&D by the Manufacturing industry decreased by \$158 million (4%) between 2008–09 and 2009–10 (table 20.10). Industries contributing the most to manufacturing R&D expenditure in 2009–10 were Machinery and equipment manufacturing (23%), Transport equipment manufacturing (21%) and Basic chemical and chemical product manufacturing (15%).

The Manufacturing industry contributed 25% to total business expenditure on R&D in both 2008–09 and 2009–10.

Of total business expenditure on R&D in 2009–10, 5% was Capital expenditure, 41% Labour costs and 53% Other current expenditure (table 20.11). The Machinery and equipment manufacturing industry contributed the most in each cost category, with Transport equipment manufacturing next highest in each category.

As a proportion of total business expenditure on R&D, the Manufacturing industry accounted for 31% of Capital expenditure, 27% of Labour costs and 23% of Other current expenditure.

Price indexes

The ABS compiles two price indexes relating to the Manufacturing industry – the price index of materials used in manufacturing industries and the price index of articles produced by manufacturing industries. Information on recent trends in the prices of materials used and articles produced in individual manufacturing industries is provided in the section *Producer price indexes* in chapter 29, *Prices*.

International trade

The Manufacturing industry is a significant component of Australia’s value of goods exports by industry of origin, accounting for 34% of total exports in 2010–11 (table 20.12). The value of manufacturing exports was 12% higher in 2010–11 than in 2005–06. However, the Manufacturing industry share of total value of goods exports has been decreasing over this period, in particular, falling significantly between 2007–08 and 2008–09. For an explanation of factors (including movements in the exchange rate) affecting Australia’s international investment position, see chapter 31, *International accounts and trade*.

Graph 20.13 shows the five main destinations, by value, for manufacturing commodities exported from Australia during the period 2005–06 to 2010–11. Of these, the key destinations in 2010–11 were New Zealand (\$7.1b), Japan (\$6.3b) and the United States of America (\$5.3b).

For each of the years 2005–06 to 2010–11, at least 85% of Australia’s total value of goods imports was for manufactured goods (table 20.14). The value of Australia’s imports of manufactured goods has increased 20% over this period, from \$152 billion to \$182 billion.

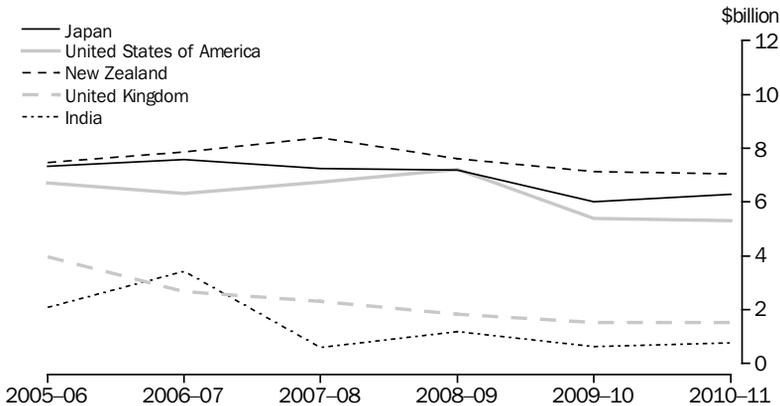
20.12 VALUE OF MERCHANDISE EXPORTS OF GOODS, By industry of origin(a)

	Manufacturing	All industries	Manufacturing share
	\$m	\$m	of total exports %
2005–06	74 898	152 492	49.1
2006–07	85 141	168 099	50.6
2007–08	88 260	180 857	48.8
2008–09	92 279	230 829	40.0
2009–10	79 799	200 720	39.8
2010–11	84 068	244 595	34.4

(a) On a free-on-board basis.

Source: ABS data available on request, *International Trade*.

20.13 MANUFACTURING EXPORTS, Main destinations



Source: ABS data available on request, *International Trade*.

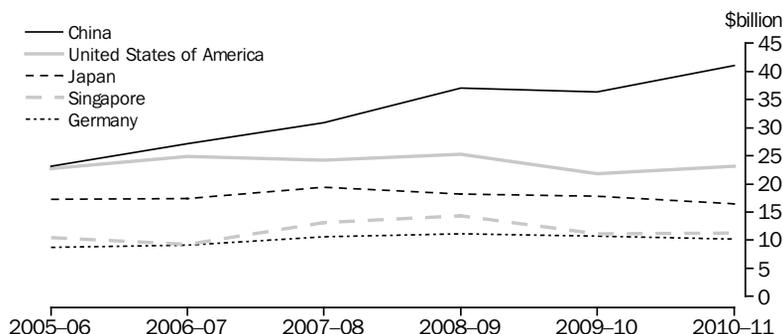
20.14 VALUE OF MERCHANDISE IMPORTS OF GOODS, By industry of origin(a)

	Manufacturing	All industries	Manufacturing share
	\$m	\$m	of total imports %
2005–06	151 617	167 048	90.8
2006–07	161 866	179 158	90.3
2007–08	179 679	201 184	89.3
2008–09	195 366	220 657	88.5
2009–10	179 299	203 775	88.0
2010–11	182 321	213 221	85.5

(a) Customs value.

Source: ABS data available on request, *International Trade*.

20.15 MANUFACTURING IMPORTS(a), Selected countries



(a) Customs value.

Source: ABS data available on request, *International Trade*.

Graph 20.15 shows the value of manufacturing commodities imported from five selected countries to Australia in the period 2005–06 to 2010–11. From 2005–06, China (excludes SARs and Taiwan) overtook the United States of America as the country providing the largest value of imports, with a 77% growth (from \$23b to \$41b) between 2005–06 and 2010–11. In contrast, the value of imports from the USA rose only 2% over this period.

More detailed information on trade in manufactured commodities can be found in the next section.

Manufactured commodities

Production of manufactured commodities

Table 20.16 shows the quantities of selected manufactured commodities produced for the period 2006–07 to 2009–10. Over this period, production of most of the selected commodities has declined, though many of the falls were quite small.

The largest falls in percentage terms occurred in the production of Raw steel (14%), Brandy spirit (13%) and Fuel oil (10%), while the largest increases were recorded in the production of Unfortified wine (17%) and Alumina (8%).

Exports of manufactured commodities

Table 20.17 provides details of 20 selected manufacturing commodities exported from Australia, for 2009–10 and 2010–11. These commodities contributed 96% of the value of all

goods exports originating in the Manufacturing industry and 33% of the total value of all goods exports in 2010–11 (table 20.12).

Petroleum, petroleum products and related materials, Gold, non-monetary and Non-ferrous metals were the only selected commodities to each contribute significantly to the total value of goods exports in 2010–11, contributing 6%, 6% and 5% respectively.

Between 2009–10 and 2010–11, the value of exports increased for 11 of the 20 selected commodities with the largest increase, in percentage terms, being for Textiles fibre and their wastes (44%), followed by Cereals and cereal preparations (40%), Petroleum, petroleum products and related materials (21%) and Non-ferrous metals (19%). In absolute terms, the largest increase was for Petroleum, petroleum products and related materials (\$2.4b).

Imports of manufactured commodities

Table 20.18 provides details of 20 selected manufactured commodities imported into Australia, for 2009–10 and 2010–11. These commodities contributed 88% of the value of all manufactured goods imports and 75% of the total value of all goods imports in 2010–11 (table 20.14).

In comparing the main commodities Australia exported with the main commodities imported, in terms of value, it is apparent that a large proportion of Australia's manufactured exports are 'simply transformed' manufactured commodities such as food, metals and petroleum products,

while the majority of manufactured imports are 'elaborately transformed' commodities such as road vehicles, machinery and equipment.

Of the selected commodities imported into Australia in 2010–11, the major commodity by value was Petroleum, petroleum products and related materials, which made up 14% of goods imports.

During the year 2010–11, the value of imports increased for 14 of the 20 selected commodities. The value of imports of Electrical machinery, apparatus, appliances and parts increased by 20% and Petroleum, petroleum products and related materials increased by 17%. Conversely, the largest decrease in the value of imports in percentage terms in 2010–11 was for Gold, non-monetary, with a fall of 30%.

20.16 MANUFACTURING PRODUCTION, Selected commodities

		2006–07	2007–08	2008–09	2009–10	Percentage change from 2006–07 to 2009–10
Selected food products and beverages						
Brandy spirit	'000 L	510	508	486	445	-12.7
Unfortified wine	ML	947	1 222	1 160	1 110	17.2
Beer	ML	1 706	1 677	1 711	1 695	-0.6
Milk	ML	9 583	9 212	9 389	9 019	-5.9
Red meat	'000 t	3 292	3 178	3 082	3 014	-8.4
Chicken meat	'000 t	812	797	832	834	2.7
Cheese	'000 t	364	361	342	349	-4.1
Butter(a)	'000 t	133	127	148	128	-3.8
Sugar(b)	'000 t	5 026	4 763	4 634	4 519	-10.1
Selected petroleum and metal products						
Automotive gasoline	ML	17 732	17 079	17 159	16 771	-5.4
Fuel oil	ML	942	979	872	846	-10.2
Automotive diesel oil	ML	11 055	12 177	12 231	11 720	6.0
Aviation turbine fuel	ML	5 332	5 182	5 494	5 341	0.2
Alumina	'000 t	18 506	19 359	19 597	20 057	8.4
Pig iron	'000 t	6 392	6 329	4 352	5 929	-7.2
Raw steel(c)	'000 t	8 010	8 151	5 568	6 886	-14.0
Selected paper and wood products						
Paper and paperboard(d)	'000 t	3 201	3 281	3 278	3 175	-0.8
Wood based panels(e)	'000 m ³	1 743	1 882	1 778	1 722	-1.2
Selected building materials						
Portland cement	'000 t	9 380	9 752	9 108	8 903	-5.1
Clay bricks	million	1 570	1 459	1 369	1 424	-9.3
Premixed concrete	'000 m ³	24 932	26 573	23 896	23 065	-7.5

(a) Includes the butter equivalent of butter oil, butter concentrate, ghee and dry butterfat production.

(b) Raw tonnes actual.

(c) Includes recovery from scrap.

(d) Includes newsprint, printing and writing, household and sanitary, and packaging and industrial.

(e) Includes veneer, plywood, particleboard and medium density fibreboard, except for 2006–07 when veneer was excluded.

Source: Australian Wine and Grape Industry (1329.0); Livestock Products, Australia (7215.0); Manufacturing Production, Australia (8301.0.55.001); Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Australian Commodity Statistics, 2010 and Australian Forest and Wood Product Statistics, September and December quarters, 2010.

20.17 EXPORTS OF SELECTED MANUFACTURED COMMODITIES

Commodity group(a)	2009–10		2010–11		Change from	Share of
	\$m	\$m	\$m	\$m	2009–10 to 2010–11	total exports 2010–11
					%	%
Non-ferrous metals	9 602.9	11 399.8	11 399.8	11 399.8	18.7	4.7
Petroleum, petroleum products and related materials	11 383.7	13 733.7	13 733.7	13 733.7	20.6	5.6
Gold, non-monetary (excluding gold ores and concentrates)	13 797.5	13 622.3	13 622.3	13 622.3	-1.3	5.6
Meat and meat preparations	6 350.0	6 938.6	6 938.6	6 938.6	9.3	2.8
Cereals and cereal preparations	5 266.6	7 358.4	7 358.4	7 358.4	39.7	3.0
Medicinal and pharmaceutical products	4 117.3	3 811.5	3 811.5	3 811.5	-7.4	1.6
Road vehicles (including air cushion vehicles)	2 834.3	2 687.9	2 687.9	2 687.9	-5.2	1.1
Textile fibres and their wastes (not manufactured into yarn or fabric)	2 816.1	4 055.0	4 055.0	4 055.0	44.0	1.7
Beverages	2 349.8	2 175.1	2 175.1	2 175.1	-7.4	0.9
Dairy products and birds' eggs	1 956.0	2 242.5	2 242.5	2 242.5	14.6	0.9
Electrical machinery, apparatus, appliances, parts (including non-electrical counterparts of electrical domestic equipment)	1 521.3	1 493.7	1 493.7	1 493.7	-1.8	0.6
Professional, scientific and controlling instruments and apparatus, n.e.s.	1 968.7	1 925.0	1 925.0	1 925.0	-2.2	0.8
General industrial machinery and equipment, n.e.s. and machine parts, n.e.s.	1 704.7	1 851.9	1 851.9	1 851.9	8.6	0.8
Machinery specialised for particular industries	1 823.8	1 930.6	1 930.6	1 930.6	5.9	0.8
Office machines and automatic data processing machines	1 058.7	1 180.2	1 180.2	1 180.2	11.5	0.5
Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	989.8	993.2	993.2	993.2	0.3	0.4
Transport equipment (excluding road vehicles)	1 235.0	1 217.1	1 217.1	1 217.1	-1.4	0.5
Non-metallic mineral manufactures, n.e.s.	751.0	658.5	658.5	658.5	-12.3	0.3
Telecommunications and sound recording and reproducing apparatus and equipment	931.4	942.5	942.5	942.5	1.2	0.4
Cork and wood manufactures (excluding furniture)	143.8	137.8	137.8	137.8	-4.2	0.1

(a) Based on the UN Standard International Trade Classification (SITC R4).

Source: ABS data available on request, *International Trade*.

20.18 IMPORTS OF SELECTED MANUFACTURED COMMODITIES(a)

Commodity group(b)	2009–10		2010–11		Change from	Share of
	\$m	\$m	\$m	\$m	2009–10 to 2010–11	total imports 2010–11
					%	%
Road vehicles (including air-cushion vehicles)	24 955.7	24 129.3	24 129.3	24 129.3	-3.3	11.3
Petroleum, petroleum products and related materials	26 314.8	30 755.5	30 755.5	30 755.5	16.9	14.4
General industrial machinery and equipment, n.e.s. and machine parts, n.e.s.	11 268.2	10 048.0	10 048.0	10 048.0	-10.8	4.7
Telecommunications and sound recording and reproducing apparatus and equipment	11 227.0	11 420.0	11 420.0	11 420.0	1.7	5.4
Office machines and automatic data processing machines	9 082.1	9 259.0	9 259.0	9 259.0	1.9	4.3
Electrical machinery, apparatus, appliances, parts (including non-elec. counterparts of electrical domestic equip)	9 688.0	11 604.7	11 604.7	11 604.7	19.8	5.4
Medicinal and pharmaceutical products	9 205.8	10 092.2	10 092.2	10 092.2	9.6	4.7
Machinery specialised for particular industries	6 932.3	7 026.6	7 026.6	7 026.6	1.4	3.3
Gold, non-monetary (excluding gold ores and concentrates)	7 740.7	5 442.0	5 442.0	5 442.0	-29.7	2.6
Manufactures of metals, n.e.s.	4 968.7	5 322.0	5 322.0	5 322.0	7.1	2.5
Articles of apparel and clothing accessories	4 882.5	5 531.8	5 531.8	5 531.8	13.3	2.6
Professional, scientific and controlling instruments and apparatus, n.e.s.	4 657.3	4 814.8	4 814.8	4 814.8	3.4	2.3
Transport equipment (excluding road vehicles)	2 101.1	2 228.0	2 228.0	2 228.0	6.0	1.0
Iron and steel	3 261.7	3 762.6	3 762.6	3 762.6	15.4	1.8
Power generating machinery and equipment	4 405.4	4 349.3	4 349.3	4 349.3	-1.3	2.0
Organic chemicals	3 309.9	3 278.2	3 278.2	3 278.2	-1.0	1.5
Paper, paperboard, and articles of paper pulp, of paper or of paperboard	2 701.7	2 735.2	2 735.2	2 735.2	1.2	1.3
Rubber manufactures, n.e.s.	2 806.5	3 128.5	3 128.5	3 128.5	11.5	1.5
Textile yarn, fabrics, made-up articles, n.e.s., and related products	2 367.0	2 450.2	2 450.2	2 450.2	3.5	1.1
Non-metallic mineral manufactures, n.e.s.	2 595.6	2 463.7	2 463.7	2 463.7	-5.1	1.2

(a) Customs value.

(b) Based on the UN Standard International Trade Classification (SITC R4).

Source: ABS data available on request, *International Trade*.

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CONSTRUCTION

The construction industry plays a significant role in the Australian economy and society, providing homes, work places, and infrastructure such as schools, recreation facilities, hospitals, roads, electricity supply and telecommunications. The demand for, and supply of, construction is influenced by a variety of factors including interest rates, tax changes and changes in population.

The construction industry, and its activities, are strongly linked to other parts of the Australian economy such as manufacturing, wholesale trade, retail trade, and finance and insurance. In addition, industries such as property operators, real estate, architecture and engineering are closely allied with the construction industry.

The construction industry engages in three broad areas of activity:

- residential building (e.g. houses, flats)
- non-residential building (e.g. offices, shops, hotels) and
- engineering construction (e.g. roads, bridges, water, sewerage, mines).

Both the private and public sectors undertake construction activity within Australia. The private sector operates in all three areas of activity, with a major role in residential and non-residential building activity. The public sector has a major role in initiating and undertaking engineering construction. In addition, it has a role in non-residential building activity, in particular, building hospitals and schools.

Information on social and economic aspects of housing can be found in chapter 10, *Housing*.

More information on the Construction industry can be found in chapters 8 *Labour*; 15 *Industry structure and performance*, 25 *Information and communication technology* and 26 *Research and innovation*.

Construction industry

The contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP), is measured by industry gross value added (GVA). Information on the relationship between industry GVA and GDP is provided in the *Industry structure and performance* chapter.

The total production of the Construction industry, as measured by industry GVA (in volume terms), is shown in graph 21.1. After a decline in 2000–01, construction production continued its growth, reaching \$102 billion in 2010–11. In 2010–11, the Construction industry's share of the total production of goods and services in the Australian economy was 7.7%.

Table 21.2 shows average annual employment for each component of the Construction industry.

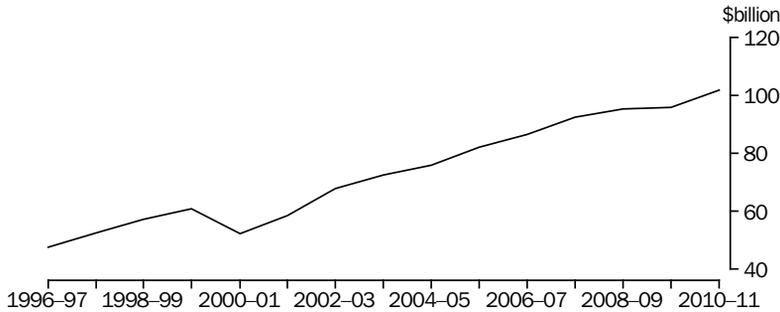
In 2010–11, the industry employed an average of 1,033,900 people, 3% higher than in 2009–10. Construction services was the largest employer, with an average of 695,100 people in 2010–11.

Table 21.3 shows selected economic indicators for the Construction industry. In 2009–10, wages and salaries were \$43 billion, an increase of 5% from 2008–09. This was mainly due to increases in wages and salaries for Heavy and civil engineering (12%) and Construction services (4%).

Between 2008–09 and 2009–10, total income for the Construction industry increased by 6%, to \$281 billion. Capital expenditure decreased overall by 3% between 2008–09 and 2009–10, with a fall of 17% in Construction services, partly offset by an increase for the Building construction industry of 11%.

The operating profit before tax of the Construction

21.1 CONSTRUCTION PRODUCTION(a)(b)



(a) Industry gross value added at basic prices.

(b) Volume measures. Reference year is 2009-10.

Source: Australian System of National Accounts (5204.0).

21.2 CONSTRUCTION INDUSTRY(a), Employment(b)

ANZSIC Subdivision	2009-10 '000	2010-11 '000
Building construction	233.0	230.5
Heavy and civil engineering construction	69.9	70.2
Construction services	657.9	695.1
Construction n.f.d.(c)	43.1	38.1
Total construction	1 003.9	1 033.9

(a) Classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition* (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

21.3 CONSTRUCTION INDUSTRY(a), Selected performance measures

BUSINESS PROFITABILITY

ANZSIC subdivision	Wages and salaries(b)	Total income	Operating			Industry value added	Profit margin	Businesses		
			Sales and service income(c)	profit before tax	Capital expenditure(d)			Businesses that made a profit	Businesses that broke even	Businesses that made a loss
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Building construction										
2008–09	8 865	103 601	102 458	3 826	7 685	18 007	3.7	67.3	1.2	31.5
2009–10	8 912	110 276	108 679	6 734	8 535	19 101	6.2	68.1	1.2	30.7
Heavy and civil engineering construction										
2008–09	8 858	45 258	43 921	3 346	3 391	14 627	7.6	69.8	0.1	30.0
2009–10	9 927	49 187	47 078	3 601	3 298	16 043	7.6	84.1	0.2	15.7
Construction services										
2008–09	23 126	116 094	113 775	16 107	7 088	46 265	14.2	78.2	1.6	20.2
2009–10	24 079	121 338	119 533	16 330	5 869	48 679	13.7	77.8	1.3	20.9
Total construction										
2008–09	40 849	264 953	260 154	23 280	18 164	78 899	8.9	75.9	1.5	22.6
2009–10	42 918	280 802	275 290	26 665	17 702	83 822	9.7	76.3	1.2	22.5

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry* (8155.0).

industry increased by 15% in 2009–10, to \$27 billion, while the profit margin of the industry increased to 9.7%. A profit was made by 76% of businesses in the Construction industry in both 2008–09 and 2009–10,

Construction activity

Construction work done

Construction activity includes the construction of buildings and engineering works, such as roads, bridges and railways, and is carried out by both the private and public sectors. In 2010–11, the value of construction work done (in volume terms) for the public sector (by both the private and public sectors) was \$48 billion (graph 21.4). After a decline in 2009–10, the value of construction work done for the private sector increased by 6% in 2010–11, to \$119 billion.

The composition of construction work done has changed significantly over time among the three broad areas of construction – residential building, non-residential building and engineering construction.

Engineering construction activity has grown steadily, surpassing the value of residential building activity in 2005–06 and reaching \$86 billion in 2010–11 (graph 21.5). In 2010–11, the value of residential building construction was \$47 billion and the value of non-residential building work done was \$35 billion.

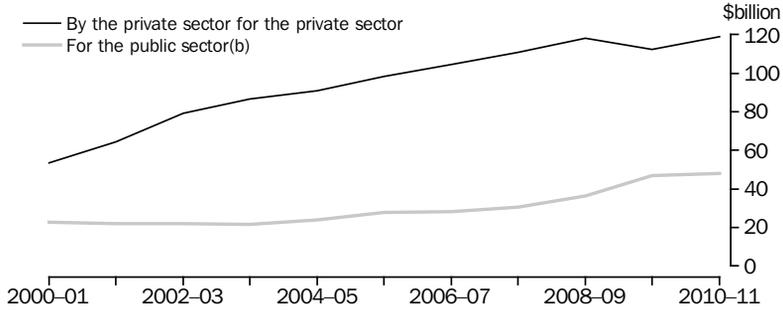
Residential building

Residential buildings are primarily used for long-term residential purposes, whereas non-residential buildings are used for other purposes. Residential buildings are categorised as separate houses or other residential buildings (such as semi-detached houses, townhouses, flats, units and apartments). Building work is categorised as either new work or an alteration or addition to an existing building (including conversions of buildings from non-residential to residential use).

Approvals

Building approvals are used as a key indicator of future building activity, as construction generally commences in the months after approval is given.

21.4 CONSTRUCTION WORK DONE, By sector(a)

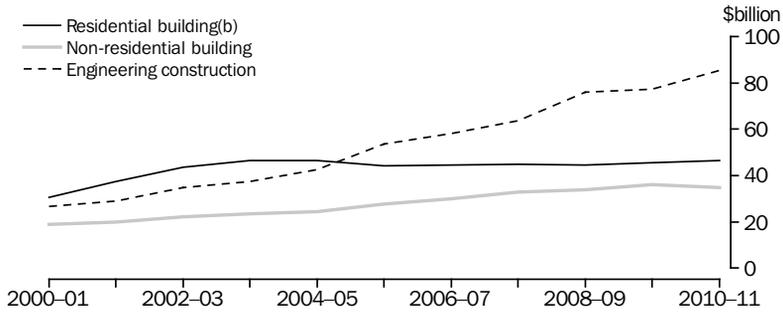


(a) Volume measures. Reference year is 2008-09.

(b) Public sector includes private sector work done for the public sector and public sector work.

Source: *Construction Work Done, Australia, Preliminary (8755.0)*.

21.5 VALUE OF WORK DONE, By type of activity(a)

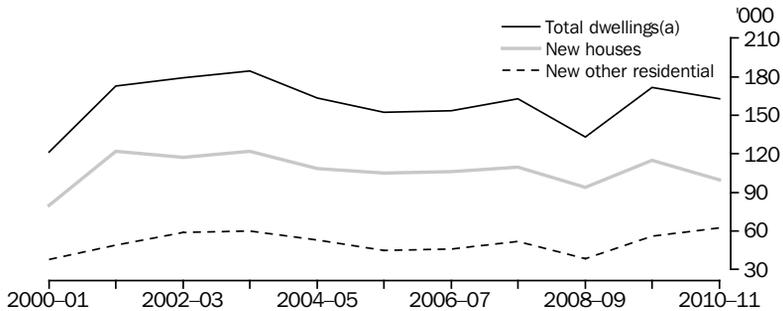


(a) Volume measures. Reference year is 2008-09.

(b) Residential building includes alterations and additions.

Source: *Construction Work Done, Australia, Preliminary (8755.0)*.

21.6 DWELLING UNITS APPROVED



(a) Includes dwellings created through alterations or additions and dwellings created in non-residential buildings.

Source: *Building Approvals, Australia (8731.0)*.

21.7 NEW OTHER RESIDENTIAL DWELLING UNITS APPROVED

	2009–10	2010–11
New semi-detached, row or terrace houses, townhouses, etc		
One storey	13 311	10 861
Two or more storeys	10 915	11 629
Total	24 226	22 490
New flats, units or apartments in a building		
One or two storeys	8 981	4 085
Three storeys	3 966	4 073
Four or more storeys	18 567	31 496
Total	31 514	39 654
Total	55 740	62 144

Source: *Building Approvals, Australia (8731.0)*.

Graph 21.6 shows the number of dwelling units approved as new houses, new other residential dwellings and total dwellings. Total dwelling unit approvals have fluctuated in recent years. In 2010–11, the total number of dwelling unit approvals was 163,052, which was a small decrease (5%) on the previous year.

New houses make up the largest component of dwelling unit approvals. In 2010–11, the number of new house approvals was 99,473, a decrease of 13% since 2009–10. In contrast to new houses, the number of new other residential dwellings rose 11% between 2009–10 and 2010–11, to 62,144.

In 2010–11, the number of dwelling units approved in new semi-detached, row or terrace houses and townhouses fell by 7% over the

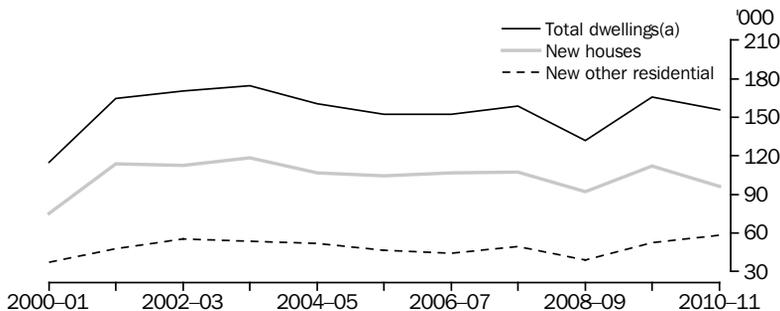
previous year (table 21.7). There was a decrease (18%) in new one storey dwelling units in this category, partly offset by an increase (7%) in those with two or more storeys.

The number of dwelling units approved in new flat, unit or apartment buildings increased by 26% in 2010–11, with a decrease of 55% in buildings with one or two storeys and a substantial increase of 70% in those with four or more storeys.

Commencements

Graph 21.8 shows the number of dwelling units commenced each year between 2000–01 and 2010–11. In 2010–11, work commenced on 155,951 dwellings, which included 96,497 new houses and 58,340 dwellings in new other residential buildings.

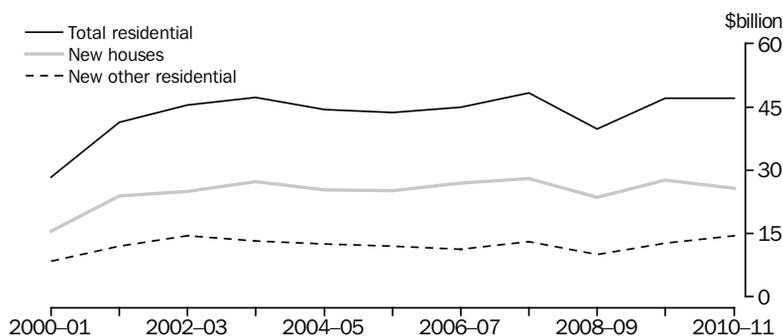
21.8 DWELLING UNIT COMMENCEMENTS



(a) Includes dwellings created through alterations or additions and dwellings created in non-residential buildings.

Source: *Building Activity, Australia (8752.0)*.

21.9 VALUE OF RESIDENTIAL WORK COMMENCED(a)



(a) Volume measures. Reference year is 2008-09.

Source: *Building Activity, Australia (8752.0)*

21.10 VALUE OF RESIDENTIAL BUILDING WORK DONE(a)

	New houses \$m	New other residential \$m	Total new residential \$m	Alterations and additions \$m	Total residential \$m
2009-10	27 823	11 374	39 197	6 878	46 075
2010-11	27 372	13 576	40 948	7 393	48 341

(a) Current prices.

Source: *Building Activity, Australia (8752.0)*.

Graph 21.9 shows the estimated completion value (in volume terms) of residential work commenced each year from 2000-01 to 2010-11. In 2010-11, the value of new houses commenced was \$26 billion and the value of new other residential building work commenced was \$14 billion. The total value of residential work commenced in 2010-11, which includes alterations and additions to existing residential buildings, was \$47 billion.

Building work done

Between 2009-10 and 2010-11, the value (in current prices) of total residential building work done increased by 5%, to \$48 billion (table 21.10). There was a decrease of 2% in the value of work done for new houses, while the value of work done on new other residential buildings increased by 19% and work done on alterations and additions to existing residential buildings increased by 7%.

Non-residential building

The value (in current prices) of non-residential building work approved decreased by 30%,

from \$40 billion in 2009-10 to \$28 billion in 2010-11 (table 21.11). Educational and health facilities contributed most to this decrease, with reductions of \$12 billion and \$3 billion respectively. Small increases in the value of approvals occurred for most other building types.

The value of non-residential building work done was steady overall at \$35 billion in both 2009-10 and 2010-11, with several small falls and rises. The largest decrease was for Other non-residential buildings n.e.c, which decreased by \$427 million. The largest increase was for Health facilities (\$529 million).

Engineering construction

Graph 21.12 shows the total value of engineering construction work done (in volume terms) each year from 2000-01 to 2010-11, for the private sector and for the public sector. The value of engineering construction work done for the private sector has exceeded that done for the public sector since 2002-03 and, in 2010-11, reached \$56 billion, or 65% of the total value of engineering construction work done. In 2010-11, the value of engineering construction work done

21.11 VALUE OF NON-RESIDENTIAL BUILDING WORK(a)(b)

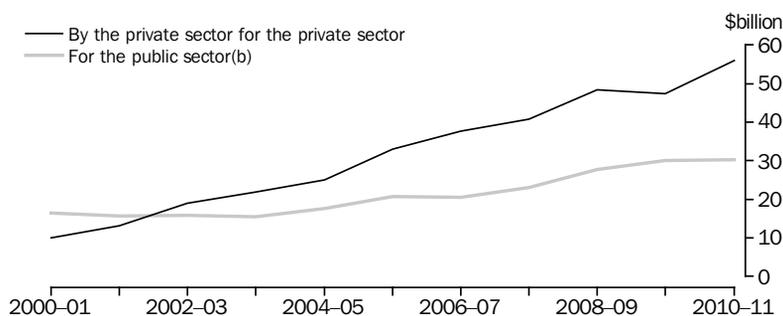
	APPROVED		WORK DONE	
	2009-10	2010-11	2009-10	2010-11
	\$m	\$m	\$m	\$m
Commercial				
Retail and wholesale trade	3 956	4 764	4 455	4 822
Transport	476	586	782	615
Offices	4 309	4 827	5 532	5 119
Other commercial buildings n.e.c.	231	209	246	241
<i>Total</i>	8 971	10 386	11 015	10 798
Industrial				
Factories	851	1 248	984	948
Warehouses	1 911	2 101	1 797	2 075
Agricultural and aquacultural	148	149	211	311
Other industrial buildings n.e.c.	167	224	282	228
<i>Total</i>	3 078	3 722	3 274	3 562
Other non-residential				
Educational	16 664	5 089	10 851	10 648
Religious	187	186	154	215
Aged care facilities	627	687	928	703
Health	5 994	2 949	2 844	3 373
Entertainment and recreation	1 399	1 932	1 966	2 012
Accommodation	720	1 107	989	789
Other non-residential buildings n.e.c.	2 270	1 835	2 881	2 454
<i>Total</i>	27 860	13 785	20 613	20 195
Total non-residential building	39 909	27 894	34 902	34 554

(a) Valued at \$50,000 or more.

(b) In current prices.

Source: *Building Activity, Australia (8752.0)*; *Building Approvals, Australia (8731.0)*.

21.12 ENGINEERING CONSTRUCTION WORK DONE, By sector(a)



(a) Volume measures. Reference year is 2008-09.

(b) Public sector includes private sector work done for the public sector and public sector work.

Source: *Engineering Construction Activity, Australia (8762.0)*.

for the public sector was \$30 billion, of which 51% was done by the private sector for the public sector and 49% was done by the public sector directly.

Table 21.13 shows the contribution of the public and private sectors to the value of work done (in current prices) for different categories of engineering construction. In 2010-11, the

most significant categories in terms of the value of engineering construction work done were for facilities (excluding buildings) for Oil, gas, coal and other minerals; Roads, highways and subdivisions; and Electricity generation, transmission and distribution.

The value of engineering construction work done in 2010-11 for mining facilities for Oil, gas, coal

21.13 VALUE OF ENGINEERING CONSTRUCTION WORK DONE(a)(b)

	2009–10			2010–11		
	For the private sector	For the public sector	Total	For the private sector	For the public sector	Total
	\$m	\$m	\$m	\$m	\$m	\$m
Roads, highways and subdivisions	4 867	9 493	14 360	5 185	11 060	16 245
Bridges	46	1 215	1 261	110	1 157	1 268
Railways	1 336	3 327	4 663	1 968	4 022	5 990
Harbours	1 412	713	2 125	2 612	722	3 334
Water storage and supply	1 735	4 129	5 864	2 946	2 933	5 879
Sewerage and drainage	517	2 329	2 845	652	2 806	3 458
Electricity generation, transmission and distribution	4 260	6 764	11 024	4 213	6 447	10 660
Pipelines	994	15	1 009	1 734	33	1 767
Recreation	1 517	1 088	2 606	1 592	1 279	2 871
Telecommunications	3 656	181	3 837	3 630	271	3 901
Oil, gas, coal and other minerals	24 210	166	24 377	28 847	57	28 904
Other heavy industry	494	9	503	859	8	866
Other	1 279	240	1 519	784	111	895
Total	46 324	29 668	75 993	55 133	30 906	86 039

(a) In current prices.

(b) Public sector includes work done by the private sector for the public sector and public sector work.

Source: *Engineering Construction Activity, Australia (8762.0)*.

and other minerals was \$29 billion, almost all of which was for the private sector. The value of work done on Roads, highways and subdivisions was \$16 billion, of which 68% was for the public sector. For Electricity generation, transmission and distribution, the value of work done was \$11 billion, of which 60% was for the public sector.

The largest changes in the value of engineering construction work done between 2009–10 and 2010–11 were for mining facilities (Oil, gas, coal and other minerals), with an increase of nearly \$5 billion (19%) and Roads, highways and subdivisions, with an increase of nearly \$2 billion (13%).

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SERVICE INDUSTRIES

This chapter presents an overview and a range of statistical information for selected service industries.

Services-producing industries can be defined as industries other than goods-producing industries (Agriculture, forestry and fishing; Mining; Manufacturing; and Construction). The industry, Electricity, gas, water and waste services, can be viewed as both a goods-producing and services-producing industry, as it includes producers, wholesalers, retailers and distributors. Data on the industry are included in *Selected service industries* in this chapter.

The service industries covered in detail in this chapter are: Electricity, gas, water and waste services; Wholesale trade; Retail trade; Information media and telecommunications; Rental, hiring and real estate services; Professional, scientific and technical services; Administrative and support services; Public administration and safety; Education and training; Health care and social assistance; Arts and recreation services; and Other services.

The service industries Transport, postal and warehousing; Accommodation and food services; and Financial and insurance services are not included in detail in this chapter. Data on activities associated with these industries can be found in *Services industries overview* and in chapters 23 *Tourism*, 24 *Transport* and 27 *Financial system*.

The previous edition of *Year Book Australia* included detailed information on the following service industries: Museums; Legal services; Cafes, restaurants and catering services; Digital game development services; Performing arts; Accommodation services; and Television, film and video production and post-production services. The data for these industries were in respect of 2006–07 or 2007–08.

Information on trade in services can be found in chapter 31 *International accounts and trade*.

Other related information can be found in chapters 2 *Environment*, 8 *Labour*, 11 *Health*, 12 *Education and training*, 14 *Culture and recreation*, 15 *Industry structure and performance*, 19 *Energy*, 25 *Information and communication technology* and 26 *Research and innovation*.

Service industries overview

The contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP), is measured by industry gross value added (GVA). Information on the relationship between industry GVA and GDP is provided in the *Industry structure and performance* chapter.

In 2010–11, the largest services-producing industry, in terms of industry GVA was the Financial and insurance services industry, which accounted for 10% of total GDP.

The Professional, scientific and technical services industry recorded the largest percentage increase in GVA over the period 2006–07 to 2010–11 (25%), or an average annual growth rate of 6% per year (in volume terms). The next largest average annual growth rate over the period was recorded by the Health care and social assistance industry (5%) and Arts and recreation services (3%). At the other end of the scale, the Accommodation and food services industry suffered a period of negative growth in GVA between 2006–07 and 2010–11, with an average annual decrease of 1% (table 22.1).

Average annual total employment in the service industries in 2010–11 was 8,620,700 people (table 22.2), which represented 76% of all employment.

The largest employing service industry was Health care and social assistance, with average annual employment in 2010–11 of 1,291,800 people, accounting for 15% of total employment in the services sector. Other large employing industries were Retail trade (1,234,400 people), Education and training (866,900 people), and Professional, scientific and technical services (861,000 people).

Between 2009–10 and 2010–11, employment in the Rental, hiring and real estate services increased by 20,600 people or 11%, followed by Administrative and support services with 7% growth. The only decrease in total employed persons occurred in Wholesale trade with a fall of 11,500 people or nearly 3%.

Selected service industries

The remainder of the chapter presents statistics obtained from a range of ABS regular industry-wide surveys as well as the monthly Retail Business Survey.

22.1 SERVICE INDUSTRIES(a), Gross value added(b)

ANSZIC Division	2006–07 \$m	2010–11 \$m	Average annual growth
			from 2006–07 to 2010–11 %
Wholesale trade	51 168	54 794	1.8
Retail trade	54 551	59 092	2.1
Accommodation and food services	31 381	29 941	-1.1
Transport, postal and warehousing	61 288	67 720	2.6
Information media and telecommunications	38 472	42 367	2.5
Financial and insurance services	115 172	127 984	2.8
Rental, hiring and real estate services(c)	26 489	26 736	0.2
Professional, scientific and technical services	69 488	86 604	6.2
Administrative and support services	31 059	32 254	1.0
Public administration and safety	60 302	65 266	2.1
Education and training	52 890	58 821	2.8
Health care and social assistance	62 097	74 307	4.9
Arts and recreation services	9 906	11 172	3.2
Other services	22 955	22 671	-0.3
Total	687 218	759 729	2.6

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0). Excludes the Electricity, gas, water and waste services industry, which is both a goods-producing and services-producing industry. See next section for more information.

(b) Volume measures. Reference year is 2009–10.

(c) Excludes ownership of dwellings.

Source: Australian System of National Accounts (5204.0).

22.2 SERVICE INDUSTRIES(a), Employment(b)

ANZSIC Division	2009–10	2010–11	Change 2009–10 to
	'000	'000	2010–11
Wholesale trade	424.0	412.5	-2.7
Retail trade	1 195.9	1 234.4	3.2
Accommodation and food services	754.6	776.0	2.8
Transport, postal and warehousing	578.7	583.4	0.8
Information media and telecommunications	214.9	215.6	0.3
Financial and insurance services	402.3	406.1	0.9
Rental, hiring and real estate services	185.6	206.2	11.1
Professional, scientific and technical services	834.0	861.0	3.2
Administrative and support services	374.0	400.7	7.1
Public administration and safety	679.4	705.4	3.8
Education and training	830.8	866.9	4.3
Health care and social assistance	1 216.7	1 291.8	6.2
Arts and recreation services	197.8	201.9	2.1
Other services	454.0	458.8	1.1
Total	8 342.7	8 620.7	3.3

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Excludes the Electricity, gas, water and waste services industry, which is both a goods-producing and services-producing industry.

(b) Annual average of quarterly data.

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

Note that there are methodological and scope differences between the collections and compilations used as data sources for this chapter. In particular:

- wages and salaries data are collected from businesses and, for several reasons, are not directly comparable with data on employment, which are collected from individuals
- gross value added (GVA) data by industry are sourced from a national accounts compilation and are subject to a number of adjustments; data are therefore not directly comparable with industry value added data, which are directly collected from businesses.

Industries in this chapter are defined according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC)*, 2006 edition (1292.0). The service industries, Transport, postal and warehousing; Accommodation and food services; and Financial and insurance services are not included in this section. See chapters 23 *Tourism*, 24 *Transport* and 27 *Financial system* respectively.

The first industry shown in this section is Electricity, gas, water and waste services. It covers producers, wholesalers, retailers and distributors so is both a goods-producing and a services-producing industry. It is included in this chapter for practical reasons, although it is excluded from the previous section.

Electricity, gas, water and waste services

Table 22.3 shows the GVA (in volume terms) for each industry component within the Electricity, gas, water and waste services industry. Between 2009–10 and 2010–11, Electricity, gas, water and waste services GVA rose by 1%.

All industry components had increases in GVA (in volume terms) between 2009–10 and 2010–11. The Gas supply industry had the greatest increase (3%), followed by Water supply and waste services which rose by 2%. Electricity supply rose by less than 1%.

More information on the Waste collection, treatment and disposal services industry can be found in chapter 2 *Environment*.

Table 22.4 shows employment for the Electricity, gas, water and waste services industry. Between 2009–10 and 2010–11, total employment increased from 132,200 to 151,300 people, an increase of 14%. Water supply, sewerage and drainage services had the largest increase, rising by 9,300 people (nearly 30%). Electricity supply had the next highest employment increase, rising by 7,300 people, an increase of nearly 12%. Employment in the Gas supply industry fell by 200 people, or 2%.

In 2009–10, the Electricity, gas, water and waste

22.3 ELECTRICITY, GAS, WATER AND WASTE SERVICES(a), Gross value added(b)

ANZSIC Subdivision	2008-09	2009-10	2010-11
	\$m	\$m	\$m
Electricity supply	17 590	17 838	17 921
Gas supply	970	999	1 032
Water supply and waste services(c)	9 332	9 786	9 969
Total Electricity, gas, water and waste services	27 894	28 623	28 922

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009-10.

(c) Consists of two ANZSIC subdivisions: Water supply, sewerage and drainage services and Waste collection, treatment and disposal services.

Source: Australian System of National Accounts, 2010-11 (5204.0).

22.4 ELECTRICITY, GAS, WATER AND WASTE SERVICES(a), Employment(b)

ANZSIC Subdivision	2008-09	2009-10	2010-11
	'000	'000	'000
Electricity supply	56.5	61.4	68.7
Gas supply	11.1	9.4	9.2
Water supply, sewerage and drainage services	39.3	31.6	40.9
Waste collection, treatment and disposal services	26.1	27.9	30.3
Electricity, gas, water and waste services, n.f.d.(c)	3.3	1.9	2.1
Total Electricity, gas, water and waste services	136.3	132.2	151.3

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

22.5 ELECTRICITY, GAS, WATER AND WASTE SERVICES(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b)	Total income	Sales and service income(c)	Operating profit before tax	Capital expenditure(d)	Industry value added	BUSINESS PROFITABILITY			
							Profit margin	Made a profit	Broke even	Made a loss
							%	%	%	%
Electricity supply										
2008-09	4 844	54 524	51 535	5 595	11 387	18 468	10.9	55.3	1.5	43.2
2009-10	5 391	60 392	56 363	6 886	11 839	20 501	12.2	55.0	1.2	43.8
Gas supply										
2008-09	167	9 428	7 683	1 616	1 089	925	21.0	79.5	0.8	19.7
2009-10	176	7 644	7 447	186	472	990	2.5	76.7	0.4	22.9
Water supply, sewerage and drainage services										
2008-09	2 019	14 032	11 774	2 120	10 401	6 539	18.0	67.6	1.6	30.8
2009-10	1 924	15 490	13 015	2 261	11 578	7 327	17.4	65.5	0.3	34.2
Waste collection, treatment and disposal services										
2008-09	1 530	8 333	8 166	^957	^863	3 303	11.7	81.4	4.6	14.0
2009-10	1 588	8 741	8 644	752	667	3 270	8.7	77.4	0.3	22.4
Total Electricity, gas, water and waste services										
2008-09	8 561	86 316	79 158	10 287	23 741	29 235	13.0	76.3	3.5	20.2
2009-10	9 079	92 267	85 470	10 085	24 556	32 088	11.8	73.1	0.3	26.5

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: Australian Industry, 2009-10 (8155.0).

services industry generated \$85.5 billion in sales and service income (table 22.5). Total income was \$92.3 billion, up just under 7% on the previous financial year.

Capital expenditure in 2009–10 was \$24,556 million. Industry value added was \$32,088 million, operating profit before tax \$10,085 million, while the profit margin for the industry was nearly 12%. Over 70% of businesses in the industry made a profit in 2008–09 and 2009–10 (76% and 73% respectively).

Wages and salaries for the Electricity, gas, water and waste services industry in 2009–10 were \$9,079 million. The Electricity supply industry

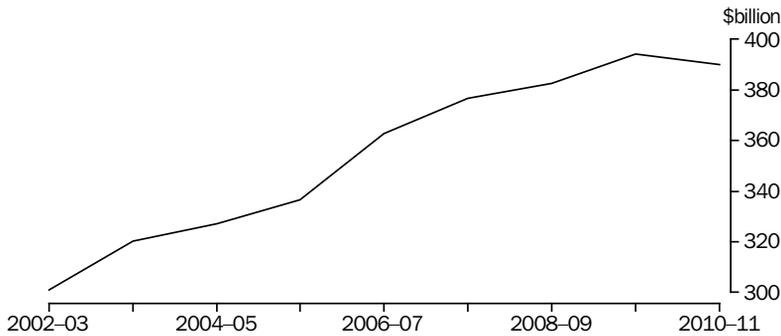
was by far the largest component with 59% of the industry's wages and salaries, 68% of operating profit before tax and 65% of total income.

Wholesale and retail trade

The Wholesale trade industry covers those businesses involved in the sale of new or used goods to businesses or to institutional (including government) users. Graph 22.6 shows annual volume measures of total wholesale trade sales.

The Retail trade industry comprises businesses primarily engaged in the sale of new or used goods to final consumers for personal or household consumption.

22.6 WHOLESALE SALES(a)



(a) Volume measures. Reference year is 2006–07.
Source: *Business Indicators, Australia* (5676.0).

22.7 RETAIL TURNOVER(a), Volume measures(b)

INDUSTRY(c)	Volume measures (\$m)						Total \$m
	Food retailing	Department stores	Clothing, footwear and personal accessory retailing	Household goods retailing	Other retailing(d)	Cafes, restaurants and takeaway food services(e)	
	\$m	\$m	\$m	\$m	\$m	\$m	
2006–07	87 795.7	18 020.1	17 631.7	39 498.9	28 459.0	28 704.3	219 900.1
2007–08	90 948.8	18 679.1	18 391.8	42 402.8	30 855.7	28 740.5	230 033.4
2008–09	93 201.8	18 833.1	19 107.0	42 123.0	32 365.8	28 095.8	233 768.9
2009–10	95 326.8	18 707.4	19 305.2	42 563.4	32 812.3	30 418.8	239 134.0
2010–11	94 780.3	18 650.7	18 930.5	43 557.4	33 681.7	31 183.0	240 783.1

(a) Based on original quarterly data.

(b) Reference year is 2009–10.

(c) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0). Excludes Motor vehicle and motor vehicle parts retailing, and Fuel retailing (non-petrol sales from convenience stores are included in Food retailing).

(d) Includes Recreational goods retailing (except for Marine equipment); Pharmaceutical and other store-based retailing; and Non-store retailing and retail commission-based buying and/or selling.

(e) Included in the Accommodation and food services industry.

Source: *Retail Trade, Australia* (8501.0).

The estimate of retail turnover includes the value of turnover from most types of retailing businesses as well as Cafes, restaurants and takeaway food services. In order to measure the actual expenditure of consumers, retail turnover is recorded from 1 July 2000 inclusive of the Goods and Services Tax (GST).

Table 22.7 presents retail turnover for the period 2006–07 to 2010–11. Total retail turnover (in volume terms) increased by 9% between 2006–07 and 2010–11.

Between 2009–10 and 2010–11, the turnover (in volume terms) of Other retailing increased by 3%, as did Cafes, restaurants and takeaway food services. The turnover of Clothing, footwear and personal accessory retailing decreased by 2% between 2009–10 and 2010–11.

Table 22.8 shows the GVA (in volume terms) for the industry divisions of Wholesale trade and Retail trade. Between 2009–10 and 2010–11, Wholesale trade GVA declined by less than 1% and Retail trade GVA rose by just over 1%.

Table 22.9 shows employment for the Wholesale and Retail trade industries. Between 2009–10 and 2010–11, Wholesale trade total employment decreased from 424,000 to 412,500 people (3%), while Retail trade employment increased from 1,195,900 to 1,234,400 (3%). Across these two divisions, Food retailing had the largest absolute increase between 2009–10 and 2010–11, rising by 27,800 people, while Non-store retailing and retail commission-based buying and/or selling increased by the largest proportion (12%) albeit off a much smaller base. Motor vehicle and motor vehicle parts wholesaling had the largest

22.8 WHOLESALE AND RETAIL TRADE INDUSTRY(a), Gross value added(b)

ANZSIC Division	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Wholesale trade	53 379	55 128	54 794
Retail trade	57 179	58 258	59 092

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: Australian System of National Accounts, 2010–11 (5204.0).

22.9 WHOLESALE AND RETAIL TRADE(a), Employment(b)

ANZSIC Subdivision	2008–09	2009–10	2010–11
	'000	'000	'000
Basic material wholesaling	96.9	99.3	103.9
Machinery and equipment wholesaling	92.2	103.3	96.8
Motor vehicle and motor vehicle parts wholesaling	27.5	28.6	19.7
Grocery, liquor and tobacco product wholesaling	63.7	67.7	66.5
Other goods wholesaling	86.2	86.2	86.7
Commission-based wholesaling	7.7	9.5	9.6
Wholesale trade, n.f.d.(c)	30.6	29.5	29.4
Total Wholesale trade	404.9	424.0	412.5
Motor vehicle and motor vehicle parts retailing	94.3	93.0	91.8
Fuel retailing	39.9	32.2	35.8
Food retailing	407.8	370.7	398.5
Other store-based retailing	634.4	649.1	657.6
Non-store retailing and retail commission-based buying and/or selling	10.7	11.4	12.8
Retail trade, n.f.d.(c)	38.6	39.6	37.9
Total Retail trade	1 225.7	1 195.9	1 234.4

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

22.10 WHOLESALE AND RETAIL TRADE(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b) \$m	Total income \$m	Sales and service income(c) \$m	Operating profit before tax \$m	Capital expenditure \$m	Industry value added \$m	BUSINESS PROFITABILITY			
							Profit margin %	Made a profit %	Broke even %	Made a loss %
WHOLESALE TRADE										
Basic material wholesaling										
2008-09	5 912	139 369	137 864	^ 4 137	1 322	11 958	3.0	69.7	3.0	27.3
2009-10	6 215	129 107	127 313	^ 4 465	^ 1 395	12 274	3.5	70.9	2.8	26.3
Machinery and equipment wholesaling										
2008-09	10 851	93 102	92 104	* 3 889	^ 2 925	18 297	4.2	69.6	3.5	26.9
2009-10	10 853	101 268	100 434	* 3 116	^ 2 012	17 196	3.1	71.8	3.8	24.4
Motor vehicle and motor vehicle parts wholesaling										
2008-09	2 300	46 334	45 575	^ 2 731	^ 588	5 788	6.0	72.4	0.1	27.5
2009-10	2 417	48 253	47 679	^ 2 556	^ 536	5 519	5.4	72.2	0.1	27.7
Grocery, liquor and tobacco product wholesaling										
2008-09	3 568	58 460	58 073	^ 1 840	894	6 619	3.2	66.0	0.2	33.8
2009-10	3 546	57 325	57 242	^ 1 903	^ 1 082	6 932	3.3	66.8	4.9	28.3
Other goods wholesaling										
2008-09	6 264	67 247	66 373	^ 3 602	^ 1 331	11 899	5.4	74.6	1.2	24.3
2009-10	6 343	68 817	68 071	^ 3 486	668	11 832	5.1	72.5	0.1	27.3
Commission-based wholesaling										
2008-09	733	6 594	6 545	^ 548	* 170	1 509	8.4	67.5	0.3	32.2
2009-10	806	6 037	5 955	^ 467	^ 121	1 492	7.8	67.0	0.4	32.6
Total Wholesale trade										
2008-09	29 628	411 107	406 534	16 747	7 231	56 071	4.1	70.6	1.8	27.6
2009-10	30 181	410 808	406 694	15 993	5 814	55 246	3.9	70.8	2.2	27.0
RETAIL TRADE										
Motor vehicle and motor vehicle parts retailing										
2008-09	4 253	69 102	68 630	^ 2 437	* 622	8 154	3.6	71.9	0.1	28.0
2009-10	4362	71 493	71 123	* 3 406	* 581	9 066	4.8	69.6	0.1	30.3
Fuel retailing										
2008-09	1 200	38 390	38 220	^ 1 075	297	2 746	2.8	86.7	—	13.3
2009-10	1 232	36 724	36 623	^ 892	^ 291	2 688	2.4	71.6	—	28.4
Food retailing										
2008-09	9 500	98 176	97 187	5 375	2 605	17 068	5.5	83.7	0.1	16.2
2009-10	10 093	100 603	99 856	5 807	2 246	18 562	5.8	73.0	0.1	26.9
Other store-based retailing										
2008-09	18 666	137 149	135 477	^ 8 476	^ 3 375	31 581	6.3	70.2	2.4	27.3
2009-10	18 804	145 551	143 874	^ 8 515	^ 3 759	32 337	5.9	70.1	1.6	28.3
Non-store retailing and retail commission-based buying and/or selling										
2008-09	447	3 114	^ 3 101	** 140	** 143	* 8 776	4.5	71.0	0.2	28.8
2009-10	543	3 842	3 796	* 249	* 181	^ 988	6.6	65.4	3.4	31.2
Total Retail trade										
2008-09	34 067	345 930	342 615	17 503	7 042	60 325	5.1	73.6	1.6	24.9
2009-10	35 035	358 214	355 272	18 868	7 059	63 641	5.3	70.3	1.3	28.4

— nil or rounded to zero (including null cells)

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: Australian Industry 2009-10 (8155.0).

percentage and absolute decline in employment, falling by 8,900 (31%).

In 2009–10, the Wholesale and Retail trade industries generated \$406.7 billion and \$355.3 billion respectively in sales and service income (table 22.10). Total income was \$410.8 billion for the Wholesale trade industry, down less than 1% on the previous financial year, and \$358.2 billion for Retail trade (up 4%).

For the Wholesale trade industry, capital expenditure in 2009–10 was \$5,814 million and \$7,059 million for the Retail trade industry. Industry value added for Wholesale trade was \$55,246 million, down 1% on 2008–09, and \$63,641 million for Retail trade, an increase of 5%. Operating profit before tax was \$15,993 million for Wholesale trade (down 5% from 2008–09) and \$18,868 million for Retail trade (up 8%). Over 70% of businesses in both industries made a profit in 2009–10 (71% and 70%), while less than 30% made a loss (27% and 28%).

Wages and salaries, in 2009–10, were \$30,181 million for Wholesale trade and \$35,035 million for Retail trade. Across the two industries, the biggest increase between 2008–09 and 2009–10 was in Non-store retailing and retail commission-based buying and/or selling, which saw wages

and salaries increase by 21% and total income by 23%. However, this sector also had the lowest proportion of businesses making a profit (65%).

Information media and telecommunications

Table 22.11 shows GVA (in volume terms) for the Information media and telecommunications industry. Between 2009–10 and 2010–11, GVA for Information media and telecommunications increased by 1%.

Table 22.12 shows employment for the Information media and telecommunications industry. Between 2009–10 and 2010–11, total employment increased from 214,900 to 215,600 people, an increase of less than 1%. Employment grew by 3,000 (3%) in Telecommunications services (the highest employer component), while it fell by 2,700 (15%) in Library and other information services.

In 2009–10, the industry generated \$72.5 billion in sales and service income (table 22.13), a 3% increase on the previous year. Total income was \$74.0 billion, an increase on the previous year of 10%.

Capital expenditure in 2009–10 was \$8,430 million

22.11 INFORMATION MEDIA AND TELECOMMUNICATIONS(a), Gross value added(b)

ANZSIC Division	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Information media and telecommunications	41 336	41 823	42 367

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: Australian System of National Accounts, 2010–11 (5204.0).

22.12 INFORMATION MEDIA AND TELECOMMUNICATIONS(a), Employment(b)

ANZSIC Subdivision	2008–09	2009–10	2010–11
	'000	'000	'000
Publishing (except Internet and music publishing)	49.5	42.7	43.5
Motion picture and sound recording activities	27.1	27.6	26.7
Broadcasting (except Internet)	26.8	27.0	27.6
Internet publishing and broadcasting(c)	0.1	1.0	1.6
Telecommunications services	94.2	89.3	92.3
Internet service providers, web search portals and data processing services	11.6	9.5	8.4
Library and other information services	16.2	18.1	15.4
Total Information media and telecommunications	225.5	214.9	215.6

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Individual quarterly estimates are subject to sampling variability too high for most practical purposes.

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

22.13 INFORMATION MEDIA AND TELECOMMUNICATIONS(a), Selected indicators

ANZSIC Subdivision	BUSINESS PROFITABILITY									
	Wages and salaries(b)	Total income	Sales and service income(c)	Operating profit before tax	Capital expenditure(d)	Industry value added	Profit margin	Made a profit	Broke even	Made a loss
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Publishing (except Internet and music publishing)										
2008–09	3 466	9 581	np	-1 769	633	7 488	np	72.3	3.3	24.3
2009–10	3 199	13 181	13 024	2 636	513	7 091	20.2	73.0	0.2	26.8
Motion picture and sound recording activities										
2008–09	1 000	6 727	6 625	*724	*248	^2 256	10.9	68.5	0.8	30.6
2009–10	1 155	6 752	6 529	^581	259	2 157	8.9	68.9	0.4	30.7
Broadcasting (except Internet)										
2008–09	1 290	8 969	8 619	np	482	3 686	np	54.6	6.8	38.5
2009–10	1 397	9 337	9 136	1 447	500	4 052	15.8	65.7	4.1	30.2
Internet publishing and broadcasting										
2008–09	^124	^794	^775	np	^24	^230	np	58.2	0.3	41.5
2009–10	*218	^947	^934	np	^37	^392	np	71.3	0.6	28.1
Telecommunications services										
2008–09	4 870	37 432	37 077	np	np	18 753	np	67.2	0.2	32.6
2009–10	4 895	40 559	39 706	6 204	6 856	19 980	15.6	62.2	0.2	37.6
Internet service providers, web search portals and data processing services										
2008–09	817	^3 483	3 443	*239	np	1 360	7.0	56.7	0.4	42.9
2009–10	713	2 994	2 971	*197	257	1 250	6.6	70.9	0.2	28.9
Library and other information services										
2008–09	115	^381	np	np	*15	172	np	67.7	0.9	31.4
2009–10	64	209	165	np	^7	107	np	65.3	2.1	32.7
Total Information media and telecommunications										
2008–09	11 683	67 367	70 686	5 682	8 752	33 944	8.0	65.9	1.4	32.7
2009–10	11 641	73 977	72 464	11 210	8 430	35 029	15.5	69.6	0.5	29.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry, 2009–10* (8155.0).

and industry value added was \$35,029 million. Operating profit before tax was \$11,210 million, an increase of 97% on the previous year. The profit margin for the industry was 16% in 2009–10 and 70% of businesses made a profit.

Rental, hiring and real estate services

Table 22.14 shows GVA (in volume terms) for the Rental, hiring and real estate services industry. Between 2009–10 and 2010–11, GVA for Rental, hiring and real estate services declined by 2%.

Table 22.15 shows employment for the Rental,

hiring and real estate services industry. Between 2009–10 and 2010–11, total employment increased from 185,600 to 206,200 people, an increase of 11%. Employment rose in both components, by 19% in Rental and hiring services and 9% in Property operators and real estate services.

In 2009–10, the Rental, hiring and real estate services industry generated \$85.4 billion in sales and service income (table 22.16), a minimal increase on the previous year. Total income was \$97.5 billion, an increase on the previous year of 12%.

22.14 RENTAL, HIRING AND REAL ESTATE SERVICES(a), Gross value added(b)

	2008-09	2009-10	2010-11
ANZSIC Division	\$m	\$m	\$m
Rental, hiring and real estate services	26 782	27 260	26 736

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009-10.

Source: Australian System of National Accounts, 2010-11 (5204.0).

22.15 RENTAL, HIRING AND REAL ESTATE SERVICES(a), Employment(b)

	2008-09	2009-10	2010-11
ANZSIC Subdivision	'000	'000	'000
Rental and hiring services (except real estate)	48.3	43.7	52.1
Property operators and real estate services	146.4	141.9	154.1
Total Rental, hiring and real estate services	194.7	185.6	206.2

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

22.16 RENTAL, HIRING AND REAL ESTATE SERVICES(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b)	Total income	Sales and Operating		Capital expenditure(d)	Industry value added	BUSINESS PROFITABILITY			
			service income(c)	profit before tax			Profit margin	Made a profit	Broke even	Made a loss
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Rental and hiring services (except real estate)										
2008-09	2 994	20 477	19 071	3 936	^6 685	9 783	20.6	74.6	0.9	24.5
2009-10	2 908	19 373	18 216	3 313	5 046	9 546	18.2	78.0	1.3	20.8
Property operators and real estate services										
2008-09	8 227	*66 435	66 120	**9 040	^31 547	37 962	13.7	75.9	1.3	22.7
2009-10	8 015	78 096	67 185	20 739	^32 597	39 929	30.9	76.7	1.4	22.0
Total Rental, hiring and real estate services										
2008-09	11 220	86 912	85 191	**12 975	^38 233	47 744	15.2	75.8	1.3	22.9
2009-10	10 923	97 469	85 401	24 053	37 643	49 475	28.2	76.8	1.4	21.8

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: Australian Industry, 2009-10 (8155.0).

Capital expenditure in 2009–10 was \$37,643 million and industry value added was \$49,475 million. The profit margin for the industry was 28% in 2009–10 and 77% of businesses made a profit.

Professional, scientific and technical services

Table 22.17 shows the GVA (in volume terms) for the Professional, scientific and technical services industry. Between 2009–10 and 2010–11, industry GVA rose by 7%.

Table 22.18 shows employment for the Professional, scientific and technical services industry. Between 2009–10 and 2010–11, this industry's total employment increased from 834,000 to 861,000 people, an increase of 3%. Professional, scientific and technical services (except computer system design and related services) had the largest increase in employment, rising by 20,100 (3%) to constitute 81% of employment in the industry. Computer system design and related services had a larger percentage increase, with employment rising by 4%, to cover 19% of employment in the industry.

In 2009–10, the Professional, scientific and technical services industry generated \$157.9 billion in sales and service income (table 22.19).

Total income was \$180.4 billion, down 3% on the previous financial year.

Capital expenditure in 2009–10 was \$9,051 million. Industry value added was \$83,895 million and operating profit before tax was \$31,708 million, a 15% decrease on the previous financial year. The profit margin for the industry was 20% in 2009–10, down from 24% in 2008–09, while 75% of businesses made a profit in both 2008–09 and 2009–10.

Wages and salaries for the Professional, scientific and technical services industry in 2009–10 were \$53,176 million.

Administrative and support services

Table 22.20 shows the GVA (in volume terms) for the Administrative and support services industry. Between 2009–10 and 2010–11, Administrative and support services GVA rose by nearly 7%.

Table 22.21 shows employment for the Administrative and support services industry. Between 2009–10 and 2010–11, total employment in this industry increased from 374,000 to 400,700 people, an increase of 7%. Building cleaning, pest control and other support services had the largest increase, rising by 20,600 people (11%). Administrative services increased by 6,100 people, an increase of 3%.

22.17 PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES(a), Gross value added(b)

ANZSIC Division	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Professional, scientific and technical services	74 736	81 043	86 604

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: Australian System of National Accounts, 2010–11 (5204.0).

22.18 PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES(a), Employment(b)

ANZSIC Subdivision	2008–09	2009–10	2010–11
	'000	'000	'000
Professional, scientific and technical services(c)	638.5	676.9	697.0
Computer system design and related services	145.6	156.9	163.9
Professional, scientific and technical services, n.f.d.(d)	**0.1	**0.1	**0.1
Total Professional, scientific and technical Services	784.1	834.0	861.0

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Except computer system design and related services.

(d) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

22.19 PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b)	Total income	Sales and service income(c)	Operating profit before tax	Capital expenditure(d)	Industry value added	BUSINESS PROFITABILITY				
							Profit margin %	Made a profit %	Broke even %	Made a loss %	
Professional, scientific and technical services(e)											
2008–09	40 117	153 252	122 569	34 665	6 584	64 292	28.3	75.9	1.5	22.6	
2009–10	41 003	145 781	124 467	28 224	^ 7 620	65 554	22.7	75.6	2.2	22.2	
Computer system design and related services											
2008–09	11 930	33 211	32 145	^ 2 538	2 689	17 295	7.9	71.1	2.6	26.3	
2009–10	12 173	34 628	33 403	^ 3 483	1 431	18 342	10.4	73.9	1.7	24.4	
Total Professional, scientific and technical services											
2008–09	52 047	186 463	154 714	37 203	9 273	81 587	24.0	75.0	1.7	23.3	
2009–10	53 176	180 409	157 870	31 708	^ 9 051	83 895	20.1	75.3	2.1	22.6	

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

(e) Except computer system design and related services.

Source: *Australian Industry, 2009–10* (8155.0).

22.20 ADMINISTRATIVE AND SUPPORT SERVICES(a), Gross value added(b)

ANZSIC Division	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Administrative and support services	30 714	30 246	32 254

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: *Australian System of National Accounts, 2010–11* (5204.0).

22.21 ADMINISTRATIVE AND SUPPORT SERVICES(a), Employment(b)

ANZSIC Subdivision	2008–09	2009–10	2010–11
	'000	'000	'000
Administrative services	187.2	189.1	195.2
Building cleaning, pest control and other support services	160.0	184.9	205.5
Administrative and support services n.f.d.(c)	0.1	—	—
Total Administrative and support services	347.2	374.0	400.7

— nil or rounded to zero (including null cells)

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

In 2009–10, the industry generated \$62.3 billion in sales and service income (table 22.22). Total income was \$64.9 billion, up 5% on the previous financial year, with Administrative services contributing 79%.

Capital expenditure in the same period was \$2,607 million (down 67% from 2008–09). Industry value added was \$38,656 million, while operating profit before tax was \$3,525 million. The profit margin for the industry was 6% in 2009–10 and 79% of businesses made a profit.

22.22 ADMINISTRATIVE AND SUPPORT SERVICES(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b)	Total income	Sales and service income(c)	Operating profit before tax	Capital expenditure(d)	Industry value added	BUSINESS PROFITABILITY			
							Profit margin %	Made a profit %	Broke even %	Made a loss %
Administrative services										
2008–09	23 027	48 779	46 877	**859	7 019	30 749	1.8	73.6	3.5	22.8
2009–10	24 875	51 268	48 821	**1 491	1 820	31 752	3.1	74.7	4.0	21.4
Building cleaning, pest control and other support services										
2008–09	3 582	12 751	12 298	^ 2 085	^ 772	6 391	17.0	88.0	1.4	10.6
2009–10	3 801	13 637	13 472	^ 2 034	^ 786	6 904	15.1	83.1	1.6	15.3
Total Administrative and support services										
2008–09	26 609	61 530	59 176	**2 944	7 790	37 140	5.0	81.3	2.4	16.3
2009–10	28 675	64 905	62 293	**3 525	2 607	38 656	5.7	79.1	2.7	18.2

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry, 2009–10* (8155.0).

22.23 PUBLIC ADMINISTRATION AND SAFETY(a), Gross value added(b)

ANZSIC Division	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Public administration and safety	64 090	64 117	65 266

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: *Australian System of National Accounts, 2010–11* (5204.0).

Wages and salaries for the Administrative and support services industry in 2009–10 were \$28,675 million, with 87% in the Administrative services industry.

Note that there are methodological and scope differences between the collections used as sources in this chapter. In particular, wages and salaries data in table 22.22 cannot be compared with employment data in table 22.21.

Public administration and safety

Table 22.23 shows the GVA (in volume terms) for Public administration and safety. Between 2009–10 and 2010–11, Public administration and safety GVA rose by 2%.

Table 22.24 shows employment for the Public administration and safety industry. Between 2009–10 and 2010–11, total employment for

this industry increased from 678,800 to 705,000 people, an increase of 4%. Public order, safety and regulatory services had the largest increase, rising by 20,400 people (12%). Public administration rose by 6,500 people, an increase of 1% while Defence employment fell by 700 people, a decrease of 2%.

In 2009–10, the private sector component of the Public order, safety and regulatory services industry generated \$6.0 billion in sales and service income (table 22.25). Total income was \$6.3 billion, down 3% on the previous financial year.

Capital expenditure in 2009–10 was \$252 million. Industry value added was \$3,675 million and 81% of businesses made a profit.

Wages and salaries in 2009–10 were \$2,533 million.

22.24 PUBLIC ADMINISTRATION AND SAFETY(a), Employment(b)

	2008-09	2009-10	2010-11
<i>ANZSIC Subdivision</i>	'000	'000	'000
Public administration	461.4	475.9	482.4
Defence(c)	26.3	29.6	28.9
Public order, safety and regulatory services	188.3	173.3	193.7
Total Public administrative and safety	676.0	678.8	705.0

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Excludes serving military personnel (but includes civilians working for the Australian Department of Defence).

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

22.25 PUBLIC ADMINISTRATION AND SAFETY (PRIVATE)(a), Selected indicators

<i>ANZSIC Subdivision</i>	BUSINESS PROFITABILITY									
	<i>Wages and salaries(b)</i>	<i>Total income</i>	<i>Sales and service income(c)</i>	<i>Operating profit before tax</i>	<i>Capital expenditure(d)</i>	<i>Industry value added</i>	<i>Profit margin</i>	<i>Made a profit</i>	<i>Broke even</i>	<i>Made a loss</i>
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Public order, safety and regulatory services (private)										
2008-09	2 497	6 513	6 146	^ 663	^ 268	3 605	10.8	73.8	4.2	22.0
2009-10	2 533	6 296	6 044	na	^ 252	3 675	na	81.1	1.7	17.2

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

na not available

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0). The table excludes two other subdivisions: Public administration and Defence.

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry, 2009-10* (8155.0).

Education and training

Table 22.26 shows the GVA (in volume terms) for Education and training. Between 2009-10 and 2010-11, Education and training GVA rose by 2%.

Table 22.27 shows employment for the Education and training industry. Between 2009-10 and 2010-11, total employment increased from 830,800 to 866,900 people, an increase of 4%. Preschool and school education and Tertiary education had the largest increases, rising by 17,500 and 13,300 respectively while Adult, community and other education rose by 4,800 people.

In 2009-10, the private sector component of the Education and training industry generated \$14.4 billion in sales and service income (table 22.28). Total income was \$27.3 billion, up 10% on the previous financial year.

Capital expenditure in 2009-10 was \$3,265 million. Industry value added was \$16,631 million and 75% of businesses made a profit.

Wages and salaries in 2009-10 were \$13,136 million. Preschool and school education was the largest industry component, contributing 71% of wages and salaries, 76% of capital expenditure, 60% of total income and 69% of industry value added.

22.26 EDUCATION AND TRAINING(a), Gross value added(b)

	2008–09	2009–10	2010–11
ANZSIC Division	\$m	\$m	\$m
Education and training	55 596	57 546	58 821

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: Australian System of National Accounts, 2010–11 (5204.0).

22.27 EDUCATION AND TRAINING(a), Employment(b)

	2008–09	2009–10	2010–11
ANZSIC Subdivision	'000	'000	'000
Preschool and school education	467.8	484.6	502.1
Tertiary education	228.4	219.1	232.4
Adult, community and other education	105.3	113.5	118.3
Education and training, n.f.d.(c)	8.0	13.6	14.0
Total Education and training	809.4	830.8	866.9

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

22.28 EDUCATION AND TRAINING (PRIVATE)(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b)	Total income	Sales and service income(c)	Operating profit before tax	Capital expenditure(d)	Industry value added	BUSINESS PROFITABILITY			
							Profit margin	Made a profit	Broke even	Made a loss
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Preschool and school education (private)										
2008–09	8 526	13 865	5 452	*827	^1 963	10 514	15.2	68.1	—	31.9
2009–10	9 380	16 299	^5 898	*2 040	^2 492	11 441	34.6	80.3	—	19.7
Tertiary education (private)										
2008–09	2 159	6 130	^4 967	np	^395	3 063	np	66.2	0.5	33.3
2009–10	2 162	5 989	^4 463	**452	^414	^2 533	10.1	64.1	0.1	35.8
Adult, community and other education (private)										
2008–09	1 401	4 749	3 852	np	^280	2 288	np	69.8	0.2	29.9
2009–10	1 594	5 042	^4 010	np	^360	2 657	np	80.3	4.0	15.7
Total Education and training (private)										
2008–09	12 086	24 744	14 272	^2 327	^2 639	15 865	16.3	68.5	0.3	31.2
2009–10	13 136	27 330	14 372	np	^3 265	16 631	np	75.4	2.2	22.4

— nil or rounded to zero (including null cells)

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: Australian Industry, 2009–10 (8155.0).

Health care and social assistance

Table 22.29 shows the GVA (in volume terms) for Health care and social assistance. Between 2009–10 and 2010–11, Health care and social assistance GVA rose by 2%.

Table 22.30 shows employment for the Health care and social assistance industry. Between 2009–10 and 2010–11, total employment in this industry increased from 1,216,700 to 1,291,800 people, an increase of 6%. Medical and other health care services had the largest increase, rising by 33,500 people (10%). Social assistance services had the next highest employment increase, rising by 26,600 people (9%).

In 2009–10, the private sector component of the Health care and social assistance industry generated \$59.2 billion in sales and service income (table 22.31). Total income was \$82.0 million, up 5% on the previous financial year.

Capital expenditure in 2009–10 was \$8,411 million. Industry value added was \$48,642 million and operating profit before tax \$12,146 million. The profit margin for the industry was 21%, while 77% of businesses made a profit.

Wages and salaries in 2009–10 were \$31,741 million. Medical and other health care services was the largest component industry, with nearly

39% of the industry's wages and salaries, 82% of operating profit before tax, 54% of total income and 51% of industry value added.

Arts and recreation services

Table 22.32 shows GVA (in volume terms) for the Arts and recreation services industry. Between 2009–10 and 2010–11, GVA for Arts and recreation services increased by 2%.

Table 22.33 shows employment for the Arts and recreation services industry. Between 2009–10 and 2010–11, total employment increased from 197,800 to 201,900 people, a rise of 2%. Employment rose in three of the components, with the biggest increase in Sports and recreation employment which was up 4,600 persons. The Creative and performing arts component shed 3,500 employees.

In 2009–10, the industry generated \$26.7 billion in sales and service income (table 22.34), a 5% increase on the previous year. Total income was \$29.7 billion, an increase on the previous year of 6%.

Operating profit before tax in 2009–10 was up 7% to \$4,293 million and industry value added was \$10,016 million, a 6% increase on the previous year. The profit margin for the industry was 16% in 2009–10 and 67% of businesses made a profit.

22.29 HEALTH CARE AND SOCIAL ASSISTANCE(a), Gross value added(b)

ANZSIC Division	2008-09 \$m	2009-10 \$m	2010-11 \$m
Health care and social assistance	68 807	72 627	74 307

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2008–09.

Source: Australian System of National Accounts, 2010–11 (5204.0).

22.30 HEALTH CARE AND SOCIAL ASSISTANCE(a), Employment(b)

ANZSIC Subdivision	2008-09 '000	2009-10 '000	2010-11 '000
Hospitals	361.0	379.0	385.2
Medical and other health care services	329.2	339.5	373.0
Residential care services	159.9	194.9	204.4
Social assistance services	298.7	301.2	327.8
Health care and social assistance, n.f.d.(c)	4.1	2.1	1.4
Total Health care and social assistance	1 152.9	1 216.7	1 291.8

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: Labour Force, Australia, Detailed, Quarterly (6291.0.55.003).

22.31 HEALTH CARE AND SOCIAL ASSISTANCE (PRIVATE)(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b) \$m	Total income \$m	Sales and service income(c) \$m	Operating profit before tax \$m	Capital expenditure(d) \$m	Industry value added \$m	BUSINESS PROFITABILITY				
							Profit margin %	Made a profit %	Broke even %	Made a loss %	
Hospitals (private)											
2008–09	4 906	11 212	9 097	^ 629	964	6 380	6.9	82.3	0.2	17.4	
2009–10	5 433	12 094	9 681	np	1 054	7 098	np	75.5	0.3	24.2	
Medical and other health care services (private)											
2008–09	11 340	42 207	37 935	^ 10 912	^ 2 227	25 193	28.8	86.9	2.2	10.9	
2009–10	12 469	43 972	40 393	9 997	3 247	24 652	24.7	78.7	0.1	21.2	
Residential care services (private)											
2008–09	7 027	13 693	4 401	^ 266	3 373	8 128	6.0	62.9	0.3	36.8	
2009–10	7 894	14 505	4 264	^ 644	^ 3 199	9 460	15.1	63.9	0.3	35.8	
Social assistance services (private)											
2008–09	5 466	11 354	4 684	*464	726	6 805	9.9	70.1	0.1	29.7	
2009–10	5 945	11 457	^ 4 831	np	^ 911	7 432	np	72.3	2.3	25.3	
Total Health care and social assistance (private)											
2008–09	28 740	78 465	56 117	^ 12 272	7 291	46 505	21.9	83.7	1.8	14.5	
2009–10	31 741	82 028	59 170	12 146	8 411	48 642	20.5	77.3	0.4	22.3	

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry, 2009–10* (8155.0).

22.32 ARTS AND RECREATION SERVICES(a), Gross value added(b)

ANZSIC Division	2008–09 \$m	2009–10 \$m	2010–11 \$m
Arts and recreation services	10 907	10 911	11 172

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009–10.

Source: *Australian System of National Accounts, 2010–11* (5204.0).

22.33 ARTS AND RECREATION SERVICES(a), Employment(b)

ANZSIC Subdivision	2008–09 '000	2009–10 '000	2010–11 '000
Heritage activities	30.2	27.9	29.3
Creative and performing arts activities	40.2	41.5	38.0
Sports and recreation activities	103.0	98.5	103.1
Gambling activities	26.9	27.4	29.8
Arts and recreation services n.f.d.(c)	1.7	2.5	1.7
Total Arts and recreation services	202.0	197.8	201.9

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: *Labour Force, Australia, Detailed, Quarterly* (6291.0.55.003).

22.34 ARTS AND RECREATION SERVICES(a), Selected indicators

ANZSIC Subdivision	Wages and salaries(b) \$m	Total income \$m	Sales and service income(c) \$m	Operating profit before tax \$m	Capital expenditure(d) \$m	Industry value added \$m	BUSINESS PROFITABILITY			
							Profit margin %	Made a profit %	Broke even %	Made a loss %
Heritage activities										
2008-09	201	672	522	^ 70	95	301	13.4	66.1	0.3	33.5
2009-10	229	705	533	^ 56	121	366	10.4	69.4	0.3	30.3
Creative and performing arts activities										
2008-09	788	3 193	2 600	^ 576	^ 162	1 427	22.2	67.2	3.5	29.3
2009-10	^ 791	3 501	2 773	^ 666	^ 203	^ 1 441	24.0	72.4	5.9	21.7
Sports and recreation activities										
2008-09	2 234	11 398	9 700	^ 1 111	^ 1 180	^ 3 430	11.5	71.7	0.2	28.1
2009-10	2 597	12 624	10 588	^ 1 276	^ 1 459	3 768	12.1	58.8	0.2	41.0
Gambling activities										
2008-09	1 369	12 830	12 672	2 262	780	4 284	17.9	83.1	0.2	16.7
2009-10	1 397	12 908	12 784	2 295	754	4 441	18.0	93.1	0.2	6.7
Total Arts and recreation services										
2008-09	4 593	28 093	25 494	4 019	^ 2 217	9 441	15.8	70.1	1.7	28.2
2009-10	5 014	29 738	26 678	4 293	^ 2 537	10 016	16.1	66.7	2.7	30.6

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

Source: *Australian Industry, 2009-10 (8155.0)*.

Other services

Table 22.35 shows GVA (in volume terms) for the Other services industry. Between 2009-10 and 2010-11, GVA for Other services declined by 4%.

Table 22.36 shows employment for Other services. Between 2009-10 and 2010-11, total employment increased from 454,100 to 458,800 people, an increase of less than 1%. Employment grew by 14,800 persons (7%) in Repair and maintenance while it fell by 10,000 (4%) in Personal and other services.

In 2009-10, the industry generated \$44.7 billion in sales and service income (table 22.37), a 1% fall on the previous year. Total income was \$54.8 billion, an increase on the previous year of 4%.

Capital expenditure in 2009-10 was \$3,645 million and industry value added was \$23,100 million. Operating profit before tax was \$7,714 million, an increase of 20% on the previous year. The profit margin for the industry was 17% in 2009-10 and 69% of businesses made a profit.

22.35 OTHER SERVICES(a), Gross value added(b)

ANZSIC Division	2008-09 \$m	2009-10 \$m	2010-11 \$m
Other services	23 808	23 548	22 671

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures. Reference year is 2009-10.

Source: *Australian System of National Accounts, 2010-11 (5204.0)*.

22.36 OTHER SERVICES(a), Employment(b)

	2008–09	2009–10	2010–11
ANZSIC Subdivision	'000	'000	'000
Repair and maintenance	230.6	221.2	236.0
Personal and other services	220.9	228.8	218.8
Private households employing staff and undifferentiated goods and service-producing activities of households for own use	3.4	4.1	3.8
Other services n.f.d.(c)	—	—	0.2
Total Other services	454.9	454.1	458.8

— nil or rounded to zero (including null cells)

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: *Labour Force, Australia, Detailed, Quarterly (6291.0.55.003)*.

22.37 OTHER SERVICES(a), Selected indicators

ANZSIC Subdivision	BUSINESS PROFITABILITY									
	Wages and salaries(b)	Total income	Sales and service income(c)	Operating profit before tax	Capital expenditure (d)	Industry value added	Profit margin	Made a profit	Broke even	Made a loss
	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%
Repair and maintenance										
2008–09	5 802	26 765	26 298	^ 4 261	^ 1 183	11 454	16.2	85.2	—	14.7
2009–10	5 771	25 515	25 369	^ 3 711	^ 651	11 172	14.6	77.7	1.1	21.2
Personal and other services										
2008–09	7 815	26 049	18 925	*2 161	^ 2 751	11 446	11.4	68.1	2.3	29.6
2009–10	8 326	29 292	19 301	^ 4 003	^ 2 994	11 928	20.7	62.5	0.7	36.8
Total Other services(e)										
2008–09	13 617	52 813	45 222	^ 6 422	^ 3 934	22 900	14.2	76.0	1.3	22.7
2009–10	14 097	54 807	44 671	^ 7 714	^ 3 645	23 100	17.3	69.3	0.9	29.9

— nil or rounded to zero (including null cells)

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Includes capitalised wages and salaries. Excludes the drawings of working proprietors.

(c) Includes rent, leasing and hiring income.

(d) Includes capital work done for own use.

(e) Excludes Private households employing staff and undifferentiated goods and service-producing activities of households for own use.

Source: *Australian Industry, 2009–10 (8155.0)*.

Bibliography

ABS products

Australian Industry (8155.0)

Australian System of National Accounts (5204.0)

Business Indicators, Australia (5676.0)

Labour Force, Australia, Detailed, Quarterly (6291.0.55.003)

Retail Trade, Australia (8501.0)

TOURISM

Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for a period of less than one year.

The term 'tourism' in the international standards is not restricted to leisure activity. It also includes short-term (less than one year) travel for business or other reasons such as education, provided the destination is outside the person's usual environment. Travel is a broader concept that includes commuting to a place of work, travel for business or leisure, and migration.

This chapter outlines the value of tourism production, tourism consumption, international trade in tourism and tourism employment. International visitor arrivals and Australian resident departures are covered, along with a range of data on visitor travel and tourist accommodation in Australia.

In 2009–10, the contribution of tourism to Australia's gross domestic product was estimated to be 2.6%, with tourism employing just over half a million people.

In the same year, international visitors consumed almost \$23 billion worth of goods and services produced by the Australian economy.

This chapter includes a special article, *Farm visits in Australia*.

More information on the Accommodation and food services industry can be found in chapters 8 *Labour*, 15 *Industry structure and performance*, 25 *Information and communication technology* and 26 *Research and innovation*.

Tourism industry

Tourism is not an industry in the conventional sense. In the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006* (1292.0), industries are defined on the basis of the primary goods and services that they produce. However, tourism is defined according to the status of the consumer, that is, the characteristics of the consumer determine whether the production is included within the scope of tourism. For example, expenditure on a restaurant meal by a visitor contributes to tourism's share of the economy, whereas expenditure by a local resident does not.

Although a considerable amount of tourism spending may take place within the usual environment (e.g. purchase of air tickets, tour packages, luggage), the consumption of most tourism services occurs outside of the usual environment. Visitors have a positive economic impact on their destination by generating additional consumption at the destination over and above that generated by resident consumers.

This combined value of tourists' consumption (relating to the trip) provides the basis for the economic activity generated by tourism.

Visitors can be classified into national (domestic) and international visitors. National visitors consist of Australian residents who travel outside their usual environment within Australia. They include both overnight visitors (staying one or more nights at a location) and same-day visitors. International visitors are those persons who travel to a country other than that in which they have their usual residence.

The contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP), is measured by gross value added (GVA). Information on the relationship between industry GVA and GDP is provided in the *Industry structure and performance* chapter. A tourism satellite account (TSA) is recognised internationally as the best method for measuring the economic contribution of tourism. Tourism GVA and Tourism GDP are the major economic aggregates derived in the TSA.

23.1 TOURISM SHARE OF GROSS VALUE ADDED AND GROSS DOMESTIC PRODUCT

		2005-06	2006-07	2007-08	2008-09	2009-10
Tourism characteristic industries GVA(a)						
Accommodation	\$m	4 192	4 867	5 325	5 284	5 339
Ownership of dwellings	\$m	1 830	1 935	2 239	2 485	2 705
Cafes, restaurants and takeaway food services	\$m	3 104	3 216	3 446	3 337	3 461
Clubs, pubs, taverns and bars	\$m	1 158	1 202	1 282	1 254	1 286
Rail transport	\$m	378	473	460	452	458
Taxi transport	\$m	268	400	390	385	379
Other road transport	\$m	409	547	548	541	552
Air, water and other transport	\$m	4 166	4 345	4 522	4 516	4 618
Motor vehicle hiring	\$m	596	652	646	654	685
Travel agency and tour operator services	\$m	1 447	1 446	1 508	1 445	1 429
Cultural services	\$m	393	417	434	463	507
Casinos and other gambling services	\$m	209	197	204	207	204
Other sports and recreation services	\$m	463	469	489	521	572
<i>Total</i>	<i>\$m</i>	<i>18 613</i>	<i>20 165</i>	<i>21 493</i>	<i>21 544</i>	<i>22 196</i>
Direct GVA of tourism connected industries(b)	\$m	5 224	5 623	5 948	6 261	6 373
Direct GVA of all other industries(c)	\$m	1 969	2 085	2 120	2 120	2 232
Direct Tourism GVA	\$m	25 806	27 873	29 560	29 924	30 802
Tourism share of GVA	%	2.8	2.8	2.7	2.6	2.6
Tourism net taxes on products	\$m	2 423	2 644	2 868	2 860	2 940
Direct Tourism GDP	\$m	28 229	30 517	32 428	32 784	33 742
Tourism share of GDP	%	2.8	2.8	2.8	2.6	2.6

(a) Tourism characteristic industries in the Australian Tourism Satellite Account (TSA) include: (i) a core list of tourism characteristic industries as defined in the 2008 international standards for Tourism Satellite Accounts (which are based on their link to tourism in the worldwide context); and (ii) any other industries where at least 25% of their output is consumed by visitors (e.g. Casinos and other gambling services).

(b) Tourism connected industries are those industries not classified as characteristic that have products that are consumed by visitors in volumes that are significant (e.g. Education and training).

(c) The share of GVA of all industries that provide outputs to visitors not included in characteristic or connected industries.

Source: *Australian National Accounts: Tourism Satellite Account (5249.0)*.

The tourism industry share of total GVA in 2009–10 was 2.6% (table 23.1). This share has declined from a peak of 3.5% in 1998–99.

The tourism industry employed 500,200 people in 2009–10 (table 23.2). The number of tourism employed persons grew 5.2% between 2005–06 and 2009–10, slower than the growth in total employed persons (9.3%) over that period. Consequently, the tourism share of total

employed persons fell slightly between 2005–06 and 2009–10.

Tourism consumption is the amount paid by a visitor, or on behalf of a visitor, for and during his/her trip and stay at the destination. It also includes imputed consumption by resident and non-resident visitors on tourism-related products; for instance, the imputed values of non-market services provided directly to visitors such as

23.2 TOURISM INDUSTRY EMPLOYMENT

		2005–06	2006–07	2007–08	2008–09	2009–10
Tourism characteristic and connected industries(a)	'000	453.5	455.5	468.2	470.0	476.1
All other industries(b)	'000	21.8	22.6	23.2	23.6	24.1
Total tourism employed persons	'000	475.3	478.1	491.4	493.6	500.2
Total employed persons	'000	10 139.9	10 441.0	10 759.7	10 947.1	11 084.7
Tourism share of total employment	%	4.7	4.6	4.6	4.5	4.5

(a) Tourism characteristic and connected industries are those industries that have products which are consumed by visitors in volumes that are significant.

(b) The share of GVA of all industries that provide outputs to visitors but are not included in characteristic or connected industries.

Source: Australian National Accounts: Tourism Satellite Account (5249.0).

23.3 SHARE OF TOURISM CONSUMPTION ON SELECTED TOURISM PRODUCTS, By type of visitor—2009–10

	Households	Business/ government	International	All visitors
	%	%	%	%
Long distance passenger transportation	10.9	34.2	19.4	15.6
Takeaway and restaurant meals	16.9	15.1	10.6	15.2
Shopping (including gifts and souvenirs)	16.4	..	12.2	13.5
Accommodation services	8.4	19.4	13.7	10.9
Fuel (petrol, diesel)	9.5	11.4	1.7	7.9
Food products	8.9	2.1	8.0	7.9
Alcoholic beverages and other beverages	4.7	3.5	4.7	4.6
Imputed and actual rent on dwellings	5.0	..	3.1	3.9
Recreational, cultural and sporting services	5.1	..	1.9	3.8
Education services	0.3	0.7	12.0	3.2
Travel agency and tour operator services	2.8	6.9	0.9	2.8
All other tourism products	11.1	6.7	11.8	10.7
Total	100.0	100.0	100.0	100.0

.. not applicable

Source: Australian National Accounts: Tourism Satellite Account (5249.0).

23.4 EXPORTS OF TOURISM GOODS AND SERVICES

		2005–06	2006–07	2007–08	2008–09	2009–10
International visitor consumption(a)	\$m	19 749	21 199	22 377	23 275	22 686
Total exports(b)	\$m	195 944	216 795	233 813	284 571	253 762
Tourism share of exports	%	10.1	9.9	9.6	8.2	8.9
Growth in international visitor consumption(c)	%	3.4	7.3	5.6	4.0	-2.5
Growth in total exports(c)	%	17.5	10.6	7.8	21.7	-10.8

(a) Australian National Accounts: Tourism Satellite Account (5249.0).

(b) From Balance of Payments and International Investment Position, Australia (5302.0).

(c) There are some conceptual differences between 5249.0 and 5302.0. See the explanatory notes in 5249.0 for further details.

Source: Australian National Accounts: Tourism Satellite Account (5249.0); Balance of Payments and International Investment Position, Australia (5302.0).

public museums (even though these may be provided for free).

In 2009–10, tourism consumption was largest for Long distance passenger transportation (16% of consumption) and Takeaway and restaurant meals (15%), followed by Shopping (including gifts and souvenirs) with 14%, and Accommodation services (11%) (table 23.3).

However, there are some marked differences in consumption patterns by type of visitor. Long distance passenger transportation is the dominant tourism product consumed by domestic business/government (34%) and international visitors (19%). In contrast, domestic household visitor consumption is dominated by Takeaway and restaurant meals (17%) and expenditure on Shopping (including gifts and souvenirs) (16%).

Total international visitor consumption decreased by 2.5% between 2008–09 and 2009–10, while total exports of goods and services fell by 11% over the same period (table 23.4). Growth in international visitor consumption was strongest during 2006–07. In 2009–10, international visitors consumed \$22.7 billion worth of goods and services produced by the Australian economy, representing 8.9% of the total exports of goods and services.

Tourist accommodation

At 31 December 2010, there were 227,320 guest rooms available in hotels, motels, guest houses and serviced apartments with 15 or more rooms (table 23.5), representing an increase of less than 1% compared with 31 December 2009. Between 2009 and 2010, the number of guest rooms available in licensed hotels increased by 2%, and in serviced apartments by 1%. Guest rooms in motels and guest houses decreased by 1%.

The room occupancy rate for hotels, motels, guest houses and serviced apartments combined increased from 62% in 2009 to 64% in 2010. In 2006, the room occupancy rate was 64%.

Overall, takings from accommodation increased by 19% between 2006 and 2010. The largest increase over the period was for serviced apartments with 30%. Overall accommodation takings for 2010 increased by 6% when compared with 2009, with the largest increase for the hotel sector (7%).

Short-term international visitor arrivals

Short-term international visitor arrivals refer to visitors staying less than one year in Australia. There were 5.9 million such arrivals in 2010, representing an increase of 5% since 2009. The increase follows small decreases in international arrivals in 2008 and 2009 (graph 23.6), which coincided with the Global Financial Crisis. Other external events such as fear of terrorism and the Severe Acute Respiratory Syndrome (SARS) scare coincided with the decrease in arrivals between 2001 and 2003.

Major source countries for short-term international visitor arrivals to Australia during 2010 were New Zealand (1,161,800 visitor arrivals), the United Kingdom (646,700), United States of America (472,200) and China (excludes SARs and Taiwan) (453,800) (table 23.7).

Between 2009 and 2010, the largest increase in the number of short-term international visitor arrivals was from China, with an increase of 87,400 or 24%. The largest decrease in visitor arrivals was from the United Kingdom, which fell by 17,000 or 2.6%.

In 2010, people whose main purpose for their trip was a holiday accounted for the highest share (46%) and those coming for employment accounted for the lowest share (3%) of short-term international visitor arrivals to Australia (graph 23.8).

December recorded the highest number of visitor arrivals (12% of total arrivals) in 2010, while May recorded the lowest (6%) (graph 23.9).

International visitor nights refers to the number of nights all international visitors aged 15 years and over spent in Australia. In 2010, international visitors in Australia spent the most nights in New South Wales (65 million or 35%), followed by Victoria (41 million or 22%) and Queensland (40 million or 21%) (graph 23.10).

Of all international visitors in 2010, nights spent in Australia by those who travelled for holiday purposes accounted for 33% of short-term international visitor nights, 32% were for educational purposes, 19% of nights were to visit friends and relatives and 6% were for business purposes (graph 23.11).

23.5 HOTELS, MOTELS AND SERVICED APARTMENTS(a)

		2006	2007	2008	2009	2010
LICENSED HOTELS WITH FACILITIES(b)						
Establishments(c)	no.	823	833	845	859	857
Guest rooms(c)	no.	80 560	81 372	82 483	85 181	86 489
Bed spaces(c)	no.	212 826	213 005	215 884	222 167	224 994
Room occupancy rate(d)	%	69.8	71.1	69.1	67.2	69.4
Bed occupancy rate(d)	%	43.1	43.5	42.1	41.9	42.7
Takings from accommodation(d)	\$m	3 297.5	3 594.6	3 747.3	3 555.1	3 805.8
MOTELS AND GUEST HOUSES WITH FACILITIES(b)						
Establishments(c)	no.	2 479	2 484	2 475	2 477	2 450
Guest rooms(c)	no.	86 859	87 683	87 718	87 252	86 422
Bed spaces(c)	no.	250 488	251 945	250 123	246 787	244 286
Room occupancy rate(d)	%	57.4	58.6	58.2	56.2	57.4
Bed occupancy rate(d)	%	34.2	34.7	34.4	33.9	34.4
Takings from accommodation(d)	\$m	1 841.6	2 002.5	2 109.3	2 040.3	2 138.8
SERVICED APARTMENTS(b)						
Establishments(c)	no.	893	918	957	974	972
Guest rooms(c)	no.	47 753	49 262	53 118	54 001	54 409
Bed spaces(c)	no.	155 806	159 801	171 140	171 185	171 174
Room occupancy rate(d)	%	67.9	69.2	67.2	65.1	66.5
Bed occupancy rate(d)	%	44.3	44.7	43.2	42.7	43.3
Takings from accommodation(d)	\$m	1 643.7	1 845.5	2 040.3	2 033.9	2 143.6
TOTAL HOTELS, MOTELS AND SERVICED APARTMENTS(b)						
Establishments(c)	no.	4 195	4 235	4 277	4 310	4 279
Guest rooms(c)	no.	215 172	218 317	223 319	226 434	227 320
Bed spaces(c)	no.	619 120	624 751	637 147	640 139	640 454
Room occupancy rate(d)	%	64.4	65.6	64.3	62.4	64.1
Bed occupancy rate(d)	%	39.7	40.3	39.4	39.0	39.7
Room nights occupied(d)	'000	49 965.0	51 702.1	52 005.6	51 136.2	52 836.1
Takings from accommodation(d)	\$m	6 782.8	7 442.7	7 896.9	7 629.2	8 088.1

(a) Comprising establishments with 15 or more rooms or units.

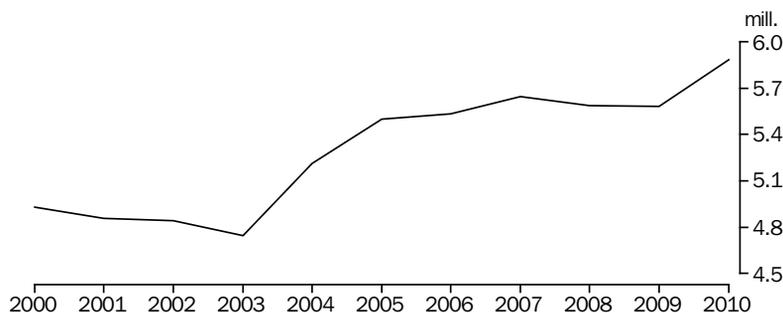
(b) For definitions see the source below.

(c) At 31 December.

(d) Twelve months ended 31 December.

Source: *Tourist Accommodation, Australia (8635.0)*.

23.6 SHORT-TERM MOVEMENTS(a), International visitor arrivals



(a) Statistics on arrivals relate to the number of movements of travellers rather than the number of travellers. Multiple movements of travellers in a given year are counted separately.

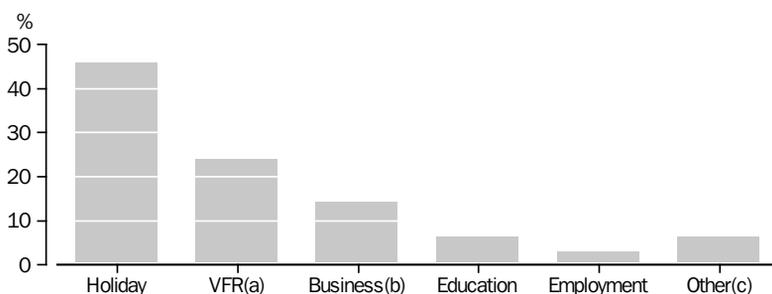
Source: *Overseas Arrivals and Departures, Australia (3401.0)*.

23.7 SHORT-TERM INTERNATIONAL VISITOR ARRIVALS, By major source countries

	2006	2007	2008	2009	2010
	'000	'000	'000	'000	'000
New Zealand	1 075.7	1 138.0	1 113.4	1 110.3	1 161.8
United Kingdom	734.2	688.9	672.0	663.7	646.7
United States of America	456.0	459.7	454.5	479.8	472.2
China (excludes SARs and Taiwan)	308.5	357.4	356.5	366.4	453.8
Japan	650.9	572.9	457.3	355.3	398.1
Singapore	253.3	263.8	270.8	285.4	308.0
Malaysia	150.3	159.5	171.1	211.5	236.9
Korea, Republic of (South)	260.9	253.2	218.3	181.0	214.0
Hong Kong (SAR of China)	154.6	146.9	143.9	157.0	163.9
Germany	148.3	151.5	160.7	161.6	160.1

Source: Overseas Arrivals and Departures, Australia (3401.0).

23.8 INTERNATIONAL VISITOR ARRIVALS, By main purpose of trip—2010



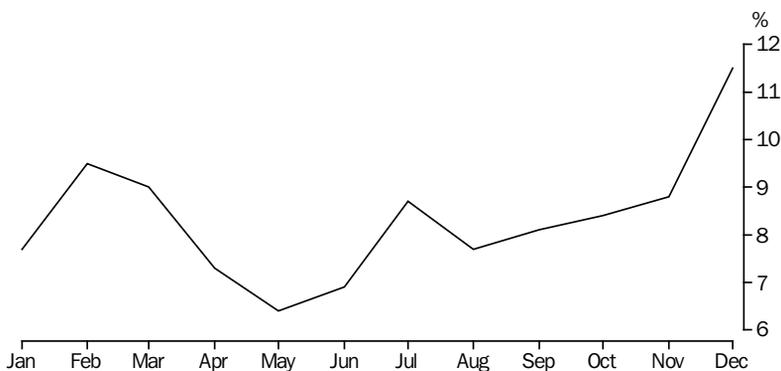
(a) Visiting friends and relatives.

(b) Includes visitors who attended a convention or conference.

(c) Includes visitors who did not state a purpose.

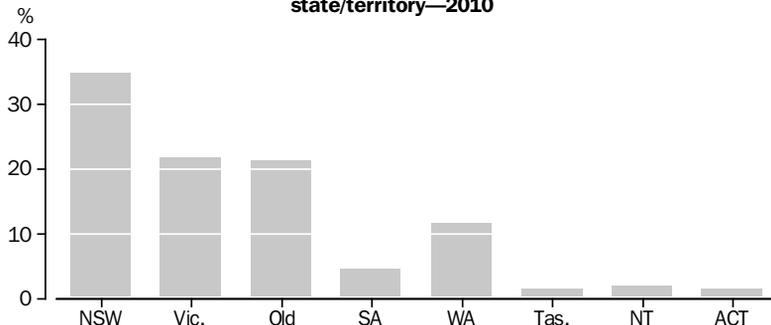
Source: Overseas Arrival and Departures, Australia (3401.0).

23.9 INTERNATIONAL VISITOR ARRIVALS, By month of visit—2010



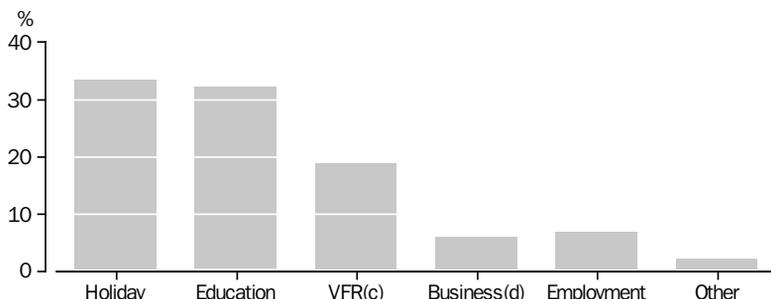
Source: Overseas Arrivals and Departures, Australia (3401.0).

23.10 SHORT-TERM INTERNATIONAL VISITOR NIGHTS(a)(b), By state/territory—2010



(a) All visitors aged 15 years and over. Includes backpackers.
 (b) Total nights are less than visitor nights in Australia because nights spent in transit are excluded.
 Source: *Tourism Research Australia, 2011, International Visitors in Australia, December 2010 Quarterly Results of the International Visitor Survey.*

23.11 SHORT-TERM INTERNATIONAL VISITOR NIGHTS(a)(b), By main purpose of trip—2010



(a) All visitors aged 15 years and over. Includes backpackers.
 (b) Total nights are less than visitor nights because nights spent in transit are excluded.
 (c) Visiting friends and relatives.
 (d) Includes visitors who attended a convention or conference.
 Source: *Tourism Research Australia, 2011, International Visitors in Australia, December 2010 Quarterly Results of the International Visitor Survey.*

Australian resident departures

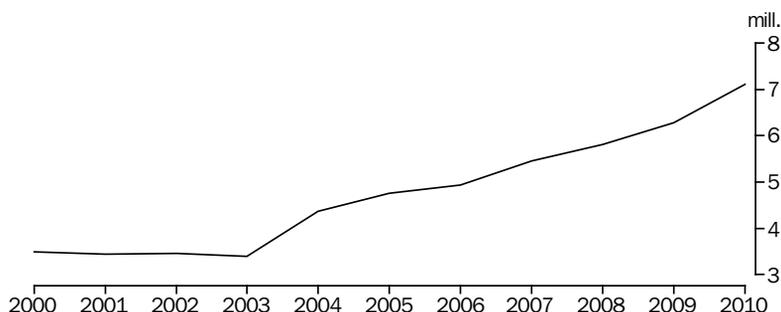
In the year ended December 2010, there were 7.1 million short-term (less than one year) resident departures (graph 23.12), an increase of 13% on the previous year.

The top destinations for Australian residents departing short-term during 2010 were New Zealand (1,064,500 departures), Indonesia (739,100), the United States of America (683,700),

the United Kingdom (457,000), and Thailand (448,200) (table 23.13).

Between 2009 and 2010, the number of short-term resident departures to all the major destinations increased. The largest increases were for Indonesia (190,600 or 35%), the United States of America (116,700 or 21%), Fiji (68,900 or 28%), China (excludes SARs and Taiwan) (57,800 or 21%) and Thailand (55,900 or 14%).

23.12 SHORT-TERM MOVEMENTS(a), Resident departures



(a) Statistics on departures relate to the number of movements of travellers rather than the number of travellers. Multiple movements of travellers in a given year are counted separately.

Source: *Overseas Arrivals and Departures, Australia (3401.0)*.

23.13 SHORT-TERM RESIDENT DEPARTURES, By major destinations

	2006 '000	2007 '000	2008 '000	2009 '000	2010 '000
New Zealand	864.7	902.1	921.1	1 033.3	1 064.5
Indonesia	194.9	282.6	380.7	548.5	739.1
United States of America	440.3	479.1	492.3	567.0	683.7
United Kingdom	412.8	428.5	420.3	442.6	457.0
Thailand	288.0	374.4	404.1	392.3	448.2
China (excludes SARs and Taiwan)	251.0	284.3	277.3	278.8	336.6
Fiji	202.4	200.3	236.2	242.2	311.1
Singapore	210.9	221.5	217.8	226.8	259.4
Malaysia	168.0	181.3	191.0	227.4	245.0
Hong Kong (SAR of China)	196.3	206.5	213.1	206.1	214.1

Source: *Overseas Arrivals and Departures, Australia (3401.0)*.

Visitor travel in Australia

Day visitors

Day visitors are those who travel for a round trip distance of at least 50 kilometres, are away from home for at least four hours, and who do not spend a night away from home as part of their travel. Same-day travel as part of overnight travel is excluded, as is routine travel such as commuting between work, school and home.

During the year ended 31 December 2010, there were 151 million day visitors in Australia (Australian residents aged 15 years and over), an increase of 5% from 144 million day visitors in 2009 (table 23.14).

In 2010, 49% of day trips were for holiday/leisure purposes, 29% were to visit friends and/

or relatives and 10% were for business purposes (graph 23.15).

In 2010, New South Wales received the most day visitors (32%), followed by Victoria (26%) and Queensland (23%) (graph 23.16).

Visitor nights

Domestic overnight travel involves a stay away from home for at least one night, at a place at least 40 kilometres from home. A person is an overnight visitor to a location if they stay one or more nights in the location while travelling.

Australians spent 260 million nights away from home during 2010 (table 23.17). This was an increase of 1% compared with 2009, but still a drop of 10% compared with the 289 million nights spent away from home during 2007.

23.14 DAY VISITORS(a), By state/territory visited

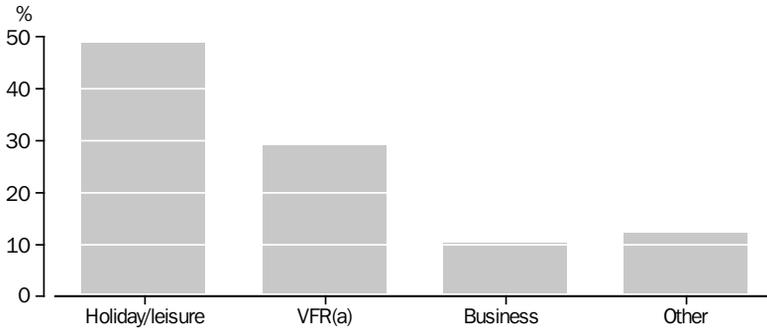
	NSW '000	Vic. '000	Qld '000	SA '000	WA '000	Tas. '000	NT '000	ACT '000	Aust.(b) '000
2006	44 229	32 158	28 422	10 463	12 455	4 417	967	1 351	134 464
2007	48 472	36 074	31 614	10 571	13 762	4 608	956	1 680	147 737
2008	44 262	34 592	28 558	9 571	12 140	4 170	940	1 410	135 642
2009	46 546	37 877	31 575	9 848	11 558	4 496	1 026	1 467	144 393
2010	49 071	38 569	34 705	10 108	12 043	4 311	866	1 615	151 288

(a) Australian residents aged 15 years and over.

(b) Components may not add to total as total includes unspecified and offshore visits that could not be allocated to a state or territory.

Source: *Tourism Research Australia, 2011, Travel by Australians, December 2010 Quarterly Results of the National Visitor Survey.*

23.15 DAY VISITORS(a), By main purpose of visit—2010

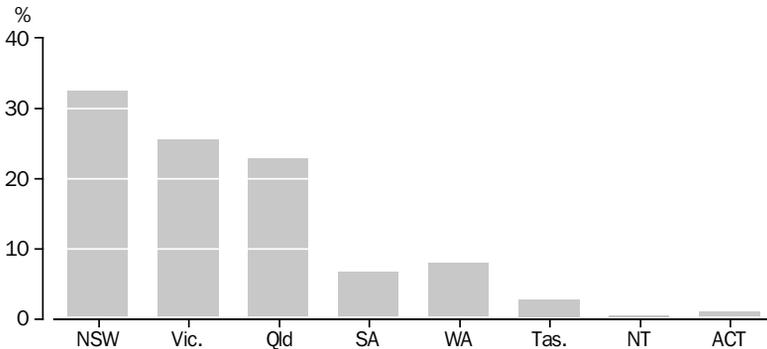


(a) Australian residents aged 15 years and over.

(b) Visiting friends and relatives.

Source: *Tourism Research Australia, 2011, Travel by Australians, December 2010 Quarterly Results of the National Visitor Survey.*

23.16 DAY VISITORS(a), By state/territory visited—2010



(a) Australian residents aged 15 years and over.

Source: *Tourism Research Australia, 2011, Travel by Australians, December 2010 Quarterly Results of the National Visitor Survey.*

23.17 VISITOR NIGHTS(a), By state/territory visited

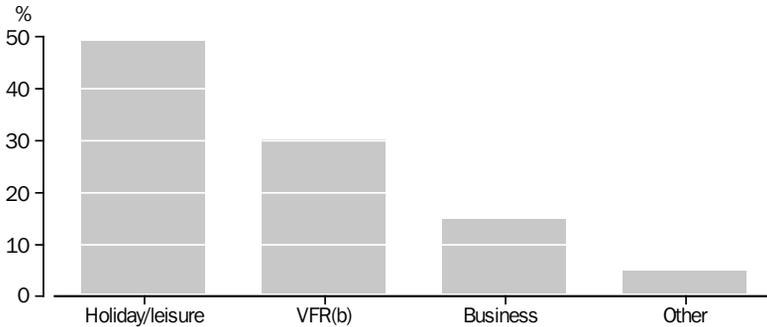
	NSW '000	Vic. '000	Qld '000	SA '000	WA '000	Tas. '000	NT '000	ACT '000	Aust.(b) '000
2006	86 197	53 452	75 210	19 075	29 671	9 434	6 877	5 612	285 661
2007	83 176	53 244	77 069	19 107	32 684	10 219	7 159	5 844	288 603
2008	81 644	52 070	72 187	18 654	26 914	8 433	6 579	5 222	271 778
2009	76 991	49 451	69 779	18 248	22 492	8 686	6 244	4 649	256 680
2010	78 330	49 406	71 208	16 989	23 597	8 148	6 273	5 574	259 541

(a) Australian residents aged 15 years and over.

(b) Total includes unspecified and offshore visits that could not be allocated to a state or territory.

Source: Tourism Research Australia, 2011, *Travel by Australians, December 2010 Quarterly Results of the National Visitor Survey*.

23.18 VISITOR NIGHTS(a), By main purpose of visit—2010

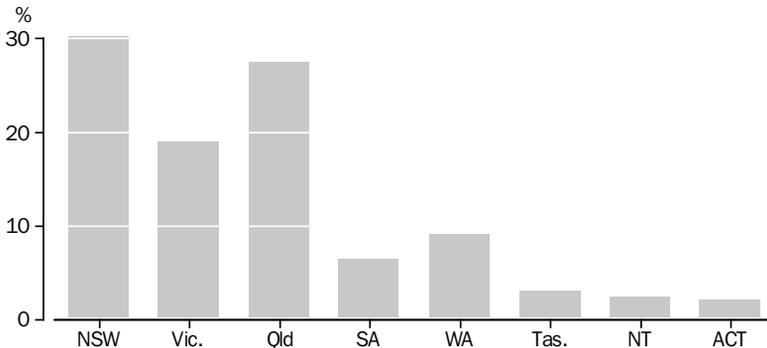


(a) Australian residents aged 15 years and over.

(b) Visiting friends and relatives.

Source: Tourism Research Australia, 2011, *Travel by Australians, December 2010 Quarterly Results of the National Visitor Survey*.

23.19 VISITOR NIGHTS (a), By state/territory visited—2010



(a) Australian residents aged 15 years and over.

Source: Tourism Research Australia, 2011, *Travel by Australians, December 2010 Quarterly Results of the National Visitor Survey*.

Overnight travellers who had holiday or leisure as their main purpose of visit accounted for the majority of domestic visitor nights in 2010 (49%), followed by those travelling to visit friends and/or relatives (30%) and for business purposes (15%) (graph 23.18).

In 2010, overnight visitors spent the highest proportion of nights in New South Wales (30%), followed by Queensland (27%) and Victoria (19%) (graph 23.19).

International comparisons

Information on international tourism is compiled and published by the World Tourism Organization (UNWTO), a United Nations agency.

Data for this section were provided by Tourism Research Australia.

In terms of international visitor arrivals in 2010, Australia ranked 41st in the world (table 23.20), with 5.9 million arrivals. This comprised 0.6% of the world total. The two highest ranked countries were France, with 76.8 million arrivals, and the United States of America with 59.8 million arrivals.

Australia ranks somewhat higher, in world terms, for tourism receipts. In 2010, Australia was ranked 8th in the world (table 23.21), receiving estimated tourism spending of US\$29.6 billion, which makes up around 3.2% of global tourism receipts. The two highest ranked countries were the United States of America, with US\$103.5 billion, and Spain with US\$52.5 billion.

23.20 GLOBAL TOURIST ARRIVALS—2010

Rank	Country	Arrivals(a)	Change on 2009	Share
		millions	%	%
1	France	76.8	0.0	8.2
2	United States of America	59.8	8.8	6.4
3	China (excludes SARs and Taiwan)	55.7	9.4	5.9
4	Spain	52.7	1.0	5.6
5	Italy	43.6	0.9	4.6
6	United Kingdom	28.3	0.3	3.0
7	Turkey	27.0	5.9	2.9
8	Germany	26.9	10.9	2.9
9	Malaysia	24.6	3.9	2.6
10	Mexico	22.3	3.8	2.4
11	Austria	22.0	3.0	2.3
12	Ukraine	21.2	1.9	2.3
13	Russia	20.3	4.4	2.2
14	Hong Kong (SAR of China)	20.1	18.7	2.1
15	Canada	16.1	2.3	1.7
41	Australia	5.9	5.4	0.6
	World	940.0	6.6	

(a) Data collection methodologies vary, with most of the countries shown in the table measuring the number of visitors arriving at frontiers (excluding same-day visitors).

Source: UNWTO *World Tourism Barometer, Statistical Annex, Volume 9, October 2011*, see Table: *International Tourist Arrivals by Country of Destination*.

23.21 GLOBAL TOURISM RECEIPTS—2010

Rank	Country	Receipts	Change on 2009	Share
		billion US\$	%	%
1	United States of America	103.5	9.9	11.2
2	Spain	52.5	3.9	5.7
3	France	46.6	-1.1	5.0
4	China (excludes SARs and Taiwan)	45.8	15.5	4.9
5	Italy	38.8	1.4	4.2
6	Germany	34.7	5.3	3.7
7	United Kingdom	32.4	8.4	3.5
8	Australia	29.6	-0.8	3.2
9	Macau (SAR of China)	27.8	53.5	3.0
10	Hong Kong (SAR of China)	22.2	35.4	2.4
11	Turkey	20.8	-2.1	2.2
12	Thailand	19.8	16.6	2.1
13	Austria	18.6	0.9	2.0
14	Malaysia	18.3	5.9	2.0
15	Canada	15.7	3.1	1.7
	World	926.0	8.8	

Source: UNWTO World Tourism Barometer, Statistical Annex, Volume 9, October 2011, see Table: International Tourism Receipts.

Farm visits in Australia

In 2012, Australia celebrates the Australian Year of the Farmer. This special article recognises the year by looking at the link between tourism and Australian farms.

Each year thousands of visitors, both international and domestic, visit Australian farms. The International Visitor Survey (IVS) and the National Visitor Survey (NVS) both capture information on the number and type of people who participate in the activity 'visiting a farm' whilst travelling.

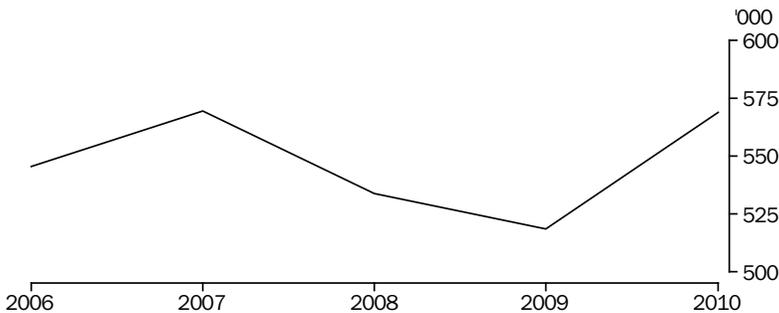
International visitors

In 2010, there were 569,000 international visitors who visited Australian farms, representing 10% of international visitor arrivals. This was an increase of 50,300 since 2009 (graph S23.1). The main source countries for international visitors to

farms were China (excludes SARs and Taiwan) (108,000) and the United Kingdom (67,800) (table S23.2). Of all countries, visitors from China were the most likely to visit farms while travelling (25% of all Chinese visitors), followed by Taiwan (22%) and Korea, Republic of (South) (20%).

In 2010, the main purpose of the trip for international visitors who visited farms, was holidays (60%), followed by visiting friends and relatives (18%) and education (11%) (graph S23.3). Of all international visitors who visited Australia for educational purposes, 15% visited farms. Almost two-thirds (62%) of international visitors to farms were aged 15–44 years.

S23.1 INTERNATIONAL VISITORS(a), Visited farms



(a) All visitors aged 15 years and over. Includes backpackers.

Source: Tourism Research Australia, 2011, *International Visitors in Australia*, December quarter 2010.

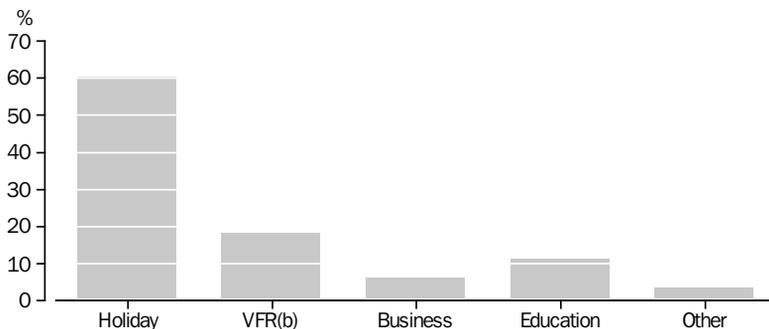
S23.2 INTERNATIONAL VISITORS TO FARMS(a), By major source countries

	2006	2007	2008	2009	2010
	'000	'000	'000	'000	'000
China (excludes SARs and Taiwan)	66.5	87.2	76.2	77.9	108.0
United Kingdom	82.4	69.7	67.2	70.9	67.8
Korea, Republic of (South)	55.7	51.2	39.2	30.1	40.4
United States of America	43.0	38.3	41.4	39.6	34.9
Singapore	29.6	31.8	33.6	29.8	31.0
New Zealand	29.2	34.6	30.8	29.6	29.9
Malaysia	16.4	19.8	22.7	28.3	27.1
Germany	25.6	26.4	24.5	22.7	25.5
Japan	38.1	32.0	28.8	22.6	21.0
Taiwan	13.3	18.8	14.9	13.1	17.7

(a) All visitors aged 15 years and over. Includes backpackers.

Source: Tourism Research Australia, 2011, *International Visitors in Australia*, December quarter 2010.

S23.3 INTERNATIONAL VISITORS TO FARMS(a), By main purpose of trip—2010



(a) All visitors aged 15 years and over. Includes backpackers.

(b) Visiting friends and relatives.

Source: *Tourism Research Australia, 2011, International Visitors in Australia, December quarter 2010.*

Domestic overnight visitors

In 2010, there were 931,000 domestic overnight travellers who visited farms, representing 1.4% of overnight visitors. This was a decrease of 80,000 from 2009 and a decrease of 207,000 since 2006 (graph S23.4). Almost half (48%) of overnight visitors to farms in 2010 travelled for the purposes of holiday or leisure, and 44% travelled to visit friends and relatives.

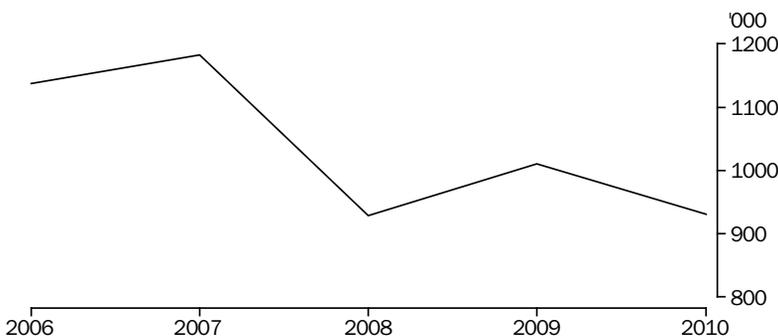
New South Wales received the most visitors to farms (36%) followed by Victoria (22%) and Queensland (18%) (graph S23.5). In 2010,

almost half (46%) of overnight visitors were aged 15–44 years.

Domestic day visitors

During the year ended 2010, there were 1.0 million domestic day trips to farms, which accounted for less than 1% of domestic day visitors. This was a decrease of 119,000 from 2009 (graph S23.6). In 2010, of all day visitors who visited farms, the main purpose of their visit was for holiday or leisure (60%), followed by visiting friends and relatives (29%).

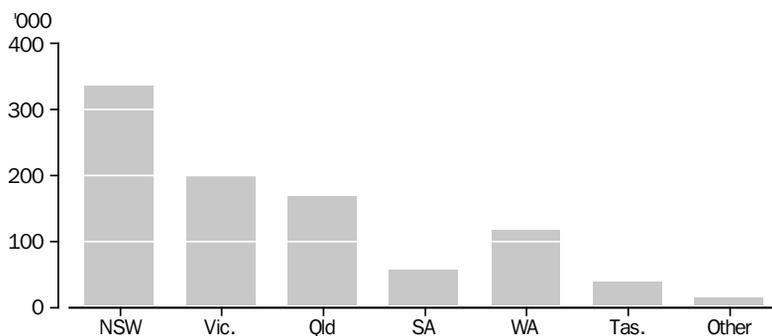
S23.4 OVERNIGHT VISITORS(a), Visited farms



(a) Australian residents aged 15 years and over.

Source: *Tourism Research Australia, 2011, Travel by Australians, December quarter 2010.*

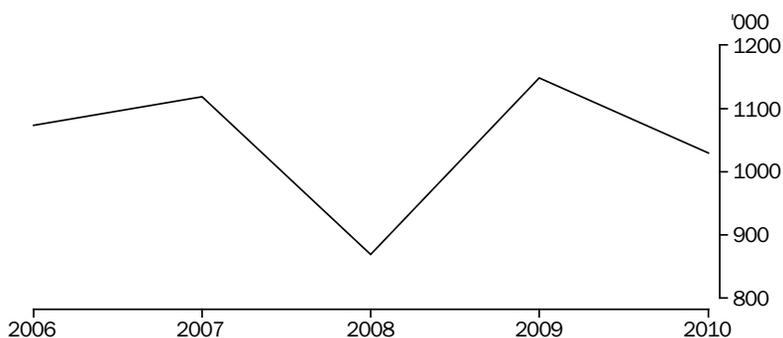
S23.5 OVERNIGHT VISITORS, VISITED FARMS(a), By state/territory visited—2010



(a) Australian residents aged 15 years and over.

Source: Tourism Research Australia, 2011, *Travel by Australians*, December quarter 2010.

S23.6 DAY VISITORS(a), Visited farms



a) Australian residents aged 15 years and over.

Source: Tourism Research Australia, 2011, *Travel by Australians*, December quarter 2010.

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TRANSPORT

Transport activity involves the movement of goods or people from an origin to a destination. It is a fundamental activity of all economies, connecting businesses to markets and to supplies of inputs. For example, building construction is reliant on transport to get materials and labour to sites. Retailers rely on transport to bring items from suppliers, and to bring customers to their shops. Complex and specialised transport services, such as those used for perishable foods, may cross several countries and include corridors of road, rail, sea and air journeys. A substantial part of people's time and income is used for travel to work, school, recreation and other activities.

Transport activity has considerable economic, social and environmental impact. Effective transport systems contribute to economic prosperity, as well as benefits to the community that arise through access to a greater range of options – for places to live and work, shop and take holidays. Information about aspects of transport activity is used by governments, local authorities and industry, to support planning and investment decisions.

This chapter provides information on Australia's domestic and international transportation systems, including statistics on transport activity and the incidence of transport-related accidents, injuries and fatalities. Data are drawn from Australian Bureau of Statistics (ABS) collections and other sources, including the Department of Infrastructure and Transport, Australian Transport Safety Bureau, Civil Aviation Safety Authority, Bureau of Infrastructure, Transport and Regional Economics and the Australasian Railway Association Inc.

Information on use of energy by transport can be found in *19 Energy*.

More information on the Transport, postal and warehousing industry can be found in chapters *8 Labour*, *15 Industry structure and performance*, *25 Information and communication technology* and *26 Research and innovation*.

Transport, postal and warehousing industry

The transport, postal and warehousing industries are vital to the Australian economy, underpinning a diverse range of industries and activities. These range from transporting and storing freight, to the movement of people by private and public transport, to vehicle hire and the use of pipelines.

The contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP), is measured by gross value added (GVA). Information on the relationship between industry GVA and GDP is provided in the *Industry structure and performance* chapter.

Table 24.1 shows the GVA (in volume terms) for each industry subdivision (as defined in

the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006*) within the Transport, postal and warehousing industry. Between 2008–09 and 2009–10, the industry's GVA rose by 2%.

All industry subdivisions except Air and space transport had increases in GVA (in volume terms) between 2008–09 and 2009–10. Road transport recorded the greatest increase in GVA (4%), while Air and space transport decreased by 1%.

Table 24.2 shows employment for the Transport, postal and warehousing industry. Between 2008–09 and 2009–10, the industry's total employment decreased from 595,600 to 578,700 people. Road transport decreased by 15,700 (6.4%), and Postal and courier pick-up and delivery services fell 6,700 (6.4%). Over the same period, Transport support services rose 5,600 (8.7%).

24.1 TRANSPORT, POSTAL AND WAREHOUSING INDUSTRY(a), Gross value added(b)

ANZSIC Subdivision	2008–09	2009–10
	\$m	\$m
Road transport	19 754	20 540
Air and space transport	4 947	4 894
Rail and other transport(c)	8 953	9 006
Transport services and storage(d)	26 222	26 878
Total Transport, postal and warehousing	59 876	61 318

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Volume measures where estimates are valued using prices of the reference year. Reference year is 2008–09.

(c) Includes Subdivisions Rail transport and Other transport.

(d) Includes Subdivisions Water transport, Postal and courier pick-up and delivery services, Transport support services and Warehousing and storage services.

Source: *Australian System of National Accounts (5204.0)*.

24.2 TRANSPORT, POSTAL AND WAREHOUSING INDUSTRY(a), Employment(b)

ANZSIC Subdivision	2008–09	2009–10
	'000	'000
Road transport	245.9	230.2
Rail transport	46.8	48.7
Water transport	8.7	9.4
Air and space transport	52.7	46.8
Other transport	10.0	10.8
Postal and courier pick-up and delivery services	104.5	97.8
Transport support services	64.7	70.3
Warehousing and storage services	48.0	45.0
Transport, postal and warehousing n.f.d.(c)	14.3	19.7
Total Transport, postal and warehousing	595.6	578.7

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(b) Annual average of quarterly data.

(c) Not further defined. Insufficient detail collected from survey respondent to allocate data to a specific industry code.

Source: *Labour Force, Australia, Detailed, Quarterly (6291.0.55.003)*.

24.3 TRANSPORT, POSTAL AND WAREHOUSING INDUSTRY, Selected indicators

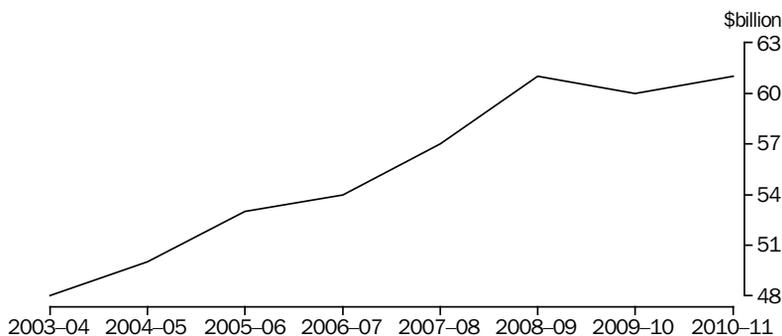
		2008–09	2009–10
Sales and service income(a)	\$m	117 788	121 068
Operating profit before tax	\$m	11 575	10 491
Capital expenditure(b)	\$m	17 784	20 136
Industry value added	\$m	49 448	52 260
Profit margin	%	9.8	8.7
Business profitability			
Businesses that made a profit	%	83.2	81.4
Businesses that broke even	%	2.3	1.3
Businesses that made a loss	%	14.4	17.2

(a) Includes rent, leasing and hiring income.

(b) Includes capital work done for own use.

Source: *Australian Industry* (8155.0).

24.4 TRANSPORT, POSTAL AND WAREHOUSING PRODUCTION(a)(b)



(a) Industry gross value added. (b) Volume measures. Reference year is 2008–09.

Source: *Australian System of National Accounts* (5204.0).

In 2009–10, the Transport, postal and warehousing industry generated \$121,068 million in sales and service income (table 24.3). Capital expenditure in 2009–10 was \$20,136 million, and industry value added \$52,260 million. Operating profit before tax was \$10,491 million, while the profit margin for the industry was 8.7% in 2009–10. The majority of businesses made a profit in 2009–10 (81%), while 17% made a loss.

Transport, postal and warehousing industry production (in volume terms) increased by 27% between 2003–04 and 2010–11 (graph 24.4).

Wages and salaries for the Transport, postal and warehousing industry in 2009–10 were \$26,846 million. Total income was \$131,775 million, total expenses \$121,426 million, while operating profit before tax was \$10,491 million (table 24.5). Road transport was the largest component industry, with 37% of the industry's wages and salaries, 43% of operating profit before tax, 35% of total income and 35% of total expenses.

Transport satellite account

The System of National Accounts (SNA) consists of a coherent, consistent and integrated set of macroeconomic accounts, balance sheets and tables based on a set of internationally agreed concepts, definitions, classifications and accounting rules. While the SNA is comprehensive within the boundaries of what it measures, there are increasing demands for additional details or alternative views of various activities in the Australian economy. The SNA recognises the need for flexibility in implementing the framework to enable analysis beyond the core national accounts, and provides examples of ways in which flexibility can be applied to meet these demands. From an industry point of view, one of the key concepts of the SNA is the contribution of an industry to the overall production of goods and services in an economy, gross domestic product (GDP). This is measured by gross value added (GVA).

24.5 TRANSPORT, POSTAL AND WAREHOUSING INDUSTRY, Selected performance measures—2009–10

Selected indicators		ANZSIC SUBDIVISION						Postal and courier pick-up and delivery services	Warehousing and storage services	Total
		Road transport	Rail transport	Water transport	Air and space transport	Other transport	Transport support services			
Wages and salaries	\$m	10 042	3 170	636	3 487	470	3 205	4 667	1 169	26 846
Total income	\$m	46 513	12 716	3 335	20 051	3 580	10 401	29 032	6 147	131 775
Total expenses	\$m	42 013	12 191	3 130	20 041	3 353	9 676	25 657	5 365	121 426
Operating profit before tax	\$m	^ 4 506	559	^ 207	**52	^ 232	^ 720	^ 3 437	^ 778	^ 10 491

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

Source: *Australian Industry* (8155.0).

Satellite accounts provide a more comprehensive measure of a particular economic activity through a consistent treatment of all components of that activity throughout the economy. For example, the Transport, postal and warehousing industry in the core national accounts consists of businesses where the primary activity is in transport and/or storage. Significant transport activity occurs outside of this industry, for example in Mining, Construction and Agriculture. This activity will be covered by the estimates in the national accounts for these industries, rather than the Transport, postal and warehousing industry. While only an indicative measure of the total amount of transport activity, results from the 2009–10 Economic Activity Survey suggest significant transport activity occurring outside of the Transport, postal and warehousing industry. For example, in 2009–10, approximately 48% of business expenditure on fuel to power vehicles and 55% of business expenditure on transport and motor vehicle running expenses occurred outside of the Transport, postal and warehousing industry.

An Australian transport satellite account (TrSA) presents the opportunity to extend the focus of the core national accounts to a more detailed analysis of transport activity, using additional information from other sources of transport data. A TrSA would cover transport activities conducted on a for-hire basis (which are primarily undertaken by businesses classified to the Transport, postal and warehousing industry in the core national accounts) as well as transport activity conducted by businesses in all industries for their own use. A TrSA would provide a unified picture of the impact of transport activity on the whole economy. Transport GVA and GDP would be major economic aggregates derived from a

TrSA, which would also present the opportunity to link monetary estimates of transport activity (e.g. expenditure on fuels) with non-monetary data (e.g. kilometres travelled and/or emissions).

The ABS has funded the development and collection of an additional set of transport statistics relating to the 2010–11 financial year, and has prepared a detailed outline of a TrSA framework. More information on ABS views of what a future Australian TrSA might look like is included in: *Information Paper: A Future Australian Transport Satellite Account: ABS Views, 2011* (5269.0.55.001), which was released on 20 October 2011. This paper provides background to ABS research, explains the concept of a satellite account and describes the potential policy uses as well as the benefits that could be expected to result from the availability of a TrSA.

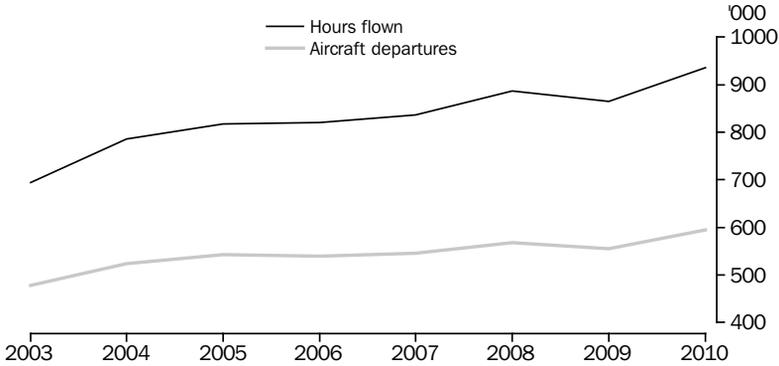
Transport activity

Domestic airline activity

The total hours flown and the number of aircraft departures by the major domestic and regional airlines are shown in graph 24.6. In 2010, there were 935,000 hours flown, while aircraft departures totalled 595,000, representing increases of 35% and 24% respectively since 2003.

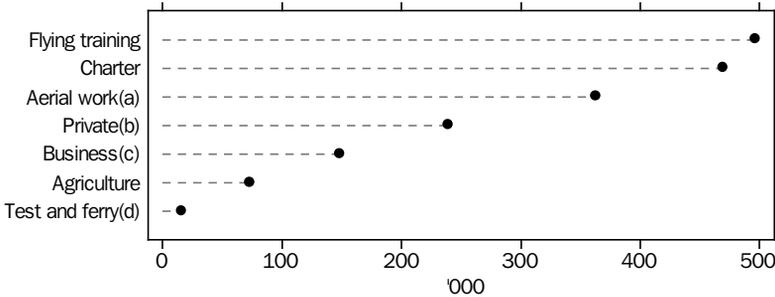
In addition to domestic and regional scheduled services, activities undertaken by the general aviation industry include private and business flying, agriculture, charter, training and test and ferry flying (graph 24.7). Flying training, charter and aerial work together accounted for 74% of general aviation hours flown in 2009.

24.6 DOMESTIC AIRLINE ACTIVITY, Major and regional airlines



Source: Bureau of Infrastructure, Transport and Regional Economics.

24.7 GENERAL AVIATION ACTIVITY, Hours flown—2009



- (a) Aerial work includes all survey and photography, spotting, stock mustering, search and rescue, ambulance, towing (including glider, target and banner towing) and other aerial work (including advertising, cloud seeding, fire fighting and coastal surveillance).
 (b) Flying for private pleasure, sport or recreation, including parachute dropping, or personal transport not associated with a business or profession (including Angel flights).
 (c) Flying associated with a business or profession, but not directly for hire or reward.
 (d) Test and ferry flying is associated with the testing of an aircraft or with its delivery or movement to a location for maintenance, hire or other planned use.

Source: Bureau of Infrastructure, Transport and Regional Economics.

Road transport activity

Motor vehicles travelled an estimated total distance of 226,632 million kilometres in the year ended 31 October 2010, at an average of 14,900 kilometres per vehicle (table 24.8). Business use accounted for an estimated 35% of aggregate distance travelled and private use accounted for 65%. Of total private use travel, 36% consisted of travel to and from work and 64% was for personal and other use.

The localities in which motor vehicles travelled are described in table 24.9. Only 5% of total distance travelled represented interstate trips,

while 55% of distance travelled was within the capital city of the state or territory in which the vehicle was registered.

Registered motor vehicles in Australia consumed an estimated 31,186 million litres of fuel in the 12 months ended 31 October 2010 (table 24.10). Of the total fuel consumed by motor vehicles in this period, 58% was petrol and 36% was diesel.

Passenger vehicles used 15,497 million litres of petrol in the 12 months to 31 October 2010. This was 84% of all fuel used by passenger vehicles. Only 8% of passenger vehicle fuel used was diesel.

24.8 BUSINESS AND PRIVATE VEHICLE USE—Year ended 31 October 2010

Type of vehicle	BUSINESS			PRIVATE		Total
	Laden	Unladen	Total(a)	To and from work	Personal and other use	
TOTAL DISTANCE TRAVELLED (mill. km)						
Passenger vehicles	—	—	37 047	43 732	82 581	163 360
Motor cycles	—	—	*186	644	1 564	2 394
Light commercial vehicles	17 035	6 916	23 951	9 023	9 741	42 715
Rigid trucks	6 079	2 582	8 661	^ 195	^ 155	9 011
Articulated trucks	5 000	1 905	6 905	10	*2	6 917
Non-freight carrying trucks	—	—	205	**6	**—	210
Buses	—	—	1 899	22	104	2 024
Total	28 114	11 403	78 853	53 631	94 147	226 632
AVERAGE DISTANCE TRAVELLED(b) ('000 km)						
Passenger vehicles	—	—	9.9	6.8	7.8	13.9
Motor cycles	—	—	3.2	3.2	3.6	4.7
Light commercial vehicles	13.1	7.9	16.9	8.5	7.5	18.4
Rigid trucks	16.3	9.0	23.1	5.4	4.2	22.6
Articulated trucks	66.5	28.7	91.0	3.8	*2.2	90.8
Non-freight carrying trucks	—	—	10.7	**7.5	**0.5	11.0
Buses	—	—	30.4	5.1	10.4	29.1
Total	16.1	9.3	13.7	7.0	7.6	14.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Includes business travel of non-freight carrying vehicles.

(b) Average distance travelled for registered vehicles which were used.

Source: Survey of Motor Vehicle Use, Australia (9208.0).

24.9 LOCATION OF VEHICLE OPERATION—Year ended 31 October 2010

Type of vehicle	WITHIN STATE/TERRITORY OF REGISTRATION			Total	Interstate	Australia
	Capital city	Provincial urban	Other areas of state/territory			
TOTAL DISTANCE TRAVELLED (mill. km)						
Passenger vehicles	95 619	30 787	31 400	157 806	55 555	163 360
Motor cycles	1 090	428	540	2 058	*335	2 394
Light commercial vehicles	19 726	8 324	12 501	40 572	2 143	42 715
Rigid trucks	4 989	1 342	2 334	8 665	346	9 011
Articulated trucks	1 365	558	3 097	5 020	1 896	6 917
Non-freight carrying trucks	109	37	58	204	**7	210
Buses	1 026	379	553	1 958	67	2 024
Total	123 924	41 854	50 483	216 283	10 349	226 632
AVERAGE DISTANCE TRAVELLED(a) ('000 km)						
Passenger vehicles	10.8	7.7	9.0	13.5	6.1	13.9
Motor cycles	3.9	2.3	3.0	4.1	7.9	4.7
Light commercial vehicles	15.0	9.4	13.0	17.7	9.7	18.4
Rigid trucks	22.8	11.9	13.8	22.0	14.6	22.6
Articulated trucks	31.4	19.3	59.1	68.4	86.8	90.8
Non-freight carrying trucks	15.0	8.1	6.6	10.9	*10.1	11.0
Buses	26.7	16.2	19.6	28.4	16.2	29.1
Total	11.5	8.0	10.3	14.4	8.4	14.9

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Average distance travelled for registered vehicles which were used.

Source: Survey of Motor Vehicle Use, Australia (9208.0).

24.10 MOTOR VEHICLE FUEL CONSUMPTION—Year ended 31 October 2010

Type of fuel	TYPE OF VEHICLE							Total
	Passenger vehicles	Motor cycles	Light commercial vehicles	Rigid trucks	Articulated trucks	Non-freight carrying trucks	Buses	
TOTAL FUEL CONSUMPTION (million litres)								
Petrol	15 497	146	2 410	23	**—	*1	31	18 108
Diesel	1 550	**1	2 665	2 497	3 837	58	496	11 087
LPG/CNG/dual fuel/hybrid	1 384	—	471	*16	*47	**2	71	1 992
Total	18 431	147	5 546	2 519	3 884	61	598	31 186
AVERAGE RATE OF FUEL CONSUMPTION(a) (litres per 100 kilometres)								
Petrol	11.1	6.1	13.6	21.3	**47.6	16.2	15.4	11.3
Diesel	11.4	**14.5	12.2	28.0	56.0	29.5	30.0	20.9
LPG/CNG/dual fuel/hybrid	13.6	—	15.1	*28.8	79.2	24.2	41.2	14.7
Total	11.3	6.1	13.0	28.0	56.2	29.0	29.5	13.8

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Calculated using the total fuel consumption divided by the total kilometres travelled.

Source: Survey of Motor Vehicle Use, Australia (9208.0).

A total of 6,334 million litres of diesel was used by articulated and rigid trucks. This was 57% of all diesel used. Light commercial vehicles used 2,665 million litres, which was 24% of all diesel.

The average rate of fuel consumption for all motor vehicles in the 12 months ended 31 October 2010 was 13.8 litres per 100 kilometres. Articulated trucks had the highest average fuel consumption with 56.2 litres per 100 kilometres, followed by buses with 29.5 litres per 100 kilometres and non-freight carrying trucks with 29.0 litres per 100 kilometres. The average fuel consumption rate for passenger vehicles was 11.3 litres per 100 kilometres.

In March 2003, the Federal Chamber of Automotive Industries (FCAI) adopted a voluntary target aimed at progressively improving fuel consumption for new petrol passenger vehicles to an average of 6.8 litres per 100 kilometres by 2010.

In mid 2005, to reflect the need to reduce carbon emissions, a new industry target was established to reduce average carbon dioxide (CO₂) emissions for all new light vehicles (less than 3.5 tonnes gross mass) to 222 grams of CO₂ per kilometre by 2010. This target incorporates a significant range of vehicles (cars, SUVs and light trucks, etc.) and all fuel types (petrol, diesel, LPG, etc.).

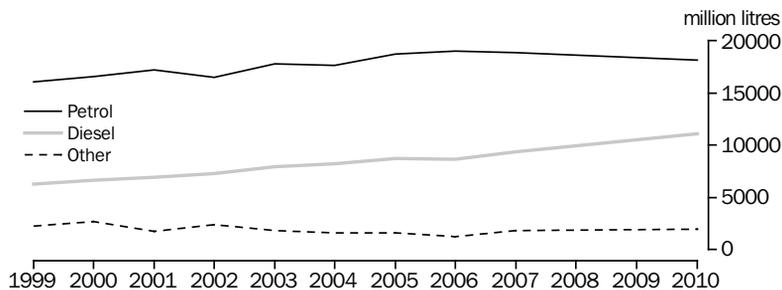
Over recent years, there has been a continuous improvement in average new vehicle emissions. From an estimated 252 grams of CO₂ per kilometre in 2002, national average carbon emissions (NACE) for all new light vehicles sold in Australia for 2010 was 212.6 grams of CO₂ per kilometre. This decline in carbon emissions of new vehicles was well below the voluntary target of 222 grams of CO₂ per kilometre set five years earlier.

Graph 24.11 shows the total fuel consumption of registered vehicles for the yearly collection periods of the ABS Survey of Motor Vehicle Use for 1999 to 2010.

Between 1999 and 2010, total consumption for all types of petrol rose from 16,026 million litres to 18,108 million litres, a rise of 13%. Over the same period, the consumption of diesel fuel rose from 6,285 million litres to 11,087 million litres, an increase of 76%, while the use of other fuel types fell by 10%, from 2,221 million litres in 1999 to 1,992 million litres in 2010.

Table 24.12 shows the sales of petroleum products for Australia for the years 1990 to 2010. Sales of automotive gasoline (petrol) in 2010 totalled 18,668 million litres, an increase of 1,517 million litres or 8.8%, compared with total sales of 17,151 million litres in 1990.

24.11 TOTAL FUEL CONSUMPTION(a), Type of fuel(b)



(a) 1999 data are for year ended 31 July. Other years are year ended 31 October.

(b) Other fuel consists of LPG/CNG/dual fuel for 1999 to 2006. For 2007 it is these fuels plus hybrid.

Source: Survey of Motor Vehicle Use (9208.0).

Unleaded petrol was introduced into the Australian market at the start of 1986 to reduce the toxicity of emissions into the atmosphere from motor vehicle engines. The use of unleaded petrol allowed catalytic converters to be fitted to, and used by, the motor vehicles which were

sold in Australia from 1986, as the lead in leaded petrol (used as an engine anti-knock agent and valve seat lubricant) contaminates the converter and prevents it from treating the engine's exhaust gases.

24.12 SALES OF PETROLEUM PRODUCTS

AUTOMOTIVE GASOLINE

	Unleaded million litres	Premium unleaded million litres	Proprietary brand(a) million litres	Leaded or lead replacement(b) million litres	E10(c) million litres	Total million litres	Automotive diesel fuel million litres
1990	5 219.0	na	na	11 932.0	na	17 151.0	10 022.0
1991	6 022.0	na	na	10 858.0	na	16 880.0	9 783.9
1992	6 853.0	na	na	10 256.0	na	17 109.0	10 053.4
1993	7 857.0	na	na	9 569.0	na	17 426.0	10 538.1
1994	9 343.8	na	na	8 339.8	na	17 683.6	11 050.7
1995	10 297.5	na	na	7 451.5	na	17 749.0	11 453.5
1996	11 186.0	na	na	6 781.5	na	17 967.5	12 133.4
1997	11 982.2	na	na	5 914.5	na	17 896.7	12 574.1
1998	12 888.0	na	na	5 123.1	na	18 011.1	12 616.9
1999	14 028.7	na	na	4 374.6	na	18 403.3	13 207.1
2000	14 751.3	na	na	3 406.7	na	18 158.0	12 877.9
2001	15 795.6	na	na	2 636.1	na	18 431.7	13 274.3
2002	16 832.5	na	na	2 051.3	na	18 883.8	13 720.1
2003	18 198.9	na	na	1 406.4	na	19 605.3	14 258.8
2004	18 283.5	773.6	na	840.8	na	19 901.3	14 803.4
2005	15 885.4	2 493.6	585.6	154.7	12.1	19 131.4	15 387.3
2006	15 934.9	1 794.0	1 157.3	0.5	151.3	19 038.0	16 464.3
2007	15 623.7	1 843.7	1 406.7	0.1	495.2	19 369.5	17 550.7
2008	14 502.6	1 710.4	1 388.5	0.2	1 308.5	18 910.2	18 725.7
2009	13 350.5	1 778.9	1 657.3	0.2	1 972.4	18 759.2	18 686.6
2010	11 936.1	2 050.5	1 878.4	0.1	2 802.8	18 667.9	19 287.4

na not available

(a) Propriety brand gasoline is gasoline sold under a company brand name. Each major company typically adds proprietary additives to the basic gasoline recipe, in order to provide or enhance performance features. It is not possible to split proprietary brand fuel into unleaded and premium unleaded.

(b) Leaded petrol was phased out in Australia as at 1 January 2002 – it was replaced with alternative lead replacement petrol.

(c) E10 is a specific blend of unleaded petrol with up to 10% ethanol.

Source: Department of Resources, Energy and Tourism – Australian Petroleum Statistics.

Leaded petrol was phased out in Australia as of the first of January 2002. It was replaced with the alternative lead replacement petrol (LRP), consisting of a high octane, 96 Research Octane Number (RON) premium unleaded petrol containing a non-lead additive that protected against valve-seat recession. In 2002, sales of LRP were 2,051 million litres. The number of cars that require LRP has gradually reduced to the point that it has become effectively not viable for fuel suppliers to produce, store and distribute the fuel, and for service stations to retail it. This has resulted in a very limited availability of LRP, as it is being progressively phased out of the market. Sales of this fuel were 100,000 litres in 2010.

In 2005, sales of premium unleaded petrol, which can have a RON of 95 to 98, depending on the particular product (compared with 91 for regular unleaded petrol) were 2,494 million litres, falling to 2,051 million litres in 2010.

Unleaded petrol sales accounted for 30% of total automotive gasoline sales in 1990. By 2010, unleaded petrol accounted for 100% of total automotive gasoline sales (standard unleaded 64%, premium unleaded 11%, proprietary brand fuel 10% and E10 fuel 15%). Federal Government

legislation imposes a 10% limit on the amount of ethanol in automotive petrol.

In 2010, automotive diesel fuel sales volume was 19,287 million litres, a rise of 9,265 million litres (92%) compared with 10,022 million litres sold in 1990.

Transport passenger activity

Personal travel occurs for many reasons, including school, business, recreation and travel to and from work. While road transport accounts for the majority of domestic passenger trips undertaken, rail services are used by a considerable number of urban commuters. Air services provide for a large proportion of long distance passenger travel.

Road passenger vehicle activity

In the year ended 31 October 2010, Australia's 12.3 million registered passenger vehicles travelled an estimated 163.4 billion kilometres (table 24.13), each averaging 13,200 km. Australia's 653,186 motor cycles travelled 2.4 billion km, while the fleet of 72,509 buses travelled 2.0 billion km.

24.13 MOTOR VEHICLE USE, By state/territory of registration—2010(a)

	<i>Passenger vehicles</i>	<i>Motor cycles</i>	<i>Buses</i>
TOTAL DISTANCE TRAVELLED (mill. km)			
New South Wales	49 696	681	603
Victoria	44 968	*406	403
Queensland	32 024	787	445
South Australia	10 517	132	137
Western Australia	18 567	269	271
Tasmania	3 427	*39	52
Northern Territory	1 186	*30	np
Australian Capital Territory	2 974	49	np
Australia	163 360	2 394	2 024
NUMBER OF VEHICLES(b)			
New South Wales	3 695 202	173 305	19 789
Victoria	3 260 945	157 326	15 207
Queensland	2 439 291	151 212	16 898
South Australia	967 314	45 891	4 612
Western Australia	1 386 404	93 472	10 089
Tasmania	295 514	93 472	1 958
Northern Territory	83 414	14 116	np
Australian Capital Territory	213 177	5 922	np
Australia	12 341 262	653 186	72 509

* estimate has a relative standard error of 25% to 50% and should be used with caution

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Year ended 31 October 2010.

(b) The average number of vehicles registered for the twelve months. Includes registered vehicles that did not travel during the year.

Source: *Survey of Motor Vehicle Use, Australia (9208.0)*.

24.14 RAIL PASSENGER OPERATIONS

	URBAN		Total mill. journeys	Non-urban mill. journeys	Total mill. journeys
	Heavy rail mill. journeys	Tram and light rail mill. journeys			
2008–09	603	156	759	15	773
2009–10	602	153	755	15	770

Source: Australasian Railway Association Inc.

Rail passenger activity

The passenger operations of rail operators are shown in table 24.14. The number of urban and non-urban rail journeys remained fairly steady between 2008–09 and 2009–10. Heavy rail accounted for 80% of urban rail passenger journeys in 2009–10.

Domestic air passenger activity

At 31 December 2010, four major domestic airlines operated in Australia – Qantas, Virgin Blue, Jetstar and Tiger Airways. Regional airlines such as Regional Express Airlines (REX), Brindabella Airlines, Northwest Regional Airlines and others provided connecting services to regional airports. There were 188 security-regulated airports in Australia at the end of 2007.

Passenger departures were 7% higher in 2010, compared with 2009 (table 24.15). In both 2009 and 2010, domestic airlines accounted for 89% of total Australian domestic passenger departures, and regional airlines accounted for 11%.

The number of domestic passenger movements at the top 10 airports in Australia is shown in table 24.16. In 2010, all these airports recorded increases in passenger movements compared with 2009. The strongest growth, in percentage terms, was recorded by the Gold Coast (11%), followed by Melbourne (9%) and Sydney and Darwin (both 8%). The lowest growth was recorded by Hobart (0.4%).

International air passenger activity

Passengers arriving or departing Australia primarily travel by air.

Of total international passengers (26.8 million) carried to and from Australia in 2010, 5.5 million travelled between Australia and New Zealand and 4.0 million travelled between Australia and Singapore (table 24.17).

Graph 24.18 shows the number of international passengers who travelled through each of Australia's international airports in 2010. Sydney's share of total international passenger traffic was 43%, followed by Melbourne (22%), Brisbane (16%) and Perth (12%).

24.15 DOMESTIC AIRLINE ACTIVITY

		2009	2010
Passenger departures(a)			
Domestic airlines	'000	44 357	47 285
Regional airlines	'000	5 490	6 056
Total	'000	49 848	53 341
Other activity (domestic airlines only)			
Revenue passenger-kilometres(b)	mill.	54 079	57 623
Seat-kilometres available(c)	mill.	66 956	72 054
Percentage of vacant seat-kilometres	%	19.2	20.0

(a) The unit of measurement is traffic on board (which includes transit traffic). Includes revenue passengers only.

(b) The sum for all flights of the number of revenue passengers travelling on each flight stage multiplied by the distance between airports.

(c) The sum for all flights of the number of seats available on each flight stage multiplied by the distance between airports.

Source: Bureau of Infrastructure, Transport and Regional Economics.

24.16 DOMESTIC PASSENGER MOVEMENTS(a), Top 10 Australian airports

Airport	2009 '000	2010 '000
Sydney	22 637	24 478
Melbourne	19 945	21 728
Brisbane	14 716	15 462
Perth	6 842	7 321
Adelaide	6 383	6 779
Gold Coast	4 311	4 764
Cairns	3 242	3 398
Canberra	3 149	3 305
Hobart	1 875	1 882
Darwin	1 733	1 870

(a) The number of passengers on board arriving at or departing from each airport. Includes passengers in transit, who are counted as both arrivals and departures at airports through which they transit.

Source: Bureau of Infrastructure, Transport and Regional Economics.

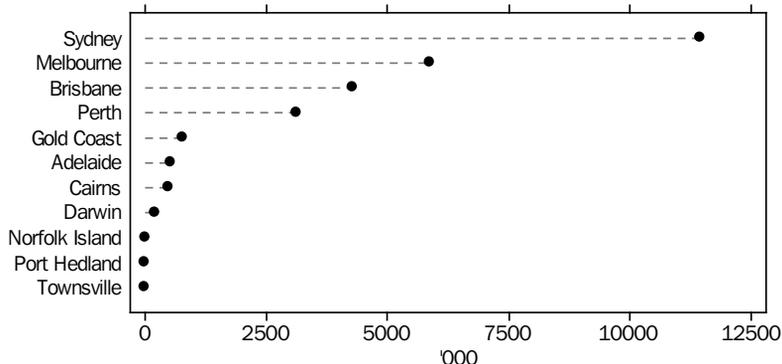
24.17 SCHEDULED INTERNATIONAL PASSENGER TRAFFIC TO AND FROM AUSTRALIA(a)—2010

Country to/from	Inbound '000 passengers	Outbound '000 passengers	Total '000 passengers
Argentina	54.9	55.4	110.3
Brunei Darussalam	77.6	78.4	156.0
Canada	80.2	80.3	160.5
Chile	30.3	29.5	59.9
China (excludes SARs and Taiwan)	452.6	447.6	900.2
Cook Islands	2.6	2.7	5.2
Fiji	376.4	376.2	752.7
France	0.9	0.8	1.6
Germany	45.2	42.7	87.9
Guam	16.7	17.2	34.0
Hong Kong (SAR of China)	1 054.2	1 013.7	2 067.9
India	7.3	4.4	11.7
Indonesia	823.9	827.7	1 651.6
Japan	495.3	497.1	992.3
Kiribati	0.3	0.4	0.7
Korea, Republic of (South)	246.1	245.9	492.1
Malaysia	899.5	913.1	1 812.6
Mauritius	19.2	18.9	38.0
Nauru	1.8	1.8	3.6
New Caledonia	71.0	72.0	143.0
New Zealand	2 768.8	2 771.7	5 540.5
Papua New Guinea	131.7	132.6	264.3
Philippines	115.7	106.4	222.1
Qatar	64.4	59.2	123.5
Reunion	9.8	10.0	19.8
Singapore	2 013.3	2 017.1	4 030.4
Solomon Islands	24.8	25.5	50.4
South Africa	168.5	162.2	330.7
Taiwan	116.7	113.7	230.4
Thailand	692.6	676.1	1 368.8
Tonga	11.5	11.6	23.1
United Kingdom	304.2	298.8	603.0
United Arab Emirates	917.6	894.7	1 812.3
United States of America	1 104.4	1 126.9	2 231.2
Vanuatu	75.3	75.4	150.7
Vietnam	135.1	133.5	268.6
Samoa	20.1	20.3	40.4
Total	13 430.4	13 361.5	26 791.9

(a) Based on the movement of traffic between two airports where the airports are linked by the same flight number.

Source: Bureau of Infrastructure, Transport and Regional Economics.

24.18 INTERNATIONAL PASSENGERS, Australian international airports—2010



Source: Bureau of Infrastructure, Transport and Regional Economics.

Accidents, injuries and fatalities

Transport-related deaths

Table 24.19 shows the number of transport-related deaths for each of the transport modes for 2008 and 2009. Transport-related deaths fell from 1,524 in 2008 to 1,477 in 2009. The majority of deaths (72% in 2009) were associated with motor vehicles driven on public roads. Pedestrian deaths fell from 206 in 2008 to 194 in 2009, while the number of pedal cyclist deaths increased from 26 to 35, and the number of water deaths increased from 33 to 35.

Road traffic crashes

Crashes involving fatalities

The number of fatal road traffic crashes in 2010 (1,248) fell by 98 compared with 2009 (table 24.20). Between 2009 and 2010, fatal crashes in the Northern Territory rose by 48%, while Tasmania and Queensland recorded the greatest falls – of 44% and 20% respectively.

The number of people killed was lower in 2010 (1,367) compared with 2009 (1,489), a fall of 8%. The number of people killed in the Northern Territory increased from 31 in 2009 to 49 in 2010, a rise of 58%. The number of people killed in the Australian Capital Territory and Western Australia also increased (50% and 2%), while all the other states recorded fewer people killed, with Tasmania having the greatest fall (51%).

Road traffic fatalities

The number of deaths from road traffic crashes per 100,000 persons fell from 6.8 in 2009 to 6.1 in 2010. In 1970, the rate was 30.4. Road deaths per 100,000 persons in the Northern Territory in 2010 (21.3) were significantly higher than the national rate (table 24.21). The Australian Capital Territory had the lowest rate of road deaths (5.0 per 100,000 persons) in 2010. Tasmania recorded the greatest decrease in road deaths per 100,000 persons, from 12.5 in 2009 to 6.1 in 2010 (a fall of 51%), followed by Queensland (26%) and New South Wales (8.3%).

The Northern Territory had the highest number of fatalities per 10,000 registered vehicles (2.9) in 2010, an increase of 61% compared with 2009. Between 2009 and 2010, fatalities per 10,000 registered vehicles fell the most in Tasmania, from 1.3 to 0.5, a fall of 58%.

Road fatalities and fatality rates – 1926 to 2010

Australian road fatalities for the period 1926 to 2010 are shown in graph 24.22. Road fatalities per 10,000 registered vehicles and 100,000 persons for the same period are shown in graph 24.23. Until 1970, each year other than those during the Great Depression and World War II, had seen a steady growth in motor vehicle ownership and a corresponding increase in road deaths. By 1970, the number of vehicles had increased 12-fold over the number in 1926 and the road toll had increased about four times to reach its highest mark of 3,798 deaths. The number of fatalities per 100,000 people also peaked in 1970 at 30.4. The

24.19 TRANSPORT-RELATED DEATHS(a)

Mode(b)	2008	2009
Motor vehicles(c)	1 151	1 059
Pedestrians	206	194
Pedal cyclists	26	35
Water	33	35
Air	42	27
Other(d)	66	127
Total	1 524	1 477

(a) Based on the International Classification of Diseases, 10th Edition (ICD-10). Data in this table relate to the reference year shown and are based on death occurring up to one year following a transport crash or other incident. Data will, therefore, differ from the traffic fatalities shown in tables 24.20, 24.21 and 24.24 and graphs 24.22 and 24.23, as these data are based on year of occurrence of transport-related deaths that occur within 30 days of an incident.

(b) Mode of transport of deceased persons.

(c) Involving motor vehicles driven on public roads.

(d) Includes deaths occurring on rail, agricultural equipment, all terrain vehicles, industrial and construction vehicles, incidents involving riders of animals, and unspecified transport accidents.

Source: ABS data available on request, Causes of Death collection.

24.20 ROAD TRAFFIC CRASHES INVOLVING FATALITIES

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
FATAL CRASHES									
2009	408	268	296	104	176	52	31	11	1 346
2010	381	260	236	105	176	29	46	15	1 248
PEOPLE KILLED									
2009	453	290	331	119	190	63	31	12	1 489
2010	421	288	249	118	193	31	49	18	1 367

Source: Department of Infrastructure and Transport.

24.21 ROAD TRAFFIC FATALITIES

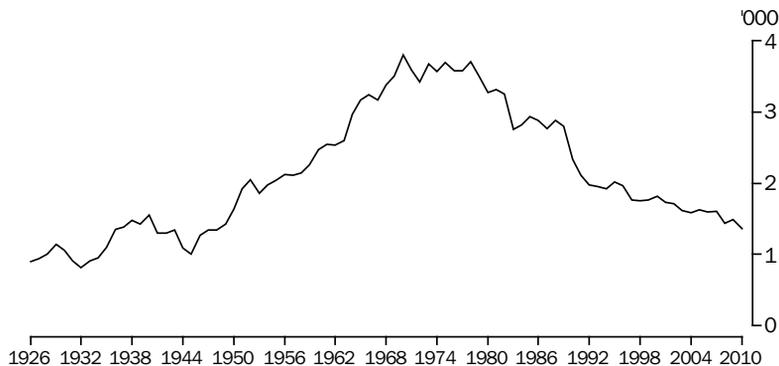
	2009			2010		
	no.	per 100,000	per 10,000 motor	no.	per 100,000	per 10,000 motor
		persons(a)	vehicles registered(b)		persons(a)	vehicles registered(b)
New South Wales	453	6.35	0.71	421	5.82	0.63
Victoria	290	5.32	0.51	288	5.19	0.49
Queensland	331	7.48	0.71	249	5.51	0.51
South Australia	119	7.33	0.80	118	7.17	0.68
Western Australia	190	8.45	0.77	193	8.40	0.79
Tasmania	63	12.52	1.30	61	6.11	0.54
Northern Territory	31	13.71	1.79	49	21.33	2.88
Australian Capital Territory	12	3.40	0.34	18	5.02	0.46
Australia	1 489	6.78	0.69	1 367	6.12	0.61

(a) Estimated resident population at 30 June.

(b) Number of registered motor vehicles and motor cycles (excludes tractors, caravans, plant and equipment) at 31 March.

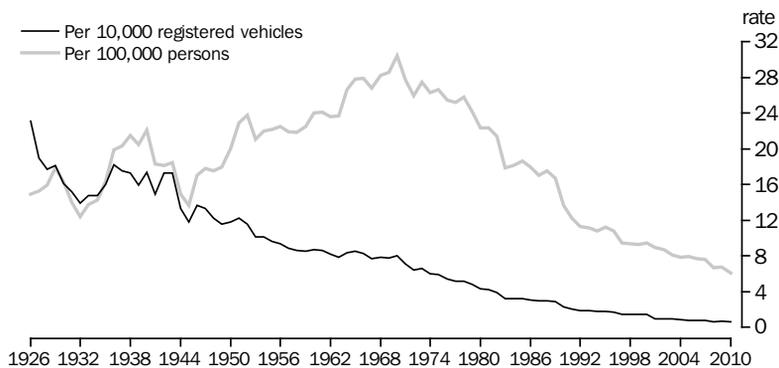
Source: Department of Infrastructure and Transport.

24.22 ROAD FATALITIES—1926–2010



Source: Department of Infrastructure, Transport, Regional Development and Local Government.

24.23 ROAD FATALITY RATES—1926–2010



Source: Department of Infrastructure, Transport, Regional Development and Local Government.

24.24 CHARACTERISTICS OF FATAL CRASHES

	2005		2010	
	no.	%	no.	%
Speed limit at crash site(a)(b)				
Up to 60 km/h	453	30.8	353	28.3
65–90 km/h	312	21.2	279	22.4
100 km/h and above(c)	671	45.6	588	47.1
Type of crash				
Pedestrian	224	15.2	173	13.9
Single vehicle	654	44.4	551	44.2
Multiple vehicle	594	40.4	524	42.0

(a) Excludes crashes with unrecorded posted speed limit.

(b) Speed zone is not coded for ACT crashes.

(c) Includes zones of unrestricted speed.

Source: Department of Infrastructure and Transport.

road toll in 2010 of 1,367 was 36% of the 1970 figure, while the number of fatalities per 100,000 persons (6.1) for 2010 was slightly more than a fifth of that of 1970. Also, while there were 8.0 road fatalities per 10,000 registered vehicles in 1970, this rate had decreased to less than one in 2010 (0.6).

Characteristics of fatal crashes

Two characteristics of fatal crashes for 2005 and 2010 are shown in table 24.24.

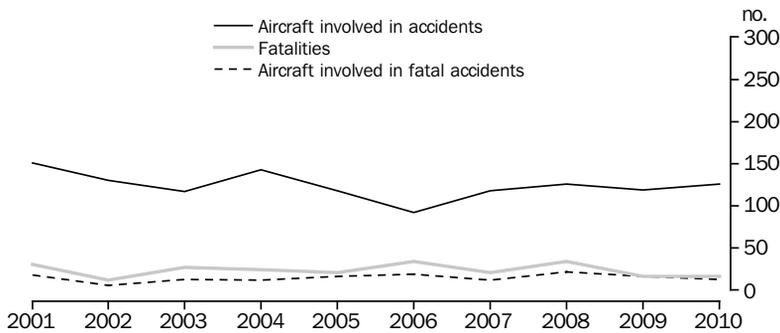
In both 2005 and 2010, the greatest proportion of fatal crashes occurred on roads where the posted speed limit was 100 kilometres per hour (km/h) and above (47% in 2010), followed by roads with a speed limit of up to 60 km/h (28%). A further 22% of fatal crashes in 2010 occurred on roads with speed zones of between 65 km/h and 90 km/h.

In both 2005 and 2010, the highest proportion of fatal crashes were single vehicle crashes (44% in both years) followed by multiple vehicle crashes (40% in 2005 and 42% in 2010). Pedestrian crashes accounted for 15% of crash types in 2005 and 14% in 2010.

Air accidents

Between 2001 and 2010, the number of aircraft involved in accidents declined by 17%, from 151 in 2001 to 126 in 2010, with a low of 92 in 2006 (graph 24.25). The number of aircraft involved in fatal accidents declined from 18 in 2001 to 13 in 2010, with a low of 6 in 2002. In 2010, there were 16 fatalities involving registered civil aircraft, the same as 2009. This was a decrease of 48% from 2001.

24.25 AIR ACCIDENTS, FATALITIES AND FATAL ACCIDENTS(a)



(a) Involving registered civil aircraft.

Source: Australian Transport Safety Bureau.

24.26 REGISTERED MOTOR VEHICLES—31 January 2011

	TRUCKS							Motor cycles	Total(b)
	Passenger vehicles(a)	Light commercial vehicles	Non-freight carrying			Buses			
			Rigid	Articulated	carrying				
'000	'000	'000	'000	'000	'000	'000	'000	'000	
New South Wales	3 753	675	124	19	3	23	181	4 778	
Victoria	3 322	563	103	25	6	19	161	4 198	
Queensland	2 448	653	100	19	5	20	157	3 402	
South Australia	997	173	30	8	2	5	48	1 262	
Western Australia	1 402	318	62	13	5	14	99	1 913	
Tasmania	300	87	11	2	1	3	15	419	
Northern Territory	85	36	5	1	0	4	6	137	
Australian Capital Territory	217	25	3	0	0	1	12	259	
Australia	12 525	2 531	438	86	23	88	679	16 368	

(a) Includes campervans.

(b) Excludes tractors, plant and equipment, caravans and trailers.

Source: Motor Vehicle Census, Australia (9309.0).

Transport equipment

Registered motor vehicles

There were 16.4 million motor vehicles (excluding tractors, plant and equipment, caravans and trailers) registered in Australia at 31 January 2011 (table 24.26). A little over three-quarters of all vehicles (77%) are passenger vehicles. New South Wales, Victoria and Queensland are the states with the largest number of vehicles, with 29%, 26% and 21% of the total vehicle fleet respectively.

The average age of the Australian motor vehicle fleet at 31 January 2011 was 10 years (table

24.27). Tasmania recorded the highest average age (12 years), while the Northern Territory and the Australian Capital Territory recorded the lowest average age (9 years). Of the different vehicle types, campervans had the oldest average age (18 years), while motorcycles recorded the lowest (9 years).

The number of motor vehicles registered at 31 January 2011 represents 730 registrations per 1,000 people (graph 24.28). In 2011, the rate was highest for Western Australia at 829 registrations per 1,000 people and lowest for the Northern Territory at 596.

24.27 ESTIMATED AVERAGE AGE OF THE VEHICLE FLEET—31 January 2011

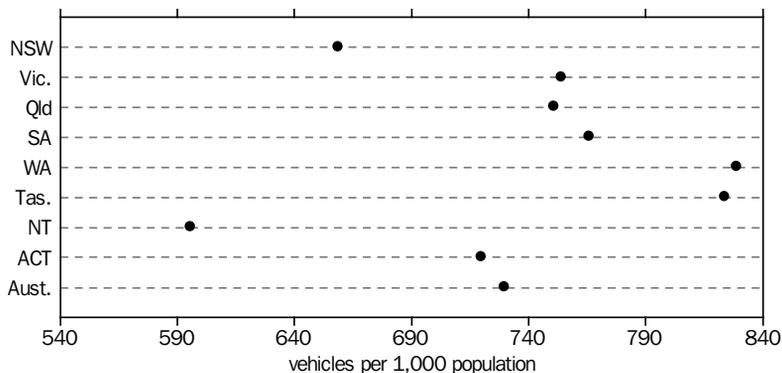
Type of vehicle	STATE/TERRITORY OF REGISTRATION								
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Passenger vehicles	9.3	10.1	9.3	11.0	9.7	11.6	8.8	9.4	9.8
Campervans	16.2	17.8	14.1	21.8	21.6	20.3	19.5	19.5	17.8
Light commercial vehicles	10.1	11.0	9.8	11.0	10.4	12.5	8.9	9.4	10.4
Light rigid trucks	10.8	11.2	10.3	11.6	11.1	14.8	10.8	10.2	10.9
Heavy rigid trucks	14.2	17.1	13.9	16.8	16.9	16.7	12.7	11.0	15.5
Articulated trucks	11.2	11.7	10.6	11.5	11.9	9.7	12.0	9.1	11.3
Non-freight carrying trucks	13.3	15.6	10.8	14.9	15.6	15.6	13.2	9.7	14.1
Buses	11.2	11.5	10.0	12.0	10.7	14.4	8.8	11.7	11.0
Motor cycles	8.5	9.3	8.6	9.0(b)	9.9	10.4	6.9	8.5	9.0
Total	9.5	10.4	9.5	11.1	10.1	12.0	8.9	9.4	10.0

(a) Excludes tractors, plant and equipment, caravans and trailers.

(b) Year of manufacture is not well reported for South Australian motor cycles.

Source: Motor Vehicle Census (9309.0).

24.28 MOTOR VEHICLES ON REGISTER(a), Per 1,000 persons



(a) 2011 Motor Vehicle Census data are as at 31 Jan 2011. Estimated Resident Population figures are as at 30 September 2010.

Source: Australian Demographic Statistics (3101.0) and Motor Vehicle Census (9309.0).

New motor vehicle sales

Statistics on the registration of new motor vehicles are often considered to be an important indicator of the health of the economy and an early indicator of developing economy-wide trends. New motor vehicle sales are also considered to be an indicator of consumer demand and confidence.

A wide range of other factors can influence sales of new motor vehicles, including:

- business investment in plant and equipment
- motor vehicle production
- economic conditions
- tax incentives
- interest rates
- the value of the Australian dollar relative to other currencies
- price of fuel
- demand for smaller vehicles
- carbon emissions and
- competition amongst manufacturers and retailers.

The ABS collects and publishes new motor vehicle sales (NMVS) statistics on a monthly basis. This makes NMVS one of the more timely economic indicators.

There were 1,081,633 new motor vehicle sales in 2010–11 (table 24.29). This was an increase of 68,360 or 6.7% over the 1,013,273 sales recorded in 2009–10. The earthquake and tsunami that occurred in Japan on 11 March 2011 may have affected new motor vehicle sales in Australia due to associated delays in delivery of Japanese manufactured vehicles. These events and the wide spread flooding in the eastern states during 2010–11 may have affected the number of new vehicle sales since early 2011. As new motor vehicle sales are influenced by a range of factors, it is not possible to quantify the specific impact of these events.

Graph 24.30 shows new motor vehicle sales between 2001 and 2011, on a trend and seasonally-adjusted basis.

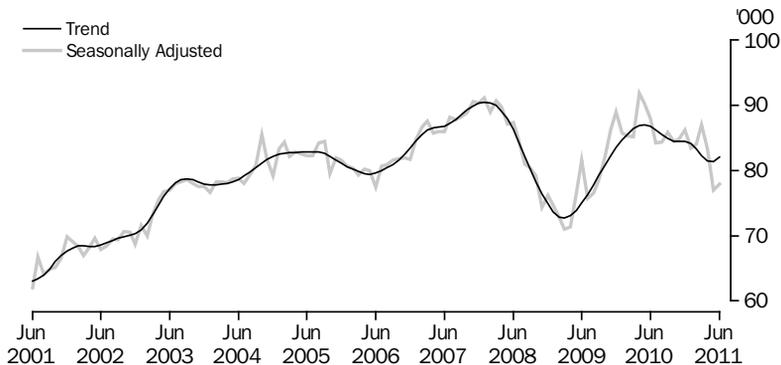
24.29 NEW MOTOR VEHICLE SALES—2010–11

	STATE/TERRITORY								
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Passenger vehicles	197 427	174 993	112 749	39 741	61 185	10 003	4 556	11 303	611 957
Sports utilities	77 180	65 569	52 020	14 755	29 697	4 464	2 841	3 504	250 030
Other vehicles(a)	60 853	50 487	55 306	13 595	29 138	4 640	3 364	2 263	219 646
Total vehicles	335 460	291 049	220 075	68 091	120 020	19 107	10 761	17 070	1081 633

a) Includes utilities, panel vans, cab chassis, goods carrying vans, rigid trucks, prime movers, non-freight carrying trucks, and buses. Also includes four wheel drive light commercial vehicles not classified as sports utility vehicles (SUVs).

Source: *New Motor Vehicle Sales (9314.0)*.

24.30 NEW MOTOR VEHICLE SALES, Total vehicles



Source: *New Motor Vehicle Sales (9314.0)*.

Shipping trading fleet

The Australian trading fleet consists of cargo vessels owned and/or operated by Australian companies. The fleet includes vessels that carry cargo and passengers, but does not include vessels that carry passengers only. It decreased from 104 ships in 2007 to 97 ships in 2010 (table 24.31). Deadweight tonnes has fallen slightly from 3.14 million tonnes in 2007 to 3.06 million tonnes in 2010. Gross tonnage fell from 2.4 million tonnes in 2007 to 2.3 million tonnes in 2010.

Aircraft fleet

There were 13,510 aircraft in the Australian Civil Aircraft Register at 31 December 2010, including 10,381 single and multi-engine aeroplanes, 1,653 helicopters and 1,476 gliders and balloons (graph 24.32).

International comparisons

Australian road traffic deaths are compared with those for other selected OECD nations in table 24.33. Australia's rate of 6.8 road deaths per 100,000 persons in 2009 was considerably lower than the rates of Poland (12.0), the United States of America (11.0) and New Zealand (8.9). However, Australia's rate was markedly higher than the United Kingdom (3.8), Sweden (3.9) and Japan and Switzerland (both 4.5).

Australia's rate of road deaths per 10,000 registered vehicles (1.0) was the same as the OECD median. For the countries listed, New Zealand had the highest death rate per 10,000 registered vehicles (1.2).

The number of fatalities per 100 million vehicle-kilometres travelled in Australia in 2009 is 0.7.

24.31 AUSTRALIAN TRADING FLEET—30 June

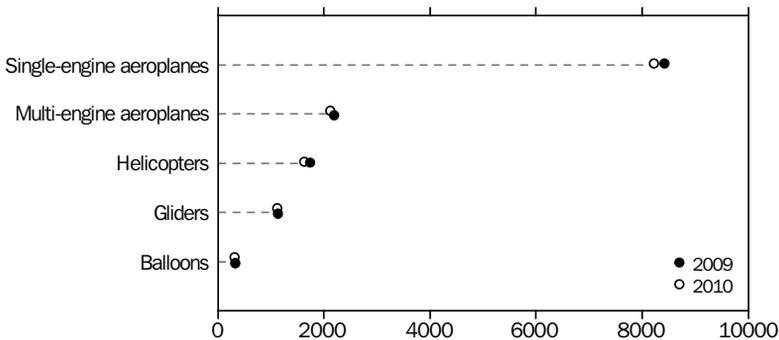
		2007	2008	2009	2010
Ships	no.	104	103	94	97
Deadweight(a)	'000 tonnes	3 142	3 233	2 889	3 063
Gross tonnage(b)	'000 tonnes	2 446	2 491	2 290	2 305

(a) Weight that a vessel can carry, including cargo, bunkers, water and stores.

(b) Measure of the internal capacity of a ship (in tonnes) that is available within the hull and enclosed spaces for cargo, stores, passenger and crew.

Source: Bureau of Infrastructure and Transport.

24.32 REGISTERED AIRCRAFT(a)—at 31 December



(a) Includes amateur built aircraft. Gliders includes powered and non-powered aircraft.

Source: Civil Aviation Safety Authority, Civil Aircraft Register.

24.33 ROAD TRAFFIC FATALITIES, International comparisons—2009

Country	PEOPLE KILLED			TOTAL POPULATION	
	no.	per 100,000 persons	per 10,000 registered vehicles	per 100 mill. vehicle-km travelled	
Australia	1 492	6.8	1.0	0.7	22.0
France	4 273	6.8	1.1	na	62.5
Germany	4 152	5.1	0.8	na	82.0
Japan	5 772	4.5	0.7	na	127.5
New Zealand	384	8.9	1.2	na	4.3
Poland	4 572	12.0	na	na	38.2
Portugal	840	7.9	na	na	10.6
Spain	2 714	5.9	na	na	45.8
Sweden	358	3.9	0.7	na	9.3
Switzerland	349	4.5	na	na	7.7
United Kingdom	2 337	3.8	0.7	na	61.8
United States of America	33 808	11.0	na	na	307.0
OECD median	na	6.4	1.0	na	na

na not available

Source: Department of Infrastructure and Transport.

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INFORMATION AND COMMUNICATION TECHNOLOGY

Information and communication technology (ICT) plays an important role in changing the way in which people live, work and do business. ICT products include computer hardware and software, telecommunications equipment and infrastructure, and computer and telecommunication services. These products are core drivers of the 'digital economy' and there is increasing demand for information on ICT demand and supply to inform debate on the role of ICT in Australia's social and economic development.

This chapter focuses mainly on Internet access and use by businesses, households and individuals.

While this chapter does not include data on ICT industries, the previous edition of *Year Book Australia* contained detailed 2006–07 data on this topic.

Chapter 22, *Service industries*, in this edition, has data on the Information media and telecommunications industry and the Professional, scientific and technical services industry, which between them, include the ICT services industries.

Use of information technology

This section focuses on key indicators of the use of information technology (IT) by businesses and households in Australia.

Businesses

In the four-year period from 2005–06 to 2009–10, the proportion of Australian businesses with access to the Internet increased from 81% to 91% and those with a web presence from 30% to 42%. (For the first time, the 2009–10 survey included employing businesses in the Agriculture, forestry and fishing industry. Data presented on comparisons over time exclude these businesses.)

In 2009–10, nearly all (99%) businesses with 200 or more employees had Internet access, while the proportion was 87% for businesses with 0–4

employees (table 25.1). Most businesses with 200 or more employees had a web presence (94%), while over a quarter (29%) of businesses with 0–4 employees had a web presence.

In 2009–10, the proportion of businesses using IT varied considerably across industries. Almost all businesses within the Information media and telecommunications industry had Internet access, followed by Financial and insurance services (98%) and Professional, scientific and technical services (97%). Accommodation and food services had the lowest proportion of businesses with Internet access (74%), followed by Agriculture, forestry and fishing (83%). Web presence was highest in Arts and recreation Services (65%) and Information media and telecommunications (58%), while Agriculture, forestry and fishing and Transport, postal and warehousing had the lowest proportions of businesses with a web presence (11% and 22% respectively).

25.1 BUSINESS USE OF SELECTED INFORMATION TECHNOLOGIES, AUSTRALIA(a), By employment size and industry—2009–10

	<i>Businesses with Internet access(b)</i> %	<i>Businesses with web presence(b)</i> %
Employment size		
0–4 persons	87.3	29.2
5–19 persons	93.7	51.5
20–199 persons	96.4	73.0
200 or more persons	99.2	94.0
Industry(c)		
Agriculture, forestry and fishing	83.0	10.9
Mining	95.6	48.7
Manufacturing	90.8	52.0
Electricity, gas, water and waste services	88.8	40.8
Construction	91.7	27.4
Wholesale trade	96.1	57.3
Retail trade	88.7	46.0
Accommodation and food services	73.6	42.8
Transport, postal and warehousing	84.1	21.7
Information media and telecommunications	99.8	58.3
Financial and insurance services	98.0	55.8
Rental, hiring and real estate services	89.3	50.3
Professional, scientific and technical services	97.0	50.3
Administrative and support services	92.3	39.6
Health care and social assistance	91.4	36.4
Arts and recreation services	95.3	64.9
Other services	88.9	40.4
Total	90.1	40.0

(a) Proportions are of all businesses in each category.

(b) As at 30 June 2010.

(c) Classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0)*.

Source: *Business use of Information Technology (8129.0)*.

Households

The percentage of Australian households with access to the Internet at home has continued to increase, from 67% in 2006–07 to 79% in 2010–11 (graph 25.2).

There were an estimated 6.2 million households (73% of all households in Australia) with a broadband Internet connection in 2010–11.

In 2006–07, 68% of households with Internet access had a broadband connection. This proportion has grown to 92% in 2010–11.

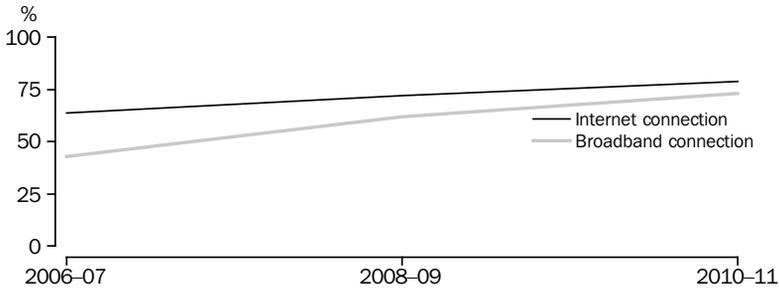
Home Internet access is more common in households with higher incomes (graph 25.3).

The proportion of households in the highest income quintile with Internet access in 2010–11 was 95%, compared with 55% for households in the lowest income quintile.

Home Internet access is also more common in households with children under 15 years of age (93%), compared with other households (74%). Additionally, the proportion of households with home Internet access is higher in state and territory capitals (82%) than other areas (74%).

In 2010–11, 83% of households had access to a computer at home (graph 24.4). Since 2006–07, household computer access has increased by 10 percentage points.

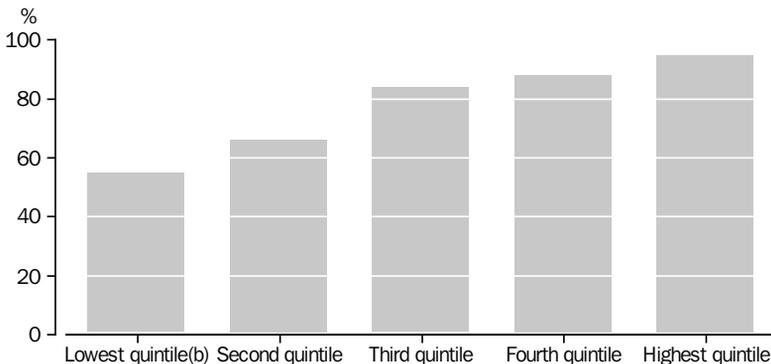
25.2 HOUSEHOLD ACCESS TO INTERNET AND BROADBAND(a) AT HOME—2006–07 to 2010–11



(a) Internet access may be via/from any device within the home that provides access to the World Wide Web.

Source: *Household Use of Information Technology, Australia (8146.0)*.

25.3 HOUSEHOLDS WITH HOME INTERNET ACCESS, By equivalised household income quintile(a)—2010–11

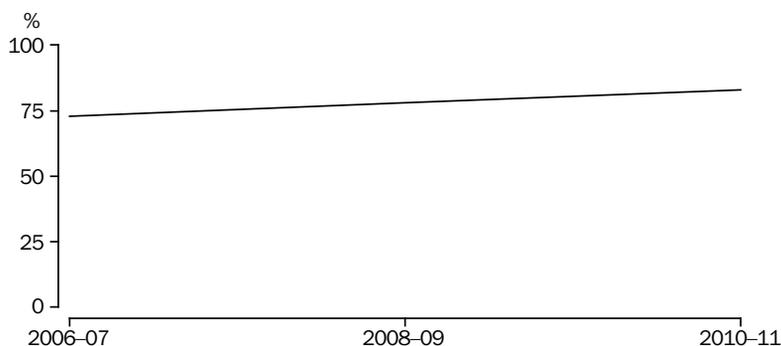


(a) Excludes households where income could not be determined.

(b) Includes households with an income less than zero.

Source: *Household Use of Information Technology, Australia (8146.0)*.

25.4 HOUSEHOLD ACCESS TO A COMPUTER AT HOME— 2006–07 to 2010–11



Source: *Household Use of Information Technology, Australia (8146.0)*

25.5 INTERNET ACTIVITY SUMMARY, Australia

	June 2010 '000	June 2011 '000
SUBSCRIBERS(a)		
Dial-up (less than 256 kbps)(b)		
Business and government	177	111
Household	607	468
Total	785	579
Broadband (256 kbps or greater)(b)		
Business and government	1 681	2 089
Household	7 036	8 239
Total	8 717	10 328
Total		
Business and government	1 859	2 200
Household	7 643	8 707
Total	9 502	10 906

(a) Data are for Internet service providers with more than 1,000 subscribers.

(b) Dial-up and broadband figures by sector are collected by advertised download speeds, therefore these data may not equal figures reported for type of access connection, due to some broadband connections being reported as less than 256 kbps.

Source: *Internet Activity, Australia (8153.0)*.

How Australia accesses and uses the Internet

Internet subscribers

Australians have access to a range of Internet access technologies, including dial-up, digital subscriber line (DSL), cable, fibre, fixed and mobile wireless, and satellite. The availability of these services can depend upon a consumer's geographic location.

At the end of June 2011, there were 10.9 million Internet subscribers in Australia (excluding

Internet connections through mobile handsets), with household subscriptions accounting for 80% of this total (table 25.5). The remaining 20% of connections were business and government subscribers.

At 30 June 2011, 95% of subscribers used a broadband Internet connection and only 5% used dial-up services (table 25.6). The most prevalent form of access technology for broadband connections was mobile wireless which accounted for 44% of all subscriptions. Mobile wireless technology recorded the largest growth in subscriber numbers between 2010 and 2011, increasing from 3.5 million to 4.8 million.

25.6 INTERNET SUBSCRIBERS(a), By access connection—June 2011

	No. of subscribers	Proportion of subscribers
	'000	%
Dial-up(b)	569	5
Broadband(b)		
Digital subscriber line (DSL)	4 493	41
Cable	881	8
Fibre	31	—
Satellite	106	1
Fixed wireless(c)	34	—
Mobile wireless(d)	4 786	44
Other broadband	7	—
Total Broadband	10 338	95
Total subscribers	10 906	100

— nil or rounded to zero (including null cells)

(a) Data are for Internet service providers with more than 1,000 subscribers.

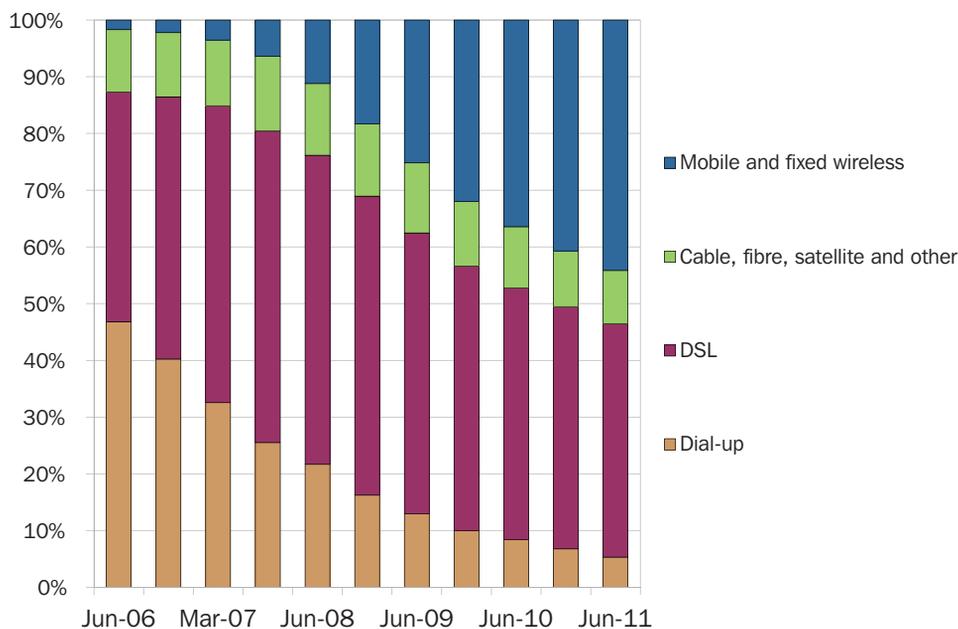
(b) Dial-up and broadband figures by sector are collected by advertised download speeds, therefore these data may not equal figures reported for type of access connection, due to some broadband connections being reported as less than 256 kbps.

(c) A terrestrial point-to-point microwave or radio link that allows subscribers within the receiving area to access the Internet. Sender and receiver must generally be within line-of-sight and no more than 22 kilometres apart, although newer generations of this technology have overcome some of these obstacles. Examples of technologies included as fixed wireless are fixed WiMax, LMDS and MMDS.

(d) An Internet connection that provides short range, high data rate connections between mobile data devices and access points connected to a network. Examples include mobile WiMax and 3G accessed through a datacard, USB modem, tablet SIM card or any other device used to connect a computer to a cellular network. Mobile wireless Internet subscriptions via a mobile handset (mobile telephone) are excluded.

Source: *Internet Activity, Australia (8153.0)*.

25.7 PROPORTION OF SUBSCRIBERS, By connection type(a)



(a) For ISPs with more than 1,000 subscribers.

Source: *Internet Activity, Australia (8153.0)*.

Graph 25.7 shows the overall trend of Internet access connections between 2006 and 2011, particularly the move from dial-up to broadband connections. In the five-year period from June 2006 to June 2011, dial-up connections decreased from 2.8 million to 0.6 million subscribers, while broadband connections increased over the same period from 3.2 million to 10.3 million subscribers. In particular, the uptake of mobile and fixed wireless technology has increased in recent years, with connections through this technology (44% of all Internet connections) surpassing digital subscriber line (DSL) connections (41% of all Internet connections) for the first time in June 2011.

Australians continued to access increasingly faster download speeds, with 87% of access connections offering a download speed of 1.5 Mbps or greater (table 25.8).

Mobile handset subscribers

At the end of June 2011, there were 9.7 million mobile handset subscribers in Australia able to access the Internet via mobile phone (table 25.9). This represents an increase of 18% from December 2010. Of the 9.7 million mobile handsets, 3.6 million (37%) were dedicated data subscriptions and 6.1 million all other active standard mobile subscriptions.

Business use of the Internet

(For the first time, the 2009–10 survey included employing businesses in the Agriculture, forestry and fishing industry. Data presented on comparisons over time exclude these businesses.)

During 2009–10, 46% of Australian businesses placed orders over the Internet. The proportion of businesses using the Internet for this purpose grew substantially between 2004–05 and 2009–10, from 33% to 48% (table 25.10).

25.8 INTERNET SUBSCRIBERS(a), By sector(b) and advertised download speed—June 2011

	Number of subscribers '000	Proportion of subscribers %
Business and government subscribers		
Less than 256 kbps	111	1
Broadband		
256 kbps to less than 1.5 Mbps	65	1
1.5 Mbps to less than 8 Mbps	1 244	11
8 Mbps to less than 24 Mbps	705	6
24 Mbps or greater	75	1
Total broadband (256 kbps or greater)	2 089	19
Total all advertised download speeds	2 200	20
Household subscribers		
Less than 256 kbps	468	4
Broadband		
256 kbps to less than 1.5 Mbps	747	7
1.5 Mbps to less than 8 Mbps	3 369	31
8 Mbps to less than 24 Mbps	3 208	29
24 Mbps or greater	914	8
Total broadband (256 kbps or greater)	8 239	76
Total all advertised download speeds	8 707	80
All subscribers		
Less than 256 kbps	579	5
Broadband		
256 kbps to less than 1.5 Mbps	812	7
1.5 Mbps to less than 8 Mbps	4 614	42
8 Mbps to less than 24 Mbps	3 913	36
24 Mbps or greater	989	9
Total broadband (256 kbps or greater)	10 328	95
Total all advertised download speeds	10 906	100

(a) Data are for Internet service providers with more than 1,000 subscribers.

(b) ISPs may reclassify their subscribers from Business and government to Household, or vice versa, or they may report proportions in lieu of actual numbers which may affect the reported figures. Readers are advised to use these figures with caution.

Source: *Internet Activity, Australia (8153.0)*.

25.9 INTERNET CONNECTIONS VIA A MOBILE HANDSET(a)

	Jun 2010	Dec 2010	Jun 2011
Number of subscribers ('000)			
Dedicated data subscriptions(b)	1 214	1 222	3 609
All other standard mobile subscriptions(c)	5 566	6 974	6 074
Total mobile handset subscribers	6 781	8 197	9 683

(a) Data are for Internet service providers with more than 1,000 subscribers.

(b) A dedicated data subscription is a subscription over a mobile network which is purchased separately from voice services, either as a stand-alone service or as an add-on package to voice services.

(c) An active standard mobile subscription refers to a mobile service which has access to the Internet via HTTP and has been used to make a data connection using Internet Protocol (IP) within the three month period prior to the reference date. This includes all casual/incidental browsing where a dedicated data subscription has not specifically been purchased.

Source: *Internet Activity, Australia (8153.0)*.

25.10 INTERNET COMMERCE(a)

		2004– 05(b)	2005– 06(b)	2006– 07(b)	2007– 08(b)	2008– 09(b)	2009– 10(b)	2009– 10(c)
Businesses which								
Placed orders via the Internet or Web	%	33	37	40	43	46	48	46
Received orders via the Internet or Web	%	12	21	23	24	27	26	25
Internet income(d)	\$b	39.6	56.7	67.6	81.0	122.9	141.9	142.8

(a) Proportions are of all businesses.

(b) Excludes businesses in the Agriculture, forestry and fishing industry.

(c) Includes businesses in the Agriculture, forestry and fishing industry.

(d) In current prices.

Source: *Business Use of Information Technology (8129.0)*; *Selected Characteristics of Australian Business (8167.0)*.

During 2009–10, 25% of businesses received orders via the Internet, with the income derived from these orders totalling \$143 billion. The value of income from orders received via the Internet grew very strongly between 2004–05 and 2009–10, increasing by \$102 billion (258%).

As with having a web presence or Internet access, the likelihood of a business placing orders over the Internet increased with the employment size of the business (table 25.11). In 2009–10, 73% of businesses with 200 or more employees placed orders over the Internet, compared with 40% of businesses with 0–4 employees. At the industry level, Professional, scientific and technical services and Information media and telecommunications had the highest proportions of businesses which placed orders over the Internet (71% and 70% respectively), while Agriculture, forestry and fishing and Transport, postal and warehousing reported the lowest proportions (26% and 28% respectively).

There was also variability by employment size for businesses receiving orders over the Internet. Businesses with 200 or more employees and 20–199 employees received the highest proportion

of orders in this way (both 34%), compared with those employing 0–4 people, which received the lowest proportion (21%). At the industry level, Wholesale trade had the highest proportion of businesses which received orders via the Internet (49%), while the lowest proportion was recorded for Health care and social assistance (7%).

Personal use

In 2010–11, 79% of persons aged 15 years and over had accessed the Internet in the previous 12 months, up from 74% in 2008–09.

Persons aged 18–24 years had the highest proportion (96%) of individuals accessing the Internet (graph 25.12). The 55–64 year age group showed the largest increase in the proportion of people accessing the Internet, up from 63% in 2008–09 to 71% in 2010–11.

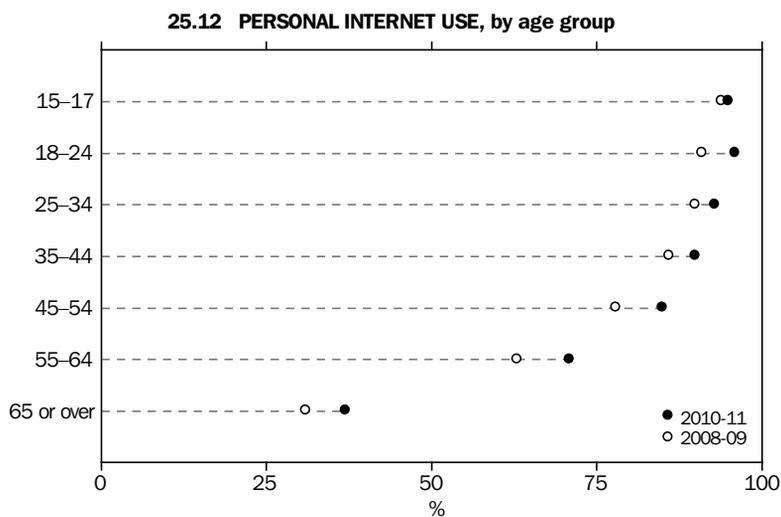
The proportion of people using the Internet to purchase or order goods or services has continued to increase since 2006–07 (graph 25.13). In 2010–11, 68% of Internet users had used the Internet to purchase or order goods or services for private purposes, up from 61% in 2006–07.

25.11 BUSINESS USE OF INTERNET COMMERCE, By employment size and industry—2009–10

	BUSINESSES WHICH:	
	Placed orders via the Internet or Web %	Received orders via the Internet or Web %
Employment size		
0–4 persons	40	21
5–19 persons	54	29
20–199 persons	63	34
200 or more persons	73	34
Industry(a)		
Agriculture, forestry and fishing	26	11
Mining	53	13
Manufacturing	53	41
Electricity, gas, water and waste services	41	23
Construction	35	22
Wholesale trade	58	49
Retail trade	51	34
Accommodation and food services	36	23
Transport, postal and warehousing	28	14
Information media and telecommunications	70	37
Financial and insurance services	50	19
Rental, hiring and real estate services	50	23
Professional, scientific and technical services	71	27
Administrative and support services	38	23
Health care and social assistance	42	7
Arts and recreation services	52	36
Other services	46	24
Total	46	25

(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Business Use of Information Technology* (8129.0).



Source: *Household Use of Information Technology, Australia* (8146.0).

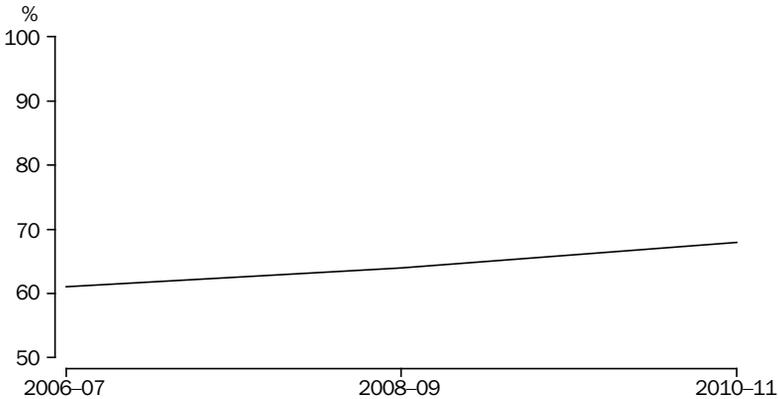
Of people who had made a purchase over the Internet, 74% purchased Travel, accommodation, memberships or tickets (graph 25.14). The next most common types of goods or services purchased over the Internet were CDs, music, DVDs, videos, books or magazines (45%) and Clothes, cosmetics or jewellery (45%) and Clothes, cosmetics or jewellery (34%).

In 2010–11, of the 13.3 million people who accessed the Internet at home, the top three

activities were: Emailing (91%); Research, news and general browsing (87%); and Paying bills online or online banking (64%) (graph 25.15).

Information on the use of the Internet and mobile phones by children aged 5–14 can be found in this chapter in the previous edition of *Year Book Australia*.

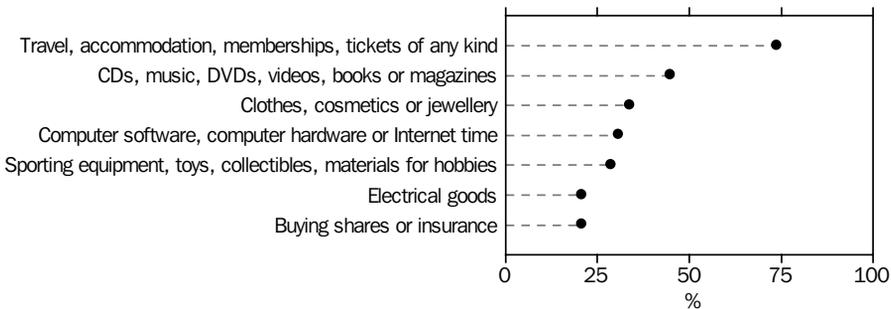
25.13 USE OF THE INTERNET TO PURCHASE OR ORDER GOODS OR SERVICES(a)(b)—2006–07 to 2010–11



- (a) Purchased or ordered in previous 12 months.
- (b) As a proportion of Internet users aged 15 years and over.

Source: *Household Use of Information Technology, Australia (8146.0)*.

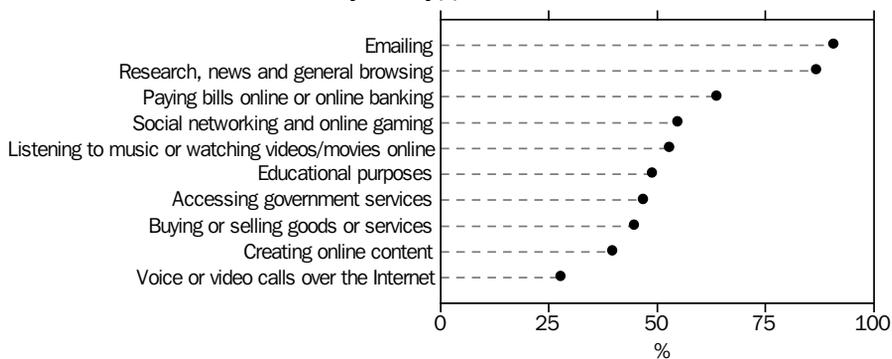
25.14 TYPES OF GOODS OR SERVICES PURCHASED OR ORDERED OVER THE INTERNET(a)(b)(c)—2010–11



- (a) Multiple goods or services could be selected.
- (b) Purchased or ordered in previous 12 months.
- (c) As a proportion of people aged 15 years and over who purchased goods or services online.

Source: *Household Use of Information Technology, Australia (8146.0)*.

**25.15 PERSONAL INTERNET USE AT HOME,
By activity(a)—2010–11**



(a) Multiple activities could be selected.

Source: *Household Use of Information Technology, Australia (8146.0)*.

Bibliography

ABS products

Business Use of Information Technology (8129.0)

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Internet Activity, Australia (8153.0)

Selected Characteristics of Australian Business (8167.0)

RESEARCH AND INNOVATION

This chapter presents a statistical picture of research and experimental development (R&D) and other forms of innovation in Australia.

The application of R&D and innovation to business processes influences the strength and competitiveness of the economy by increasing productivity and encouraging economic growth and development.

There is a range of statistics relating to R&D and innovation in Australia, many of which are compiled by the Australian Bureau of Statistics (ABS). These statistics are based on standards promulgated by the Organisation for Economic Co-operation and Development (OECD). Such standards enable international comparisons to be made between member countries.

This chapter describes key research and innovation statistics, and highlights the main features and recent trends.

Research and experimental development (R&D)

The OECD defines Research and experimental development (R&D) as comprising "... creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications."

The ABS has extended this definition as follows: R&D is systematic investigation or experimentation involving innovation or technical risk, the outcome of which is new knowledge, with or without a specific practical application, or new or improved products, processes, materials, devices or services. R&D extends to modifications to existing products/processes but ceases (and pre-production begins) when work is no longer experimental.

R&D covers four type of activities: pure and strategic basic research, applied research and experimental development. Pure basic research is experimental and theoretical work undertaken to acquire new knowledge without looking for long-term benefits other than the advancement of knowledge, while strategic basic research is directed into specified broad areas in the expectation of practical discoveries. Applied research is original work undertaken primarily to acquire new knowledge, with a specific application in view. It is undertaken either to determine possible uses for the findings of basic research or to determine new ways of achieving some specific and predetermined objectives. Experimental development is systematic work, using existing knowledge gained from research

or practical experience, which is directed to producing new materials, products, devices, policies, behaviours or outlooks; to installing new processes, systems and services; or to improving substantially those already produced or installed.

R&D can also be classified in various ways, including by field of research (FOR) and socio-economic objective (SEO). The FOR classification allows R&D activity to be categorised according to the methodology used in the R&D, rather than the activity of the unit performing the R&D or the purpose of the R&D. The FOR reflects the field in which the research was undertaken and is based on the processes and techniques used. The FOR classification is hierarchical with three levels: Division, Group and Field. The SEO classification allows R&D activity to be categorised according to the intended purpose or outcome of the research, rather than the processes or techniques used in order to achieve this objective. The SEO reflects the dominant beneficiary or beneficiaries of the research output. The SEO classification is also hierarchical and has four levels: Sector, Division, Group and Objective.

Statistics on the amount of expenditure and human resources devoted to R&D effort in the business sector are collected annually by the ABS, while comparable statistics for the government, higher education and private non-profit sectors are collected biennially.

In 2008–09, gross expenditure on R&D was \$28,146 million (table 26.1). This represented an increase of 29% over 2006–07. The business and higher education sectors accounted for most of the increase.

26.1 GROSS EXPENDITURE ON R&D(a), By sector

Sector	2000–01 \$m	2002–03 \$m	2004–05 \$m	2006–07 \$m	2008–09 \$m
Business(b)	4 983	6 940	8 676	12 639	17 264
Government					
Commonwealth	1 405	1 531	1 544	2 046	2 252
State/territory	951	951	942	1 049	1 169
Total	2 356	2 482	2 486	3 095	3 420
Higher education(c)	2 790	3 430	4 327	5 434	6 717
Private non-profit	289	360	479	609	744
Total	10 417	13 212	15 969	21 777	28 146

(a) In current prices.

(b) 2008–09 data were revised as an outcome of the 2009–10 data collection cycle.

(c) Collected on a calendar year basis.

Source: *Research and Experimental Development, Businesses, Australia (8104.0)*; *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia (8109.0)*; *Research and Experimental Development, Higher Education Organisations, Australia (8111.0)*.

Business sector

During 2009–10, expenditure on R&D undertaken by businesses (BERD) in Australia was \$16,685 million, which represented a decrease of 3% from 2008–09 (table 26.2). Human resources devoted to business R&D in 2009–10 were 57,457 person years of effort (PYE), an increase of 6% from 2008–09.

BERD decreased by 3% in current price terms and 5% in chain volume terms, compared to 2008–09.

The industry divisions of Manufacturing and Mining continued to be the largest contributors to total BERD in 2009–10, contributing \$4,219 million (25%) and \$3,695 million (22%), respectively. Financial and insurance services (\$2,651m or 16%) and Professional, scientific and technical services (\$2,516m or 15%) were the next largest contributors (graph 26.3). Combined, these four industries accounted for 78% of BERD.

Table 26.4 shows more detailed industry data by type of R&D activity.

26.2 BUSINESS RESOURCES DEVOTED TO R&D

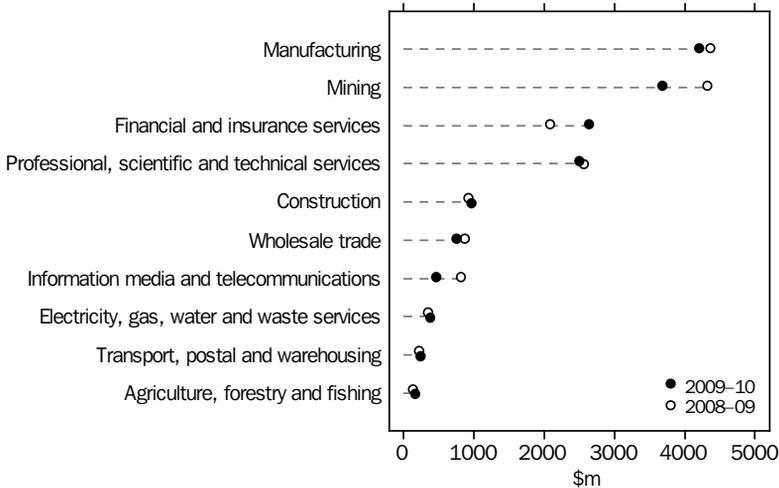
Expenditure on R&D		2005–06	2006–07	2007–08(a)	2008–09(a)	2009–10
Current prices						
Value	\$m	10 434	12 639	15 047	17 264	16 685
Dollar change	\$m	1 758	2 205	2 408	2 216	-579
Percentage change	%	20	21	19	15	-3
Chain volume measures(b)						
Value	\$m	11 680	14 104	16 017	17 616	16 685
Dollar change	\$m	1 539	2 425	1 913	1 598	-931
Percentage change	%	15	21	14	10	-5
Human resources devoted to R&D						
Value	PYE	43 686	46 462	50 896	53 998	57 457
PYE change	PYE	3 228	2 776	4 434	3 102	3 459
Percentage change	%	8	6	10	6	6

(a) 2007–08 and 2008–09 data have been revised.

(b) The reference year for chain volume measures is 2009–10.

Source: Research and Experimental Development, Businesses, Australia (8104.0).

26.3 BUSINESS SECTOR EXPENDITURE ON R&D, By selected industries(a)



(a) Ranked by 2009–10 BERD.

Source: Research and Experimental Development, Businesses, Australia (8104.0).

26.4 BUSINESS EXPENDITURE ON R&D, By industry and by type of activity—2009–10

<i>Industry(a)</i>	<i>Pure basic research</i> \$'000	<i>Strategic basic research</i> \$'000	<i>Applied research</i> \$'000	<i>Experimental development</i> \$'000	<i>Total expenditure on R&D</i> \$'000
AGRICULTURE, FORESTRY AND FISHING					
Agriculture	833	8 437	29 178	63 464	101 912
Aquaculture	np	np	8 022	13 315	27 896
Forestry and logging	np	np	23 012	np	37 579
Fishing, hunting and trapping	—	np	np	np	np
Agriculture, forestry and fishing support services	np	602	np	1 956	np
Total Agriculture, forestry and fishing	2 023	20 054	73 656	88 115	183 848
MINING					
Coal mining	—	27 851	229 610	459 218	716 679
Oil and gas extraction	np	np	702 945	529 339	1 262 165
Metal ore mining	3 519	62 437	453 537	796 294	1 315 787
Non-metallic mineral mining and quarrying	np	np	np	88 760	179 468
Exploration and other mining support services	np	7 380	np	133 033	220 692
Total Mining	5 651	145 027	1 537 469	2 006 644	3 694 791
MANUFACTURING					
Food product manufacturing	2 249	28 706	122 756	274 085	427 796
Beverage and tobacco product manufacturing	np	3 046	np	38 465	49 031
Textile, leather, clothing and footwear manufacturing	1 481	2 866	np	18 788	np
Wood product manufacturing	np	np	12 641	43 295	57 456
Pulp, paper and converted paper product manufacturing	—	np	np	45 242	np
Printing (including the reproduction of recorded media)	np	1 084	np	19 812	30 965
Petroleum and coal product manufacturing	239	1 436	18 219	57 614	77 508
Basic chemical and chemical product manufacturing	3 855	83 965	239 554	291 638	619 012
Polymer product and rubber product manufacturing	3 128	7 838	35 601	63 779	110 346
Non-metallic mineral product manufacturing	2 212	14 668	34 661	93 718	145 259
Primary metal and metal product manufacturing	1 347	17 982	94 390	324 485	438 204
Fabricated metal product manufacturing	894	11 193	58 099	118 218	188 404
Transport equipment manufacturing	1 580	14 971	113 069	737 666	867 286
Machinery and equipment manufacturing	5 901	35 616	410 469	523 313	975 299
Furniture and other manufacturing	746	3 260	7 051	19 505	30 562
Total Manufacturing	24 928	227 752	1 296 319	2 669 623	4 218 622
ELECTRICITY, GAS, WATER AND WASTE SERVICES					
Electricity supply	245	4 312	116 064	97 373	217 994
Gas supply	—	—	np	np	np
Water supply, sewerage and drainage services	np	8 906	24 272	np	np
Waste collection, treatment and disposal services	np	2 171	np	59 528	75 161
Total Electricity, gas, water and waste services	1 238	15 389	213 885	164 200	394 712
CONSTRUCTION					
Building construction	593	19 472	234 655	271 168	525 888
Heavy and civil engineering construction	764	3 010	116 821	164 203	284 798
Construction services	1 248	3 752	34 460	126 411	165 871
Total Construction	2 605	26 234	385 936	561 782	976 557
WHOLESALE TRADE					
Basic material wholesaling	2 280	6 042	30 716	44 299	83 337
Machinery and equipment wholesaling	2 198	16 517	109 708	138 342	266 765
Motor vehicle and motor vehicle parts wholesaling	—	np	np	np	105 404
Grocery, liquor and tobacco product wholesaling	np	np	np	21 163	53 065
Other goods wholesaling	np	np	60 773	177 574	243 589
Commission-based wholesaling	np	—	np	np	8 591
Total Wholesale trade	5 971	28 767	242 461	483 552	760 751

For footnotes see end of table.

...continued

26.4 BUSINESS EXPENDITURE ON R&D, By industry and by type of activity—2009–10 — continued

<i>Industry(a)</i>	<i>Pure basic research</i> \$'000	<i>Strategic basic research</i> \$'000	<i>Applied research</i> \$'000	<i>Experimental development</i> \$'000	<i>Total expenditure on R&D</i> \$'000
RETAIL TRADE					
Motor vehicle and motor vehicle parts retailing	—	—	np	np	10 623
Fuel retailing	—	—	np	—	np
Food retailing	np	—	np	np	np
Other store-based retailing	np	np	13 266	38 842	58 766
Non-store retailing and retail commission-based buying and/or selling	—	np	2 879	np	np
Total Retail trade	1 356	7 738	24 577	78 144	111 815
ACCOMMODATION AND FOOD SERVICES					
Accommodation	—	np	np	np	2 658
Food and beverage services	np	np	1 857	np	19 545
Total Accommodation and food services	np	np	np	19 554	22 203
TRANSPORT, POSTAL AND WAREHOUSING					
Road transport	np	np	1 641	24 430	26 776
Rail transport	np	np	np	np	np
Water transport	—	—	—	—	—
Air and space transport	—	—	np	np	np
Other transport	—	—	np	np	np
Postal and courier pick-up and delivery services	np	6 061	np	36 427	51 144
Transport support services	np	np	26 718	29 769	57 632
Warehousing and storage services	np	np	4 223	20 472	24 964
Total Transport, postal and warehousing	2 378	10 803	53 493	185 260	251 934
INFORMATION MEDIA AND TELECOMMUNICATIONS					
Publishing (except Internet and music publishing)	607	5 546	17 963	82 555	106 671
Motion picture and sound recording activities	np	np	6 898	10 494	19 076
Broadcasting (except Internet)	—	—	np	np	37 083
Internet publishing and broadcasting	np	np	np	6 006	np
Telecommunications services	np	np	97 368	np	272 724
Internet service providers, web search portals and data processing services	623	2 883	14 414	18 205	36 125
Library and other information services	—	—	np	np	np
Total Information media and telecommunications	2 373	21 077	146 980	311 471	481 901
FINANCIAL AND INSURANCE SERVICES					
Finance	np	np	441 508	1 853 247	2 310 892
Insurance and superannuation funds	np	np	np	103 613	128 685
Auxiliary finance and insurance services	np	17 170	np	82 090	211 114
Total Financial and insurance services	2 652	38 411	570 678	2 038 950	2 650 691
RENTAL, HIRING AND REAL ESTATE SERVICES					
Rental and hiring services (except real estate)	np	np	21 980	109 506	140 079
Property operators and real estate services	np	np	5 310	8 229	14 293
Total Rental, hiring and real estate services	1 593	7 754	27 290	117 735	154 372
PROFESSIONAL, SCIENTIFIC AND TECHNICAL SERVICES					
Professional, scientific and technical services (except computer system design and related services)	12 440	97 963	698 342	664 891	1 473 636
Computer system design and related services	13 160	81 186	397 088	550 916	1 042 350
Total Professional, scientific and technical services	25 600	179 149	1 095 430	1 215 807	2 515 986
ADMINISTRATIVE AND SUPPORT SERVICES					
Administrative services	np	np	33 876	32 727	69 811
Building cleaning, pest control and other support services	np	np	1 810	4 189	6 989
Total Administrative and support services	990	3 208	35 686	36 916	76 800

For footnotes see end of table.

...continued

26.4 BUSINESS EXPENDITURE ON R&D, By industry and by type of activity—2009–10 — continued

Industry(a)	Pure basic research \$'000	Strategic basic research \$'000	Applied research \$'000	Experimental development \$'000	Total expenditure on R&D \$'000
PUBLIC ADMINISTRATION AND SAFETY(b)					
Public order, safety and regulatory services	np	420	np	4 866	9 447
Total Public administration and safety(b)	np	420	np	4 866	9 447
EDUCATION AND TRAINING					
Preschool and school education	—	—	—	—	—
Tertiary education	np	np	1 317	4 915	6 825
Adult, community and other education	np	np	2 566	708	3 436
Total Education and training	np	np	3 883	5 623	10 261
HEALTH CARE AND SOCIAL ASSISTANCE					
Hospitals	np	np	np	np	np
Medical and other health care services	np	np	22 865	np	np
Residential care services	—	np	—	—	np
Social assistance services	np	np	np	np	999
Total Health care and social assistance	3 242	14 992	33 635	25 357	77 226
ARTS AND RECREATION SERVICES					
Heritage activities	np	np	np	np	np
Creative and performing arts activities	np	np	np	np	4 777
Sports and recreation activities	—	np	3 151	np	np
Gambling activities	—	—	np	np	np
Total Arts and recreation services	np	np	8 678	21 350	33 754
OTHER SERVICES(b)					
Repair and maintenance	822	2 623	10 155	27 762	41 362
Personal and other services	693	1 049	5 220	11 087	18 049
Total Other services(b)	1 515	3 672	15 375	38 849	59 411
Total	85 162	754 417	5 771 705	10 073 798	16 685 082

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Classified according to the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0)*.

(b) Not all subdivisions were included in the scope of the 2009–10 survey.

Source: *Research and Experimental Development, Businesses, Australia, 2009–10 (8104.0)*.

In 2009–10, the largest businesses (those with 200 or more employees) made the largest contribution to BERD (\$11,477m or 69%), followed by businesses with 20–199 employees (\$3,097m or 19%). The overall decrease in BERD for 2009–10 was attributable to businesses with 200 or more employees, which decreased \$582 million compared to the overall decrease of \$579 million. In 2009–10, these businesses also had the largest percentage decrease in BERD (down 5%) and the largest decrease in proportional share of total BERD (down 1 percentage point), compared to 2008–09.

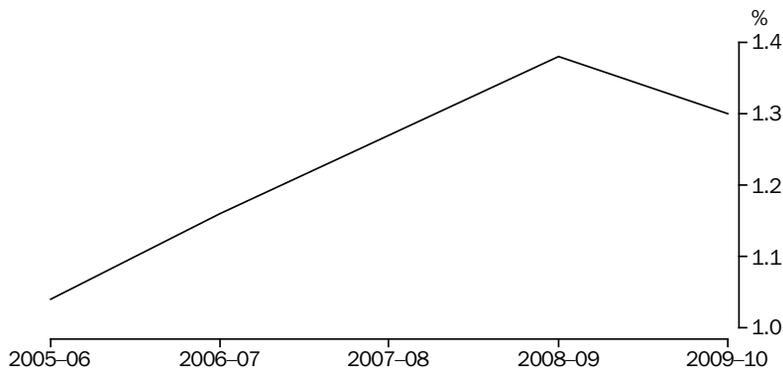
The business sector was the main source of BERD funds in 2009–10, with \$15,930 million (96% of total BERD) coming from Own funds and \$193 million (1% of total BERD) from Other business. Commonwealth government and

Overseas sources were the next largest funders of BERD, at \$308 million (2% of total BERD) and \$166 million (1% of total BERD), respectively.

New South Wales and Victoria continued to have the highest levels of BERD in 2009–10, at \$6,194 million (37% of total BERD) and \$3,750 million (22% of total BERD), respectively. In 2009–10, NSW, Northern Territory and Overseas were the only locations with increased BERD compared to 2008–09. NSW had the largest dollar increase (up \$832m) and also the largest increase in proportional share of total BERD (up 6 percentage points to 37%). Growth in BERD in NSW was driven by the Financial and insurance services industry (up \$584m in NSW).

In 2009–10, the majority of BERD continued to be directed into Experimental development

26.5 BUSINESS EXPENDITURE ON R&D, AUSTRALIA, Proportion of GDP



Source: *Research and Experimental Development, Businesses, Australia (8104.0)*.

(\$10,074m or 60% of total BERD) and Applied research (\$5,772m or 35% of total BERD). Between 2008-09 and 2009-10, expenditure on Experimental development fell by \$316 million, with Applied research falling by \$150 million.

As in previous years, the two Fields of research (FOR), Engineering and Information and computing sciences accounted for more than 80% of total BERD in 2009-10.

The distribution of BERD across the Socio-economic objective (SEO) sectors of Defence, Economic development, Society, Environment and Expanding knowledge remained relatively stable between 2008-09 and 2009-10. At the SEO division level, Manufacturing accounted for the largest share of total BERD in 2009-10, at \$4,383 million, or 26%. Commercial services and tourism and Energy SEOs had the next highest levels of BERD, at \$3,161 million (19% of total BERD) and \$2,722 million (16% of total BERD), respectively.

Of all SEO divisions, Mineral resources (excluding energy resources) had the largest dollar and percentage decrease in BERD, down \$846 million (or 32%) compared to 2008-09, and the largest decrease in proportional share of total BERD (down 4 percentage points from 15% to 11% in 2009-10). The Commercial services and tourism SEO division had the largest dollar increase in BERD compared to 2008-09 (up \$745m) and the largest increase in proportional share of total BERD (up 5 percentage points from 14% to 19% in 2009-10).

Wholly Australian-owned businesses made the largest contribution to total BERD, accounting

for \$8,614 million or 52% in 2009-10. These businesses also had the largest dollar increase (up \$767m) and the largest increase in proportional share of total BERD (up 6 percentage points from 46%) compared to 2008-09.

BERD as a proportion of gross domestic product (GDP) decreased between 2008-09 and 2009-10, down from 1.38% to 1.30% (graph 26.5).

Higher education sector

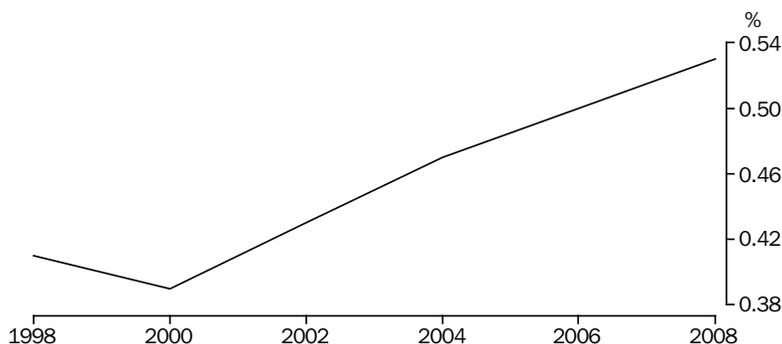
During the 2008 calendar year, expenditure on R&D undertaken by Australian higher education institutions (HERD) was \$6,717m. Over the same period, human resources devoted to R&D by these institutions represented 61,310 person years of effort (PYE).

Most higher education human resources devoted to R&D in 2008 were Postgraduate students and Academic staff, accounting for 56% and 31% of total PYE, respectively. The remaining 13% was attributable to Other staff directly supporting R&D.

In 2008, HERD showed an increase of 24% in current price terms over 2006, and 18% in chain volume terms. HERD as a proportion of GDP increased from 0.50% in 2006 to 0.53% in 2008 (graph 26.6).

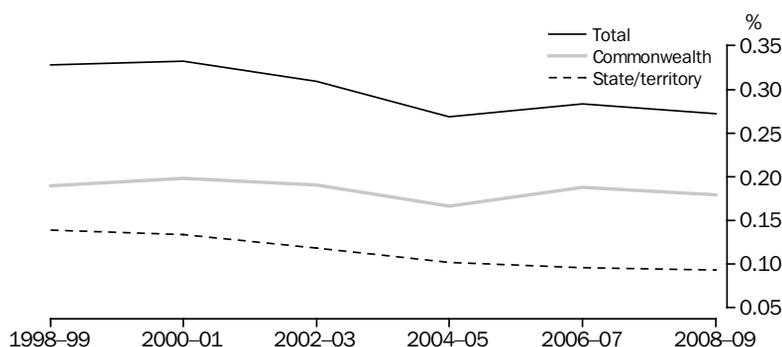
The main sources of funds for HERD in 2008 were General university funds (\$3,523m or 52% of HERD) and Australian competitive research grants (\$1,181m or 18% of HERD). These were also the major sources of funds in 2006.

26.6 HIGHER EDUCATION SECTOR EXPENDITURE ON R&D, Proportion of GDP



Source: Research and Experimental Development, Higher Education Organisations, Australia (8111.0).

26.7 GOVERNMENT SECTOR EXPENDITURE ON R&D, AUSTRALIA, Proportion of GDP



Source: Research and Experimental Development, Government and Private Non-Profit Organisations, Australia (8109.0).

In 2008, higher education institutions based in New South Wales, Victoria and Queensland altogether contributed almost three-quarters (72%) of HERD (at \$2,015m, \$1,775m and \$1,062m respectively).

In 2008, 41% of HERD (\$2,772m) was directed towards Applied research, 29% (\$1,941m) to Pure basic research, and 21% (\$1,389m) to Strategic basic research. The remaining 9% of HERD (\$615m) was directed towards Experimental development.

Expenditure devoted to Medical and health sciences Field of research (FOR) (\$2,064m) represented 31% of HERD in 2008, and was almost triple the value of the next highest FOR, Biological sciences (\$689m). In total, Medical

and health sciences, Biological sciences and Engineering FORs made up approximately half of total HERD.

Over a third (35% or \$2,347m) of HERD in 2008 was directed to the Socio-economic objective of Health, which includes R&D related to the understanding and treatment of clinical diseases and conditions, and the provision of public health services.

Government sector

During the 2008–09 financial year, expenditure on R&D undertaken by Australian Government organisations (GOVERD) was \$3,420 million. Over the same period, human resources devoted to R&D by these organisations represented 17,042 person years of effort (PYE).

In 2008–09, GOVERD showed an increase of 10% in current price terms from 2006–07, and 4% in chain volume terms. GOVERD as a proportion of GDP decreased from 0.28% in 2006–07 to 0.27% in 2008–09 (graph 26.7).

In 2008–09, the majority of GOVERD was sourced from Own funds at \$2,287 million (or 67%). The next largest source of R&D funds was Other Commonwealth government at \$449 million (or 13% of GOVERD). GOVERD in Victoria (\$811m) and New South Wales (\$780m) accounted for almost half (47%) of total GOVERD in 2008–09.

The distribution of GOVERD across type of activity in 2008–09 was largely unchanged from 2006–07. As observed for 2006–07, more than half of GOVERD was directed into Applied research (56% or \$1,916m in 2008–09) and over a quarter into Strategic basic research (26% or \$892m in 2008–09).

The Fields of research (FOR) attracting the largest amounts of GOVERD were Engineering (\$611m), Agricultural and veterinary sciences (\$545m) and Medical and health sciences (\$452m). These three FORs accounted for 18%, 16% and 13% of total GOVERD, respectively.

In 2008–09, more than half (57%) of GOVERD was directed to the Socio-economic objective (SEO) sectors of Economic development (\$1,159m or 34%) and Environment (\$794m or 23%). At the SEO division level, a similar proportion of GOVERD (53%) was attributable to Environment (\$794m or 23%), Health (\$544m or 16%) and Defence (\$486m or 14%) in 2008–09.

Private non-profit sector

During the 2008–09 financial year, expenditure on R&D undertaken by Australian private non-profit (PNP) organisations (PNPERD) was \$744 million. Over the same period, human resources devoted to R&D by PNP organisations represented 4,788 person years of effort (PYE).

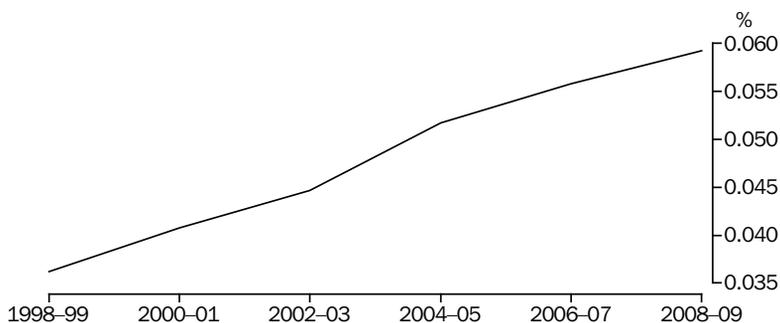
In 2008–09, PNPERD increased by 22% in current price terms compared with 2006–07 and 15% in chain volume terms. PNPERD as a proportion of GDP increased by 6% between 2006–07 and 2008–09 (graph 26.8).

The main sources of funds for PNPERD in 2008–09 were Commonwealth government (\$285m or 38% of total PNPERD) and Own funds (\$179m or 24%). Of all sources of funds, Commonwealth government had the largest dollar increase from 2006–07 (up \$89m) and the largest change in proportional share of PNPERD (up 6 percentage points).

In 2008–09, almost 90% of PNPERD was in Victoria and New South Wales at \$402 million (54%) and \$259 million (35%), respectively. These locations also recorded the highest dollar increases in PNPERD from 2006–07, up \$67 million and \$65 million, respectively.

Almost 70% of PNPERD in 2008–09 was directed into Applied research (\$261m or 35%), and Strategic basic research (\$246m or 33%). PNPERD directed into Experimental development in 2008–09 (\$164m) was more than double than in 2006–07.

26.8 PRIVATE NON-PROFIT SECTOR EXPENDITURE ON R&D, AUSTRALIA, Proportion of GDP



Source: Research and Experimental Development, Government and Private Non-Profit Organisations, Australia (8109.0).

In 2008–09, PNPERD devoted to the Medical and health sciences Field of research (FOR) represented 75% (\$559m) of the total. This was more than four times the next highest FOR, Biological sciences (at \$117m or 16% of PNPERD).

The majority (98%) of PNPERD in 2008–09 was directed to the Socio-economic objective sector of Society. At \$685 million, the Health division contributed 94% to the Society sector and 92% to total PNPERD

Innovation activity of businesses

Innovation is generally considered to be the development, introduction or implementation of new or significantly improved goods, services, processes or methods. Innovation is a key driver of economic growth.

The 2009–10 innovation data were collected in the 2009–10 Business Characteristics Survey (BCS). The scope of innovative activity as measured by the BCS covers four types of innovation by businesses in Australia: goods or services, operational processes, organisational/managerial processes and marketing methods. The survey also covered three statuses of innovation: introduced or implemented, still in development and abandoned.

Based on the combination of type and status of innovative activity, two statistical measures of business innovation have been produced:

- Innovating businesses – businesses which had undertaken any innovative activity during the survey reference period, including businesses which introduced any of the four types of innovation and/or work on the innovative activity was still in development at the end of the period or abandoned at the end of the period or abandoned during the period.
- Innovation-active businesses – businesses which introduced any of the four types of innovation during the survey reference period.

During the year ended 30 June 2010, 44% of Australian businesses were innovation-active. Innovating businesses in Australia represented 39% of all businesses; innovation which was still in development as at 30 June 2010 was undertaken

by 20% of all businesses; and innovation which had been abandoned during the year was undertaken by 7% of all businesses (table 26.9).

Over half of all businesses in Wholesale trade, Arts and recreation services, and Manufacturing were innovation-active (table 26.10).

Goods or services innovation

One-fifth (20%) of businesses introduced new or significantly improved goods or services during 2009–10. A slightly higher proportion of businesses introduced new services (13%) than new goods (11%). The proportion of businesses which abandoned the development or introduction of new goods or services was 3%. Businesses in Wholesale trade (32%), Retail trade (27%) and Manufacturing (20%) were most likely to have introduced new goods. Businesses in Arts and recreation services (29%) and Financial and insurance services (21%) were most likely to have introduced new services.

Operational process innovation

During 2009–10, 17% of all businesses introduced new or significantly improved operational processes. New supporting activities for business operations, such as maintenance systems or processes for purchasing, accounting or computing was the most reported type of operational process innovation (10%). Businesses with 200 or more persons employed were more than three times as likely (40%) to introduce any new operational processes than businesses with 0–4 persons employed (12%). Businesses in Mining had the highest proportion of operational processes still in development (14%).

Organisational/managerial process innovation

Overall, 21% of all businesses introduced new or significantly improved organisational/managerial processes in 2009–10. Arts and recreation services had the highest proportion of businesses introducing organisational/managerial innovation (28%), followed closely by Professional, scientific and technical services (26%). In contrast, businesses in Transport, postal and warehousing (13%) had the lowest proportion of businesses introducing some form of organisational/managerial innovation.

26.9 SUMMARY OF INNOVATIVE ACTIVITY IN AUSTRALIAN BUSINESS(a), Key indicators

		2008–09(b)	2009–10(b)	2009–10(c)
Estimated number of businesses(d)	'000	713	717	776
Businesses which introduced any new or significantly improved:(e)				
goods or services	%	18.2	20.8	19.8
operational processes	%	16.3	17.0	16.9
organisational/managerial processes	%	19.4	21.2	20.7
marketing methods	%	17.2	17.1	16.7
Businesses which introduced innovation (innovating businesses)	%	35.0	39.5	38.6
Businesses with innovative activity which was:				
still in development	%	17.6	20.4	19.9
abandoned	%	6.5	7.5	7.3
Businesses with any innovative activity (innovation-active businesses)	%	39.8	44.7	43.8

(a) Proportions are of all businesses.

(b) Excludes businesses in the Agriculture, forestry and fishing industry.

(c) Includes businesses in the Agriculture, forestry and fishing industry.

(d) Business counts are provided for contextual information only, please refer to explanatory notes 20 and 21 of Summary of IT Use and Innovation in Australian Business, 2009–10 (8166.0).

(e) Businesses may be counted in more than one category.

Source: *Summary of IT Use and Innovation in Australian Business, 2009–10 (8166.0)*.

26.10 SUMMARY OF INNOVATIVE ACTIVITY IN AUSTRALIAN BUSINESS, Selected characteristics(a)—2009–10

	BUSINESSES WHICH:			
	Introduced innovation (innovating businesses) %	Started but did not yet complete any innovative activity %	Started but abandoned any innovative activity %	Were innovation-active %
Employment size				
0–4 persons	30.5	15.0	6.5	35.7
5–19 persons	49.2	26.4	8.5	54.7
20–199 persons	56.6	30.4	8.8	61.2
200 or more persons	69.7	44.5	9.4	74.3
Industry(b)				
Agriculture, forestry and fishing	27.7	14.2	4.9	32.5
Mining	38.2	25.5	6.5	45.8
Manufacturing	46.5	25.6	10.6	50.7
Electricity, gas, water and waste services	33.4	15.3	11.3	42.0
Construction	30.9	15.5	6.1	37.6
Wholesale trade	49.5	30.5	11.9	59.0
Retail trade	47.6	24.1	8.0	49.7
Accommodation and food services	42.8	17.8	9.4	46.9
Transport, postal and warehousing	20.6	8.3	2.5	22.5
Information media and telecommunications	41.0	27.3	9.4	48.9
Financial and insurance services	45.0	25.1	9.4	49.1
Rental, hiring and real estate	40.2	18.3	10.0	46.9
Professional, scientific and technical services	42.9	23.8	6.6	49.2
Administrative and support services	31.7	17.9	5.6	37.2
Health care and social assistance	40.9	20.7	6.6	45.6
Arts and recreation services	52.4	24.4	7.6	55.8
Other services	35.5	17.0	6.3	40.8
Total	38.6	19.9	7.3	43.8

(a) Proportions are of businesses in each employment size and industry category.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Selected Characteristics of Australian Business, 2009–10 (8167.0)*.

Marketing methods innovation

During 2009–10, 17% of businesses introduced new or significantly improved marketing methods. Businesses were three times as likely to introduce new media techniques for product promotion (12%) than any other type of marketing method innovation. Accommodation and food services had the highest proportion of businesses that introduced some form of marketing innovation (26%). Businesses in Manufacturing and Rental, hiring and real estate services were most likely to have abandoned marketing methods innovation (both 6%).

Innovation still in development

One-fifth (20%) of businesses had innovation activity that was still in development in 2009–10. Businesses with 200 or more persons employed were the most likely to report any innovation still in development (44%), compared to 15% of businesses with 0–4 persons employed. New marketing methods was the most commonly reported type of innovation that was still in development (10%) as at 30 June 2010. Wholesale trade (30%) had the highest proportion of businesses with innovative activity still in development.

Abandoned innovative activity

In 2009–10, 7% of Australian businesses abandoned at least one innovative activity. New

marketing methods was the most commonly reported type of innovative activity that was abandoned during the year ended 30 June 2010 (4%). By industry, the highest proportion of abandoned innovative activity was reported by businesses in Wholesale trade (12%), while the lowest was Transport, postal and warehousing (2%).

Overall, 45% of businesses had at least one barrier to innovation, with the most common being lack of access to additional funds (18%). Businesses in Manufacturing (56%) were the most likely to have at least one barrier to innovation. Businesses in Manufacturing and Construction were the most likely to cite lack of skilled persons within the labour market as a barrier to innovation (20%).

International comparisons

Table 26.11 shows BERD to GDP ratios for member countries of the Organisation for Economic Co-operation and Development (OECD), while table 26.12 shows GERD to GDP ratios and table 26.13 shows HERD to GDP ratios.

Users should note that, for tables 26.11 to 26.13, data for the final year of the series are unavailable for a number of countries at time of preparation. Once additional country data become available, the order of countries may change.

26.11 BUSINESS EXPENDITURE ON R&D to GDP RATIOS OF OECD COUNTRIES(a)(b)

	2005	2006	2007	2008	2009
	%	%	%	%	%
Israel	3.43	3.50	3.88	3.78	3.42
Finland	2.46	2.48	2.51	2.76	2.83
Sweden	2.59	2.75	2.47	2.74	2.55
Japan	2.54	2.63	2.68	2.70	2.53
Korea, Republic of (South)	2.15	2.32	2.45	2.53	na
Switzerland	na	na	na	2.20	na
United States of America	1.80	1.86	1.92	2.02	na
Denmark	1.68	1.66	1.80	2.01	2.02
Austria	1.73	1.73	1.78	1.88	1.94
Germany	1.72	1.77	1.77	1.86	1.88
Iceland	1.43	1.59	1.46	1.44	na
France	1.30	1.32	1.31	1.32	1.37
Belgium	1.25	1.29	1.32	1.32	1.32
Australia(c)	1.04	1.16	1.27	1.38	1.30
Luxembourg	1.35	1.43	1.32	1.22	1.24
Slovenia	0.84	0.94	0.87	1.07	1.20
Ireland	0.82	0.83	0.85	0.94	1.17
United Kingdom	1.06	1.08	1.11	1.10	1.12
Canada	1.14	1.14	1.09	0.99	1.00
Czech Republic	0.89	1.01	0.95	0.91	0.92
Norway	0.82	0.82	0.85	0.86	0.91
Netherlands	1.01	1.01	0.96	0.88	0.86
Portugal	0.30	0.46	0.60	0.75	0.77
Spain	0.60	0.67	0.71	0.74	0.72
Hungary	0.41	0.48	0.49	0.52	0.66
Italy	0.55	0.55	0.61	0.65	0.65
Estonia	0.42	0.50	0.52	0.56	0.64
New Zealand	0.47	na	0.50	na	na
Turkey	0.20	0.21	0.30	0.32	0.34
Slovakia	0.25	0.21	0.18	0.20	0.20
Mexico	0.19	0.18	0.18	na	na
Poland	0.18	0.18	0.17	0.19	0.19
Greece	0.18	0.17	0.17	na	na
Chile	na	na	0.11	0.16	na
Total OECD	1.51	1.55	1.58	1.62	na

na not available

(a) BERD/GDP ratios for some countries are projected or estimated as per the OECD source table.

(b) Countries are ranked by the most recent available BERD/GDP ratio. Once additional 2009 data become available, the order of countries may change.

(c) Data are for 2005–06, 2006–07, 2007–08, 2008–09 and 2009–10.

Source: Except for Australia, the BERD/GDP ratios shown for OECD countries are sourced from *Main Science and Technology Indicators, Vol. 2011/1, OECD*. Ratios for Australia have been calculated using ABS values for BERD and GDP.

26.12 GOVERNMENT EXPENDITURE ON R&D TO GDP RATIOS OF OECD COUNTRIES(a)(b)

	2004	2005	2006	2007	2008
	%	%	%	%	%
Iceland	na	0.65	0.61	0.48	0.47
Korea, Republic of (South)	0.32	0.33	0.35	0.37	na
Germany	0.34	0.35	0.35	0.35	na
New Zealand	na	0.30	na	0.33	na
France	0.37	0.37	0.35	0.32	0.33
Czech Republic	0.28	0.28	0.29	0.32	0.31
Finland	0.33	0.33	0.32	0.29	0.30
United States of America	0.31	0.31	0.30	0.29	0.29
Japan	0.30	0.28	0.28	0.27	na
Australia(c)	0.28	na	0.28	na	0.27
Spain	0.17	0.19	0.20	0.22	0.25
Luxembourg	0.18	0.19	0.20	0.21	0.25
Norway	0.25	0.24	0.24	0.25	0.24
Hungary	0.26	0.27	0.25	0.23	na
Netherlands	0.26	0.24	0.23	0.22	na
Poland	0.22	0.21	0.21	0.20	0.21
Canada	0.18	0.20	0.20	0.19	0.19
Sweden	0.11	0.18	0.17	0.17	0.17
Belgium	0.14	0.15	0.15	0.15	0.17
Italy	0.20	0.19	0.20	0.17	0.16
United Kingdom	0.18	0.18	0.18	0.16	0.16
Slovakia	0.16	0.15	0.16	0.16	0.15
Austria	0.12	0.13	0.13	0.14	na
Greece	0.11	0.12	0.12	0.12	na
Portugal	0.12	0.12	0.12	0.11	0.12
Mexico	0.10	0.10	0.10	0.10	na
Ireland	0.09	0.09	0.09	0.09	0.11
Denmark	0.17	0.16	0.16	0.08	0.09
Turkey	0.04	0.07	0.07	0.08	na
Switzerland	0.03	na	0.02	—	0.02
Total OECD	0.26	0.26	0.26	0.25	na

— nil or rounded to zero (including null cells)

na not available

(a) GOVERD/GDP ratios for some countries are projected or estimated as per the OECD source table.

(b) Countries are ranked by the most recent available GOVERD/GDP ratio. Once additional 2008 data become available, the order of countries may change.

(c) Data are for 2004–05, 2006–07 and 2008–09.

Source: Except for Australia, the GOVERD/GDP ratios shown for OECD countries are sourced from *Main Science and Technology Indicators, Vol 2011/1, OECD*. Ratios for Australia have been calculated using ABS values for GOVERD and GDP.

26.13 HIGHER EDUCATION EXPENDITURE ON R&D TO GDP RATIOS OF OECD COUNTRIES(a)(b)

	2004	2005	2006	2007	2008
	%	%	%	%	%
Sweden	0.83	0.79	0.77	0.77	0.80
Denmark	0.61	0.61	0.64	0.68	0.71
Iceland	na	0.61	0.71	0.68	0.67
Finland	0.68	0.66	0.65	0.65	0.66
Canada	0.70	0.69	0.66	0.67	0.64
Switzerland	0.67	na	0.66	na	na
Austria	0.60	0.61	0.60	0.61	na
Netherlands	0.52	0.54	0.53	0.52	na
Australia	0.47	na	0.50	na	0.53
Norway	0.47	0.47	0.46	0.52	0.51
Portugal	0.28	0.29	0.33	0.36	0.51
United Kingdom	0.42	0.45	0.46	0.47	0.47
Japan	0.43	0.45	0.43	0.43	na
Germany	0.41	0.41	0.41	0.41	na
Belgium	0.40	0.41	0.40	0.40	0.41
France	0.40	0.40	0.40	0.40	0.40
New Zealand	na	0.38	na	0.36	na
Italy	0.36	0.33	0.34	0.36	0.39
Ireland	0.33	0.34	0.34	0.35	0.39
United States of America	0.37	0.36	0.35	0.35	0.36
Turkey	0.35	0.32	0.30	0.35	na
Korea, Republic of (South)	0.27	0.28	0.30	0.34	na
Spain	0.31	0.33	0.33	0.33	0.36
Greece	0.27	0.28	0.28	0.29	na
Czech Republic	0.18	0.23	0.25	0.26	0.25
Hungary	0.21	0.24	0.24	0.23	na
Poland	0.18	0.18	0.17	0.19	0.20
Slovakia	0.10	0.10	0.12	0.12	0.11
Mexico	0.12	0.12	0.10	0.10	na
Luxembourg	0.02	0.02	0.04	0.05	0.05
Total OECD	0.39	0.39	0.38	0.39	na

na not available

(a) HERD/GDP ratios for some countries are projected or estimated as per the OECD source table.

(b) Countries are ranked by the most recent available HERD/GDP ratio. Once additional 2008 data become available, the order of countries may change.

Source: Except for Australia, the HERD/GDP ratios shown for OECD countries are sourced from the Main Science and Technology Indicators, Vol 2011/1, OECD. Ratios for Australia have been calculated using ABS values for HERD and GDP.

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FINANCIAL SYSTEM

The financial system in Australia can be thought of as having three overlapping components. The first consists of financial enterprises (such as banks) and regulatory authorities (such as the Reserve Bank and the Australian Prudential Regulation Authority). The second consists of financial markets (e.g. the bond market) and their participants (issuers such as governments, and investors such as superannuation funds). The third is the payments system (i.e. the cash, cheque and electronic means by which payments are effected) and its participants (e.g. banks). The interaction of these three components enables funds for investment or consumption to be made available from savings in other parts of the national or international economy.

This chapter provides a summary of the structure and activities of the three components of the Australian financial system.

This chapter contains two special articles, *Recent developments in financial markets* and *Financial co-operatives in Australia*.

Related information can be found in chapter 30 *National accounts* and chapter 31 *International accounts and trade*.

Regulatory framework

From 1 July 1998, a new financial regulatory framework came into effect, in response to the recommendations of the Financial System Inquiry (Wallis Committee). Under the new structure, a single prudential supervisor, the Australian Prudential Regulation Authority (APRA), was established to take responsibility for the supervision of banks, life and general insurance companies, and superannuation funds. The Australian Securities and Investments Commission (ASIC) assumed responsibility for market integrity and consumer protection across the financial system. The Reserve Bank retained responsibility for monetary policy and the maintenance of financial stability, including stability of the payments system.

From 1 July 1999, regulation of building societies and credit unions transferred from the states to APRA. On 1 July 2000, regulation of self-managed superannuation funds was transferred from APRA to the Australian Taxation Office (ATO).

From September 2001, the *Financial Sector (Collection of data) Act 2001* (Cwlth) provided APRA with powers to collect information

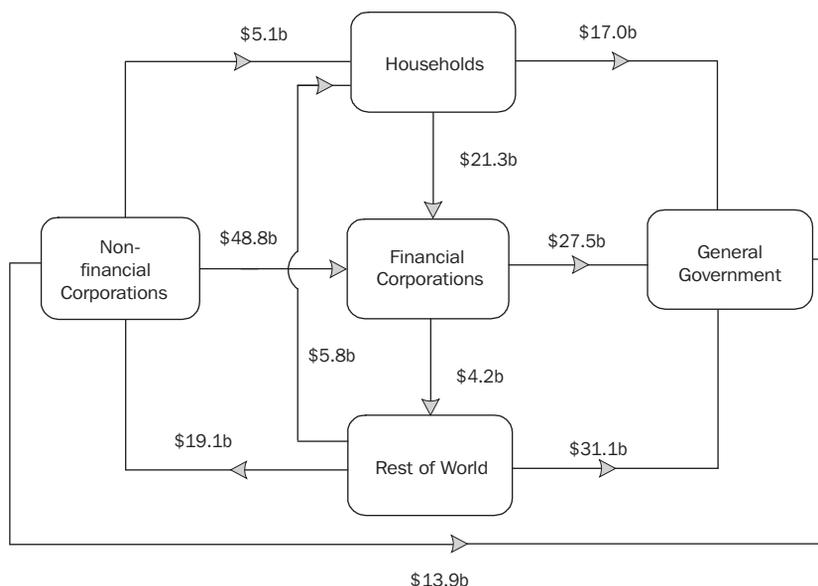
previously collected under a range of legislation. The new legislation enables harmonised and consistent data collection from financial institutions. APRA commenced data collection from registered financial corporations from March 2003.

Health benefit funds, including funds of friendly societies, are regulated by the Private Health Insurance Administration Council under the *Private Health Insurance Act 2007* (Cwlth), while APRA supervises other benefit funds of friendly societies under the *Life Insurance Act 1995* (Cwlth).

Inter-sectoral financial flows

The data collected by APRA are combined with data from other sources by the Australian Bureau of Statistics (ABS) to compile a set of financial accounts according to the international standard, the 2008 System of National Accounts. Diagram 27.1 provides an overview of the flows of capital through the financial system and summarises the end result of applying the current statistical framework. It illustrates the net financial flows between sectors during the year 2010–11.

27.1 INTER-SECTORAL FINANCIAL FLOWS—2010–11



Source: Australian National Accounts: Financial Accounts (5232.0).

The arrows show the net flow from lenders to borrowers. For example, there was a \$21.3 billion net flow from the households sector to financial corporations, a \$48.8 billion net flow from non-financial corporations to financial corporations, and a \$27.5 billion net flow from the financial corporations sector to the general government sector.

Definitions of many of the terms in this chapter can be found in the glossary of ABS publication, *Australian National Accounts: Financial Accounts* (5232.0).

Financial enterprises

Financial enterprises are institutions that engage in acquiring financial assets and incurring liabilities, for example, by taking deposits, borrowing and lending, providing superannuation, supplying all types of insurance cover, leasing, and investing in financial assets.

For national accounting purposes, financial enterprises are grouped into the following sectors:

- Depository corporations – include the Reserve Bank; authorised depository institutions supervised by APRA, including banks, building societies and credit unions; and non-supervised depository corporations registered under the *Financial Sector (Collection of Data) Act 2001* (Cwlth), including merchant banks, pastoral finance companies, finance companies and general financiers.
- Pension funds – cover separately constituted superannuation funds.

- Life insurance corporations – cover the statutory and shareholders' funds of life insurance companies, and similar activities undertaken by friendly societies and long-service leave boards.
- Non-life insurance corporations – cover health, general insurance and motor vehicle insurance companies.
- Financial investment funds – there are two types of financial investment funds, money market funds and non-money market funds. They cover common funds, cash management trusts, listed and unlisted equity trusts (domestic and international), unlisted mortgage trusts, listed investment companies, wholesale (master) trusts and other trusts (diversified holdings).
- Central borrowing authorities – are captive financial institutions set up by state governments and the Northern Territory Government to provide financial liability and asset management services for those governments.
- Securitiser – are financial institutions that pool various types of assets, such as residential mortgages, and package them as collateral backing for bonds or short-term debt securities, referred to as asset-backed securities, which are then sold to investors.
- Other financial corporations – include other financial intermediaries, financial auxiliaries, money lenders and other captive financial institutions.

Table 27.2 shows the relative size of these sectors in terms of their financial assets. This table has been compiled on a consolidated basis, that is,

27.2 FINANCIAL INSTITUTIONS, Financial assets—30 June

	DEPOSITORY CORPORATIONS					FINANCIAL INVESTMENT FUNDS					Other financial corporations	Consolidated financial sector total		
	Reserve Bank	Banks	Other	Pension funds	Life insurance corp-orations	Other insurance corp-orations	Money market financial funds	Non-money market financial investment funds	Central authorities	Sec-uritiser				
													Non-	
													market	market
\$b	\$b	\$b	\$b	\$b	\$b	\$b	\$b	\$b	\$b	\$b	\$b			
2006	96.4	1 419.5	233.6	827.4	229.7	112.5	42.1	286.1	114.3	198.5	115.4	2 584.9		
2007	119.2	1 661.8	293.3	1 079.7	256.0	139.6	53.7	340.6	132.5	248.0	179.0	3 137.8		
2008	113.0	2 000.7	337.2	1 010.5	233.2	132.2	54.1	299.0	156.2	267.6	161.0	3 301.5		
2009	99.2	2 133.4	331.1	915.8	212.4	129.2	46.0	259.6	210.9	313.0	104.3	3 272.5		
2010	81.5	2 251.1	296.8	1 030.3	228.8	128.0	34.4	278.7	242.8	276.4	102.5	3 434.9		
2011	73.7	2 358.7	299.9	1 134.1	238.8	143.0	22.9	292.1	265.7	272.1	101.3	3 644.1		

Source: *Australian National Accounts: Financial Accounts* (5232.0).

financial claims between institutions in the same grouping have been eliminated. The total is also consolidated, that is, financial claims between the groupings have been eliminated. For this reason, and because there are a number of less significant adjustments made for national accounting purposes, the statistics in the summary table will differ from those presented later in this chapter and published elsewhere.

Banks

Between 1940 and 1959, central banking business was the responsibility of the Commonwealth Bank. The *Reserve Bank Act 1959* (Cwlth) established the Reserve Bank of Australia (RBA) as the central bank, and from 1959 to 1998, the Reserve Bank was responsible for the supervision of commercial banks. From 1 July 1998, APRA assumed responsibility for bank supervision, while the Reserve Bank retained responsibility for monetary policy and the maintenance of financial stability, including stability of the payments system. The RBA also has responsibility for issuing banknote currency, holding Australia's international reserves, holding reserve deposits and providing banking services to the Australian Government. The liabilities and financial assets of the RBA are set out in table 27.3.

Banks are the largest deposit-taking and financial institutions in Australia. At the end of June 2010, there were 55 banks operating in Australia. All are authorised to operate by the *Banking Act 1959* (Cwlth). The four major banks account for nearly three-quarters of the total assets of all banks and provide wide spread banking services and an extensive retail branch network. The remaining banks provide similar banking services through limited branch networks, often located in particular regions. At 30 June 2011, banking services were provided at 30,154 Automatic Teller Machines (ATMs) throughout Australia. The liabilities and financial assets of the banks operating in Australia are shown in table 27.4.

Other depository corporations

Other depository corporations include building societies, credit co-operatives, money market corporations and other registered financial corporations.

The *Financial Corporations Act 1974* (Cwlth) ceased on 1 July 2002. Corporations previously subject to the Act were then required to report statistical data to APRA as Registered Financial Corporations. From 31 March 2003, following changes to the *Financial Sector (Collection*

27.3 RESERVE BANK OF AUSTRALIA, Financial assets and liabilities

	AMOUNTS OUTSTANDING AT 30 JUNE		
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Monetary gold and SDRs(a)	3 172	9 110	8 200
Currency	3	2	2
Deposits	12 927	6 650	12 311
Bills of exchange	266	75	64
One name paper	10 969	10 815	6 430
Bonds	71 061	53 731	45 480
Derivatives	—	—	—
Loans and placements	8	7	6
Other accounts receivable	223	245	425
Total	98 629	80 635	72 918
LIABILITIES			
Currency	50 051	48 752	48 082
Deposits	17 434	20 659	33 683
Derivatives	—	—	—
Unlisted shares and other equity(b)	11 964	9 685	5 336
Other	6 838	2 295	2 150
Total	86 287	81 391	89 251

— nil or rounded to zero (including null cells)

(a) Special Drawing Rights.

(b) Estimates based on net asset values.

Source: *Australian National Accounts: Financial Accounts (5232.0)*.

27.4 BANKS(a), Financial assets and liabilities

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Currency	5 942	5 687	5 728
Deposits	137 535	134 493	139 801
Acceptance of bills of exchange	149 799	139 485	127 428
One name paper	14 169	13 890	24 317
Bonds	194 787	228 749	255 464
Derivatives	136 964	130 396	113 552
Loans and placements	1 373 635	1 485 819	1 592 612
Equities	105 306	107 719	101 392
Prepayments of premiums and reserves	2 199	2 331	2 580
Other accounts receivable	2 941	2 492	6 013
Total	2 123 277	2 251 061	2 368 887
LIABILITIES			
Deposits	1 287 893	1 154 293	1 064 519
Acceptance of bills of exchange	36 842	23 906	12 636
One name paper	159 920	138 054	124 723
Bonds	100 413	110 950	115 892
Derivatives	134 512	125 471	109 494
Loans and placements	110 401	100 777	99 135
Equity	240 617	292 503	302 326
Other accounts payable	11 684	10 090	8 855
Total	2 082 282	1 956 044	1 837 580

(a) Does not include the Reserve Bank of Australia.

Source: Australian National Accounts: Financial Accounts (5232.0).

27.5 OTHER DEPOSITORY CORPORATIONS, Total assets

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
Permanent building societies	21 504	23 681	26 404
Credit co-operatives	46 543	49 988	56 632
Money market corporations	94 512	64 750	66 723
Other registered financial corporations	121 119	103 880	104 515
Total	283 678	242 299	254 274

Source: Managed Funds, Australia (5655.0); APRA; Reserve Bank of Australia.

of Data) Act 2001 (Cwlth), only the following categories of other depository corporations are required to report to APRA:

- Permanent building societies are usually organised as financial co-operatives. They are authorised to accept money on deposit. They provide finance principally in the form of housing loans to their members.
- Credit co-operatives, also known as credit unions, are similar to building societies. As their name implies, they are organised as financial co-operatives that borrow from, and provide finance to, their members.
- Money market corporations operate similar to wholesale banks and for this reason they are often referred to as merchant or investment banks. They have substantial short-term borrowings, which they use to fund business loans and investments in debt securities.
- Other registered financial corporations cover pastoral finance companies, finance companies and general financiers categories. These corporations engage in a variety of borrowing and lending activity.

Table 27.5 shows the total assets of each category of non-bank deposit-taking institution.

Pension funds

Pension funds have been established to provide retirement benefits for their members, who make contributions during their employment and receive the benefits of this form of saving in retirement. There are two basic types of contribution – employer contributions in the form of the superannuation guarantee and voluntary member contributions. In order to receive concessional taxation treatment, a pension fund must elect to be regulated under the *Superannuation Industry (Supervision) Act 1993* (Cwlth) (SIS Act).

Pension funds are supervised by either APRA or the ATO. Some public sector funds are exempt from direct APRA supervision, but are required to

report to APRA under an agreement between the Australian Government and each of the state and territory governments.

The largest group of pension funds, in terms of number and value, is self-managed superannuation funds. From 1 July 2000, the ATO assumed responsibility for their regulation. Self-managed superannuation funds have fewer than five members, generally all of whom are trustees, or directors of a company that is a trustee.

Corporate funds are established for the benefit of employees of a particular entity or a group of related entities, with joint member and employer control. Industry funds generally have closed memberships restricted to the employees of a

27.6 PENSION FUNDS—30 June

Type of fund	NUMBER OF ENTITIES		
	2009	2010	2011
Corporate	190	168	143
Industry	67	65	61
Public sector	40	39	39
Retail	166	154	143
Small funds(a)	406 318	427 825	460 082
Pooled superannuation trusts	82	79	77
Total	406 863	428 330	460 545

(a) Small funds include small APRA funds, single member approved deposit funds and self-managed superannuation funds.

Source: Australian Prudential Regulation Authority.

27.7 PENSION FUNDS, Financial assets

	AMOUNTS OUTSTANDING AT 30 JUNE		
	2009 \$m	2010 \$m	2011 \$m
FINANCIAL ASSETS			
Currency	445	583	542
Deposits	141 649	156 016	172 422
Bills of exchange	4 496	2 894	787
One name paper	24 602	45 743	38 179
Bonds	101 816	109 827	113 496
Derivatives	482	263	410
Loans and placements	6 662	8 219	8 154
Equities	475 508	533 300	619 338
Unfunded superannuation claims	29	31	39
Net equity of pension funds in life office reserves	146 372	159 303	164 222
Other accounts receivable	13 765	14 157	16 543
Total	915 826	1 030 336	1 134 132
LIABILITIES			
Long-term loans and placements	767	664	393
Listed shares and other equity	10	—	—
Net equity in reserves	975 831	1 095 244	1 205 032
Other accounts payable	4 497	4 924	5 436
Total	981 105	1 100 832	1 210 861

— nil or rounded to zero (including null cells)

Source: Australian National Accounts: Financial Accounts (5232.0).

particular industry and are established under an agreement between the parties to an industrial award.

Public sector funds provide benefits for government employees, or are schemes established by a Commonwealth, state or territory law. Retail funds offer superannuation products to the public on a commercial basis. All eligible roll-over funds and multi-member approved deposit funds are also classified as retail funds. Superannuation funds regulated by APRA with fewer than five members and an Extended Public Offer Entity Licensee are known as small APRA funds.

In addition to separately constituted funds, the SIS Act also provides for special accounts operated by financial institutions earmarked for superannuation contributions, known as Retirement Savings Accounts, that also qualify for concessional taxation and are under the supervision of APRA. The liabilities represented by these accounts are liabilities of the institutions concerned and are included with the relevant institution in this chapter (e.g. retirement savings

accounts operated by banks are included in bank deposits in table 27.4).

The number of pension funds is shown in table 27.6. The assets of pension funds are shown in table 27.7. The financial assets in the table do not separately identify any provision for the pension liabilities of governments to public sector employees in respect of unfunded retirement benefits. These pension liabilities are recorded in the government accounts. At 30 June 2011, the ABS estimate for claims by households on governments for these outstanding liabilities was \$262.6 billion.

Life insurance corporations

Life insurance corporations offer termination insurance and investment policies. Termination insurance includes the payment of a sum of money on the death or permanent disability of the insured. Investment products include annuities and superannuation plans. The life insurance industry in Australia consists of 31 direct insurers, including six reinsurers. As with the banking industry, the life insurance industry is

27.8 LIFE INSURANCE CORPORATIONS(a), Financial assets and liabilities

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Currency	6	—	—
Deposits	8 444	7 639	8 557
Bills of exchange	3 160	1 167	602
One name paper	8 335	9 836	7 147
Bonds	23 794	25 912	24 720
Derivatives	3 821	2 092	3 976
Loans and placements	3 814	3 701	3 584
Equities	157 603	175 253	186 723
Other accounts receivable	2 662	2 263	2 456
Total	211 639	227 863	237 765
LIABILITIES			
Bills of exchange	5	3	4
Bonds etc. issued in Australia	—	—	—
Bonds etc. issued offshore	2 324	2 240	2 324
Derivatives	3 062	1 649	2 946
Loans and placements	2 372	1 865	1 323
Listed and unlisted equity	19 093	19 187	23 569
Net equity in reserves	52 264	56 411	54 134
Net equity of pension funds	146 372	159 303	164 222
Other accounts payable	16	5	6
Total	225 508	240 663	248 528

— nil or rounded to zero (including null cells)

(a) Includes friendly societies.

Source: Australian National Accounts: Financial Accounts (5232.0).

dominated by a few very large companies, which hold a majority of the industry's assets.

Life insurance companies are supervised by APRA under the *Life Insurance Act 1995* (Cwlth). APRA also regulates 14 friendly societies, which offer services similar to life insurance corporations.

Table 27.8 shows the financial assets and liabilities arising from both policyholder and shareholder investment in life insurance corporations and friendly societies.

Non-life insurance corporations

This sector includes all corporations that provide insurance other than life insurance, including reinsurance services provided to other insurance corporations. Included in general insurance is house, motor vehicle (domestic and commercial), fire, accident, employer liability, health, travel, marine and aviation, mortgage and consumer credit insurers.

Private health insurers are regulated by the Private Health Insurance Administration Council under the *Private Health Insurance Act 2007* (Cwlth). At 30 June 2011, there were 38 private

health insurers, including health benefit funds of friendly societies. Other private insurers are supervised by APRA under the *Insurance Act 1973* (Cwlth). At 30 June 2010, there were 104 insurers authorised to conduct new or renewal general insurance supervised by APRA. There are 10 separately constituted public sector insurance corporations with significant assets.

Table 27.9 shows the financial assets and liabilities of non-life insurance corporations.

Financial investment funds

Included under financial investment funds are retail and wholesale (master) trusts, common funds and listed investment companies.

Retail trusts are collective investment funds open to the Australian public. Their operations are governed by a trust deed, which is administered by a management company. Under the *Managed Investments Act 1997* (Cwlth), the management company is the single responsible entity for both investment strategy and custodial arrangements. The latter previously had been the responsibility of a trustee. Retail trusts raise funds by issuing shares or units to the public, either via a

27.9 NON-LIFE INSURANCE CORPORATIONS, Financial assets and liabilities

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Currency	100	15	11
Deposits	12 355	13 232	13 917
Bills of exchange	2 727	2 301	953
One name paper	12 538	11 067	11 552
Bonds	42 617	39 237	41 606
Derivatives	1 009	1 129	1 429
Loans and placements	5 342	5 435	5 712
Equities	42 500	43 666	46 921
Other accounts receivable	10 027	11 897	20 907
Total	129 215	127 979	143 008
LIABILITIES			
Bills of exchange	24	29	18
One name paper on issue	695	334	301
Bonds on issue	3 712	4 281	4 205
Derivatives	794	990	1 119
Short-term loans and placements	661	795	4 517
Long-term loans and placements	2 749	2 521	6 284
Listed shares and other equity	28 007	26 864	26 933
Unlisted shares and other equity	31 485	31 777	32 764
Prepayment of premiums	73 260	77 726	85 953
Other accounts receivable	7 992	7 832	8 482
Total	149 381	153 149	170 576

Source: Australian National Accounts: Financial Accounts (5232.0).

prospectus or a distribution channel such as a platform (an Internet sale tool, operated by financial services firms that can be thought of as an investment product menu). These trusts allow their unit holders to dispose of their units relatively quickly. They may sell them back to the manager if the trust is unlisted, or sell them on the Australian Stock Exchange (ASX) if the trust is listed. While these trusts are not subject to supervision by APRA or registered under the *Financial Sector (Collection of Data) Act 2001* (Cwlth), they are subject to the provisions of corporations law, which includes having their prospectus registered with the Australian Securities and Investments Commission (ASIC).

Wholesale (master) trusts included as financial investment funds are open to institutional investors, such as life insurance corporations, retail trusts, corporate clients, and high net worth individuals. They have high entry levels (e.g. \$500,000 or above), although they are becoming increasingly open to the general public via distribution channels such as platforms. Wholesale trusts may issue a prospectus, but more commonly issue an information memorandum.

Common funds are set up by trustee companies and are governed by state and territory Trustee Acts. They allow the trustee companies to combine depositors' funds and other funds held in trust in an investment pool. They are categorised according to the main types of assets in the pool, for example, cash funds or equity funds.

Listed investment companies are similar to equity trusts or funds in that they invest in the shares of other companies. However, investors in investment companies hold share assets, not unit assets.

There are two types of financial investment funds, money market funds and non-money market funds.

Money market financial investment funds

Money market funds include cash management trusts and cash common funds. They invest primarily in bank deposits and money market transferable debt instruments with a residual maturity of less than one year (such as bank certificate of deposits). Table 27.10 shows the financial assets and liabilities of money market financial investment funds.

27.10 MONEY MARKET FINANCIAL INVESTMENT FUNDS, Financial assets and liabilities

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Deposits	5 840	6 445	5 778
Bills of exchange	8 237	4 469	241
One name paper	28 716	20 787	14 854
Bonds	2 750	1 733	1 142
Derivatives	—	—	—
Loans and placements	9	1	—
Equity	398	774	788
Other accounts receivable	68	118	50
Total	46 018	34 327	22 853
LIABILITIES			
Drawings of bills of exchange	—	—	—
One name paper	—	—	—
Bonds	—	—	—
Derivatives	—	—	—
Loans and placements	5	—	—
Equity	45 719	38 035	24 634
Other accounts payable	61	42	99
Total	45 785	38 077	24 733

— nil or rounded to zero (including null cells)

Source: Australian National Accounts: Financial Accounts (5232.0).

Non-money market financial investment funds

Non-money market investment funds invest in financial assets. The funds include unlisted mortgage trusts, listed and unlisted equity trusts, and wholesale (master) trusts. Table 27.11 shows the financial assets and liabilities of non-money market financial investment funds.

Central borrowing authorities

Central borrowing authorities are institutions established by the state governments and the Northern Territory Government primarily to provide finance for public corporations and quasi-corporations, and other units owned or controlled by those governments. They also arrange investment of the units' surplus funds. The central borrowing authorities borrow funds, mainly by issuing securities, and lend these funds to their public sector clientele. However, they also engage in other financial intermediation activity for investment purposes, and may engage in the financial management activities of the parent government. Table 27.12 shows the financial assets and liabilities held by the central borrowing authorities.

Securitisers

Securitisers are trusts or corporations that pool various types of assets such as residential mortgages, commercial property loans and credit card debt, and package them as collateral backing for bonds or short-term debt securities, referred to as asset-backed securities. These are then sold to investors. The most common assets bought by securitisers are residential mortgages, originated by financial institutions such as banks and building societies or specialist mortgage managers. Securitisers generally pool the assets and use the income on them to pay interest to the holders of the asset-backed securities. Table 27.13 shows the financial assets and liabilities held by the central borrowing authorities.

Other financial corporations

This classification comprises other financial intermediaries, financial auxiliaries, money lenders and other captive financial institutions.

Included in other financial intermediaries are:

- various housing finance schemes established by state and territory governments to assist first home buyers

27.11 NON-MONEY MARKET FINANCIAL INVESTMENT FUNDS, Financial assets and liabilities

	AMOUNTS OUTSTANDING AT 30 JUNE		
	2009 \$m	2010 \$m	2011 \$m
FINANCIAL ASSETS			
Currency	24	59	np
Deposits	11 370	12 347	12 676
Bills of exchange	2 638	2 496	np
One name paper	12 897	12 797	17 727
Bonds	42 757	47 058	49 334
Derivatives	158	730	193
Loans and placements	20 622	19 045	14 142
Equities	167 275	181 999	194 781
Other accounts receivable	1 865	2 174	1 971
Total	259 606	278 705	292 051
LIABILITIES			
Bonds, etc issued in Australia	434	225	97
Bonds, etc issued offshore	435	328	115
Derivatives	2 837	3 303	2 729
Long-term loans and placements	10 713	8 730	7 177
Listed shares and other equity	40 156	48 706	38 899
Unlisted shares and other equity	222 713	245 667	254 781
Total	277 913	306 959	303 798

np not available for publication but included in totals where applicable, unless otherwise indicated

Source: Australian National Accounts: Financial Accounts (5232.0).

27.12 CENTRAL BORROWING AUTHORITIES, Financial assets and liabilities

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Deposits	6 639	11 692	15 207
Bills of exchange	4 676	4 578	3 891
One name paper	21 402	16 905	14 177
Bonds	9 398	10 711	9 558
Derivatives	16 132	15 186	13 319
Loans and placements	127 941	159 562	179 210
Other accounts receivable	2 557	1 719	1 197
Total	188 745	220 353	236 559
LIABILITIES			
Drawings of bills of exchange	—	—	—
One name paper	14 824	16 467	20 981
Bonds issued in Australia	107 989	142 544	156 801
Bonds issued offshore	21 837	16 821	10 151
Derivatives	17 808	16 619	14 754
Loans and placements	49 107	51 265	63 040
Equity(a)	-3 655	-2 805	-1 702
Other accounts payable	2 198	1 514	3 113
Total	210 108	242 425	267 138

— nil or rounded to zero (including null cells)

(a) Net asset value.

Source: Australian National Accounts: Financial Accounts (5232.0).

27.13 SECURITISERS, Financial assets and liabilities

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Deposits	8 208	4 092	3 705
Bills of exchange	817	306	35
One name paper	238	101	—
Bonds	525	435	275
Derivatives	126	134	123
Loans and placements	299 988	268 763	267 630
Other accounts receivable	3 109	2 583	428
Total	313 011	276 414	272 196
LIABILITIES			
Drawings of bills of exchange	—	—	—
One name paper	28 879	19 359	14 556
Bonds issued in Australia	225 492	213 393	222 866
Bonds issued offshore	50 699	31 821	19 963
Derivatives	74	68	68
Loans and placements	7 209	8 028	8 662
Equity	1 412	588	1 092
Other accounts payable	1 912	1 210	1 191
Total	315 677	274 467	268 398

— nil or rounded to zero (including null cells)

Source: Australian National Accounts: Financial Accounts (5232.0).

- co-operative housing societies that raise money through loans from members (rather than deposits) and provide finance to members in the form of housing loans
- economic development corporations owned by governments, and which finance infrastructure developments mainly in their home state or territory, and
- depository funds operated by religious institutions.

Financial auxiliaries are units that engage primarily in activities closely related to financial intermediation, but they themselves do not perform an intermediation role. Auxiliaries primarily act as agents for their clients (often other financial entities) on a fee-for-service basis, and therefore the financial asset remains on the balance sheet of the client, not the auxiliary. However, a small portion of the activities of auxiliaries is brought to account on their own balance sheet, and these amounts are included in table 27.14. Financial auxiliaries include insurance brokers or consultants, derivative dealers, fund managers, stock brokers or traders and investment advisors.

Money lenders are units providing financial services where most of either their assets or liabilities are not transacted on open financial markets. Also included are units that provide financial services exclusively from their own funds, or funds provided by a sponsor, to a range of clients and incur the financial risk of the debtor defaulting.

Other captive financial institutions are units characterised by having a balance sheet holding financial assets, usually on behalf of other companies. These institutions are usually legal entities such as corporations, trusts, or partnerships established by their parent unit for a specific and limited purpose. Captives typically have little or no employment or operations and usually do not undertake significant production. This category excludes the captive financial institution central borrowing authorities, which are included in a category of their own. Included are financial investment syndicates, which are not open to public subscription (e.g. mortgage syndicates) and holding companies with predominantly international assets and liabilities.

Table 27.14 shows the financial assets and liabilities held by other financial corporations.

27.14 OTHER FINANCIAL CORPORATIONS, Financial assets and liabilities

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
FINANCIAL ASSETS			
Currency	10	14	11
Deposits	3 703	2 892	2 102
Bills of exchange	—	—	—
One name paper	7 980	3 541	2 329
Bonds	612	652	667
Derivatives	—	—	—
Loans and placements	20 647	18 563	14 899
Equity	65 246	72 115	76 437
Other accounts receivable	6 114	4 667	4 820
Total	104 312	102 444	101 265
LIABILITIES			
Drawings of bills of exchange	2 371	2 049	1 916
One name paper	121	106	80
Bonds	—	—	—
Derivatives	—	—	—
Loans and placements	26 364	16 126	15 233
Equity	18 631	19 076	30 053
Other accounts payable	25 457	28 501	30 537
Total	72 944	65 858	77 819

— nil or rounded to zero (including null cells)

Source: Australian National Accounts: Financial Accounts (5232.0).

Financial markets

Financial markets are used by participants to either raise funds (e.g. by issuing securities) or invest savings (by buying securities and other financial assets). The major markets in the Australian financial system are the credit market, stock market, money market, bond market and the foreign exchange market. Descriptions and tables indicating prices and activity in various financial markets are provided in this section.

A significant influence in financial markets is the participation of institutional investors controlling large pools of investment funds. These pools are accumulated by collective investment institutions and are often managed on a fee-for-service basis by investment managers. A summary of the activities of these institutions is also provided.

Credit market

Credit may be defined broadly as funds provided to those seeking to borrow. However, analytically useful measures of credit usually exclude borrowings by financial enterprises because their main role is as an intermediary, that is, they borrow in order to lend. Also, lending and borrowing between enterprises that have a special relationship, such as between companies in the same group or between government agencies, are often excluded from credit measures because transactions between these bodies are frequently of a non-market nature. Similarly, some types of financial instrument, such as trade debts, are not considered to be part of an organised market. All of these types of transactions are omitted from table 27.15, which presents a summary of the demand for credit in Australia by the non-financial sector. It

27.15 DEMAND FOR CREDIT(a)

	NET TRANSACTIONS DURING YEAR		
	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Funds (including equity) raised on conventional credit markets by:			
Private non-financial investment funds	1 793	-278	9 645
Other private non-financial corporations(b)	127 883	35 785	79 830
National public non-financial corporations	-19	-328	-41
State and local public non-financial corporations	21 646	13 891	730
National general government	44 293	51 622	45 151
State and local general government	5 934	21 734	20 709
Households	66 705	105 440	83 555
Total	268 235	227 866	239 579

(a) Data refer to net transactions. Positive numbers indicate an increase in debt. Negative numbers indicate repayment or redemption.

(b) Data are affected by large corporate restructuring transactions.

Source: Australian National Accounts: Financial Accounts (5232.0).

27.16 HOUSEHOLD DEMAND FOR CREDIT(a)

	NET TRANSACTIONS DURING YEAR		
	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Household demand for credit	66 705	105 440	83 555
Housing	84 607	95 818	88 943
Total Authorised Deposit-taking Institutions (ADIs)	123 295	117 617	91 503
Owner occupied housing	97 214	83 410	67 055
Investment housing	26 081	34 207	24 448
Other lenders	-38 688	-21 799	-2 560
Non-housing borrowing(b)	-17 902	9 622	-5 388

(a) Data refer to net transactions. Positive numbers indicate an increase in debt. Negative numbers indicate repayment or redemption.

(b) Includes credit card and personal loans.

Source: Australian National Accounts: Financial Accounts (5232.0); Housing Finance, Australia (5609.0).

includes raisings by the issue of both debt and equity securities. Table 27.16 shows details of household demand for credit. For both tables, positive numbers indicate an increase in debt and negative numbers indicate repayment or redemption.

Stock market

The stock market is a mechanism for trading equities (shares), units in trusts, options and some fixed interest securities.

Operated nationally by the Australian Stock Exchange (ASX), which is responsible for the day-to-day running and surveillance of trading, the Australian system is electronic and conducted using the Stock Exchange Automated Trading System (SEATS), allowing buyers and sellers to be located anywhere in the country.

The ASX classifies listed companies according to their major activity and produces indexes based on these classifications. Table 27.17 summarises the performance of the major indexes.

Table 27.18 shows details of the equity market for listed and unlisted entities.

Money market

Liquidity management by Australian corporations, financial institutions and governments is conducted through an informally arranged market for deposits, loans and placements, and

by issuance, purchase and sale of short-term debt securities. Selected rates in the market at 30 June are shown in table 27.19.

Money market securities are short-term, that is, they have an original term to maturity of less than one year, often 30, 90 or 180 days. They are issued by borrowers at a discount to face value and carry no income payment other than the repayment of face value at maturity. To enhance liquidity, money market securities conform to standardised attributes concerning risk and discount rates. Because of the standardisation, the securities of different issuers are often combined in the one parcel of securities for trading purposes. There are two types of securities: bills of exchange and one name paper, both of which are covered by the *Bills of Exchange Act 1909* (Cwlth). The risk of default of a bill of exchange is reduced by an acceptor or endorser adding their name to the security for a fee. Most bills of exchange traded in the market are bank-accepted bills. Promissory notes are issued by institutions whose credit worthiness is equal to or better than banks; they are not accepted by a bank and unlike bills of exchange they are not endorsed by the parties that sell them in the market. The Australian Government issues treasury notes. State and territory governments and large corporations issue commercial paper, while banks issue negotiable certificates of deposit. Table 27.20 shows the value of short-term debt securities on issue by sector of issuer and sector of holder.

27.17 AUSTRALIAN STOCK MARKET INDEXES(a)

	2007–08	2008–09	2009–10	2010–11
All ordinaries				
Index(b)	5 332.9	3 947.8	4 674.8	4 375.8
High(c)	6 873.2	5 351.4	4 888.2	5 064.9
Low(c)	5 130.1	3 090.8	4 324.1	4 250.6
S&P/ASX 200(b)	5 215.3	3 954.9	4 302.0	4 025.0
Banks(b)	10 378.0	9 629.0	11 110.0	11 915.0
Industrials(b)	6 618.0	5 331.0	5 825.0	6 148.3
Resources(b)	6 630.0	4 492.0	4 837.0	5 596.8

(a) Base 31 December 1979 = 500.

(b) Share prices on joint trading floors; June closing value (at last trading day in June).

(c) Over a 12-month period ending 30 June.

Source: Australian Stock Exchange; Reserve Bank of Australia; Standard & Poor's.

27.18 EQUITY MARKET(a)—30 June

	2009		2010		2011	
	Listed \$m	Unlisted \$m(b)	Listed \$m	Unlisted \$m(b)	Listed \$m	Unlisted \$m(b)
AMOUNTS ON ISSUE						
Total equities and units in trusts	1 079 726	1 275 746	1 228 092	1 398 056	1 331 599	1 472 256
ISSUED BY						
Private non-financial investment funds	50 632	29 068	63 429	32 994	69 290	41 895
Other private non-financial corporations	697 192	247 249	774 907	245 885	863 871	263 057
National public non-financial corporations(c)	—	6 681	—	7 897	—	9 588
State and local non-financial corporations(c)	—	82 583	—	88 910	—	84 196
Central bank(c)	—	11 964	—	9 685	—	5 336
Banks	230 369	10 848	281 056	12 091	286 449	16 762
Other depository corporations	283	33 592	405	37 841	374	39 502
Life insurance corporations	10 833	7 357	11 534	6 626	13 749	10 392
Pension funds	10	—	—	—	—	—
Other insurance corporations	28 106	36 608	26 944	36 565	26 993	35 596
Central borrowing authorities	—	-3 655	—	-2 805	—	-1 702
Money market financial investment funds	—	48 024	—	39 338	—	25 944
Non-money market financial investment funds	43 789	252 209	51 096	303 851	39 468	310 729
Securitisers	—	1 412	—	588	—	1 092
Other financial corporations	18 512	1 211	18 721	1 261	31 405	1 348
Rest of world	—	510 595	—	577 329	—	628 521
HELD BY						
Private non-financial investment funds	1 584	13 184	1 455	11 997	1 321	13 202
Other private non-financial corporations	16 574	281 785	15 166	289 554	14 410	297 558
National public non-financial corporations	—	322	—	360	—	352
State and local public non-financial corporations	6	447	—	498	—	568
Banks	1 500	101 556	2 058	104 701	1 955	109 322
Other depository corporations	373	2 908	517	1 309	1 009	1 148
Life insurance corporations	17 262	146 005	16 880	176 323	15 725	176 581
Pension funds	236 971	220 898	276 301	260 217	332 085	287 253
Other insurance corporations	15 146	33 158	15 504	34 155	15 617	34 196
Money market financial investment funds	—	2 205	—	2 035	—	2 098
Non-money market financial investment funds	107 639	113 381	121 088	122 970	131 474	126 742
Other financial corporations	48 278	18 902	55 878	29 458	49 338	29 799
National general government	12 020	42 692	11 347	51 566	9 428	56 005
State and local general government	376	79 762	284	84 364	3 111	97 021
Households	168 409	78 498	182 953	82 784	179 311	82 577
Rest of world	453 588	140 043	528 661	145 765	576 815	157 834

— nil or rounded to zero (including null cells)

(a) Includes units in trusts.

(b) The unlisted estimated market values are considered to be of poor quality. They should be used with caution.

(c) Net asset values.

Source: Australian National Accounts: Financial Accounts (5232.0).

27.19 SHORT-TERM MONEY MARKET RATES(a)—30 June

	2009	2010	2011
	% p.a.	% p.a.	% p.a.
11 am call	4.73	3.69	4.67
Bank-accepted bills – 90 days	4.79	4.04	4.91

(a) per annum.

Source: Reserve Bank of Australia.

27.20 SHORT-TERM DEBT SECURITIES

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
ISSUED BY			
Private non-financial investment funds	935	622	1 064
Other private non-financial corporations	123 122	114 519	102 472
National public non-financial corporations	87	81	105
State and local public non-financial corporations	64	134	158
Banks	300 044	274 608	266 769
Other depository corporations	8 747	8 241	9 580
Life insurance corporations	5	3	4
Non-life insurance corporations	719	363	319
Non-money market investment funds	—	—	—
Central borrowing authorities	14 824	16 467	20 981
Securitisers	29 000	19 411	15 126
Other financial corporations	2 492	2 155	1 996
National general government	17 347	11 657	16 794
State and local general government	938	933	885
Households	27 216	26 706	24 769
Rest of world	2 216	6 200	8 096
Total	527 756	482 100	469 118
HELD BY			
Private non-financial investment funds	102	110	60
Other private non-financial corporations	16 819	6 108	11 133
National public non-financial corporations	295	442	349
State and local public non-financial corporations	132	—	—
Central bank	10 904	10 890	6 494
Banks	208 741	182 744	185 608
Other depository corporations	12 618	11 809	18 806
Life insurance corporations	11 495	11 003	7 749
Pension funds	29 701	48 637	38 966
Non-life insurance corporations	15 259	13 368	12 505
Money market investment funds	36 592	25 256	15 095
Non-money market investment funds	15 852	15 293	18 765
Central borrowing authorities	25 808	21 483	18 068
Securitisers	1 176	459	605
Other financial corporations	7 987	3 549	2 329
National general government	35 146	16 229	10 326
State and local general government	645	37	73
Households	3 461	1 500	1 520
Rest of world	95 023	113 183	120 667
Total	527 756	482 100	469 118

— nil or rounded to zero (including null cells)

Source: Australian National Accounts: Financial Accounts (5232.0).

27.21 BOND MARKET, Market yields(a)—30 June

	2009	2010	2011
	% p.a.	% p.a.	% p.a.
Treasury bonds			
3 years	4.25	4.92	4.93
5 years	4.58	5.24	5.08
10 years	5.00	5.50	5.31
New South Wales T-corp bonds			
3 years	5.05	5.23	5.15
5 years	5.41	5.59	5.44
10 years	5.84	5.98	5.72

(a) Per annum.

Source: Reserve Bank of Australia.

Bond market

Bonds are issued with original terms to maturity of one or more years. Usually the investors are paid a set periodic interest, called a coupon, for the life of the bond and receive their initial investment back at maturity. Some bonds have variable interest rates, some have principal repayments indexed, and there are a small number of zero-coupon or deep discount

securities that are issued at a discount to face value. Governments, trading enterprises and financial institutions issue bonds to finance long-term requirements. For these entities, the bond market generally provides a cheaper source of funds than borrowing from banks and other financial institutions. Table 27.21 shows selected market yields at the end of June for a range of bonds.

27.22 BONDS

AMOUNTS OUTSTANDING AT 30 JUNE			
	2009	2010	2011
	\$m	\$m	\$m
ISSUED BY			
Private non-financial investment funds			
Issued in Australia	7 132	6 919	6 716
Issued offshore	2 610	2 349	2 540
Other private non-financial corporations			
Issued in Australia	33 281	33 007	33 960
Issued offshore	101 351	109 015	109 145
National public non-financial corporations			
Issued in Australia	1 299	1 022	1 025
Issued offshore	—	—	—
State and local public non-financial corporations			
Issued in Australia	—	—	—
Issued offshore	—	—	—
Banks			
Issued in Australia	145 461	174 413	192 984
Issued offshore	282 408	322 377	273 738
Other depository corporations			
Issued in Australia	10 942	8 877	14 458
Issued offshore	7 979	9 667	9 566
Life insurance corporations			
Issued in Australia	—	—	—
Issued offshore	2 324	2 240	1 675
Non-life Insurance corporations			
Issued in Australia	282	500	1 281
Issued offshore	3 540	3 781	2 962
Central borrowing authorities			
Issued in Australia	116 710	148 824	164 950
Issued offshore	21 837	16 821	10 151
Non-money market investment funds			
Issued in Australia	660	420	188
Issued offshore	1 060	328	115
Securitisers			
Issued in Australia	241 350	222 622	229 849
Issued offshore	50 699	31 821	19 963
National general government			
Issued in Australia	85 407	145 245	185 660
Issued offshore	817	689	735
State and local general government			
Issued in Australia	614	849	851
Issued offshore	—	—	—
Rest of the world			
Issued in Australia	79 851	97 997	107 476
Issued offshore	103 449	109 273	101 049
Total	1 301 063	1 449 056	1 471 037

For footnotes see end of table.

...continued

27.22 BONDS — continued

	AMOUNTS OUTSTANDING AT 30 JUNE		
	2009	2010	2011
	\$m	\$m	\$m
HELD BY			
Private non-financial investment funds	1 282	779	544
Other private non-financial corporations	29 770	21 838	19 728
National public non-financial corporations	14	14	14
State and local public non-financial corporations	123	85	69
Central bank	71 061	53 731	45 480
Banks	239 835	292 212	332 556
Other depository corporations	25 487	19 120	22 664
Life insurance corporations	23 794	25 912	24 720
Non-life insurance corporations	42 727	39 237	41 644
Pension funds	101 816	109 827	113 496
Central borrowing authorities	18 119	16 991	17 707
Money market Investment funds	2 750	1 733	1 142
Non-money market investment funds	42 983	47 253	49 425
Securitisers	16 383	9 664	7 258
Other financial corporations	612	652	667
National general government	23 072	39 292	34 928
Households	5 218	4 930	3 481
Rest of world	656 017	765 786	755 514
Total	1 301 063	1 449 056	1 471 037

— nil or rounded to zero (including null cells)

Source: Australian National Accounts: Financial Accounts (5232.0).

Historically, the main issuers of bonds have been the Australian Government, and state and territory governments, the latter through their central borrowing authorities. Corporate bonds are issued only by very large private trading and financial enterprises. Following the onset of the global financial crisis in late 2007, government and bank issuances have increased. Details of the amounts outstanding on bonds issued and held are shown in table 27.22.

Foreign exchange market

The foreign exchange market is the means whereby currencies of different countries can be bought and sold. In October 1983, the Australian Government floated the Australian dollar, allowing its value to be determined by market forces with few exchange controls and little

Reserve Bank intervention. Immediately prior to 1983, the Australian dollar was pegged to a basket of currencies. The currencies in the basket were weighted according to their trading significance to Australia. Table 27.23 shows the value of the Australian dollar against major currencies.

Over the last few years, there have been significant movements in the Australian dollar against major currencies, including the US dollar, UK pound and the Euro. In fact, for these currencies, the Australian dollar has climbed to record levels of appreciation.

Currencies are traded for many reasons: because of exporting or importing requirements, investing or borrowing overseas, arbitraging (i.e. taking advantage of short-term discrepancies in rates) or speculating on possible exchange rate

27.23 VALUE OF AUSTRALIAN DOLLAR, Against major currencies(a)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
United States of America dollar	0.7521	0.7835	0.7363	0.7938	0.8875	0.7017	0.9189	1.0437	1.0451
United Kingdom pound	0.4243	0.4092	0.4284	0.4067	0.4451	0.4867	0.5733	0.6770	0.6800
Japanese yen	80.9500	81.2200	87.2500	94.7400	100.9900	64.1400	85.6200	85.9800	82.1900
Euro	0.6042	0.5792	0.6254	0.6081	0.6040	0.5006	0.6417	0.7910	0.8116

(a) At last trading day in December.

Source: Australian Tax Office.

27.24 FOREIGN EXCHANGE TURNOVER, Against all currencies

	DAILY AVERAGE(a)		
	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Transactions by foreign exchange dealers(b)			
Outright spot(c)	61 499	58 697	47 218
Outright forward(d)	9 954	7 474	9 114
Swaps	104 256	99 354	121 316
Options	2 752	2 429	2 595
Total	178 461	167 953	180 243

(a) Figures given are the average daily turnover for the financial year.

(b) Australian banks and non-bank financial intermediaries authorised to deal in foreign exchange.

(c) An outright spot transaction is one for receipt or delivery within two business days.

(d) An outright forward transaction is one for receipt or delivery in more than two business days.

Source: Reserve Bank of Australia.

movements with a view to making a profit. Table 27.24 shows the daily average of foreign exchange turnover against all currencies. More recent information may be found in the Reserve Bank of Australia Bulletin Table F.10.

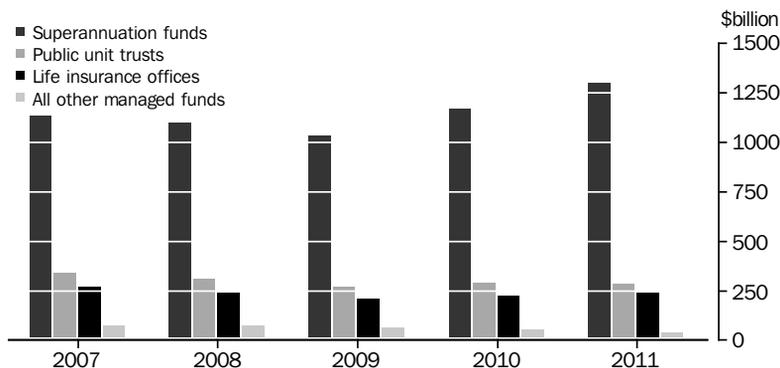
Managed funds

The term ‘managed funds’ is used loosely in the financial community to embrace two broad types of institutions. The first are managed funds institutions (such as life insurance companies, superannuation funds and unit trusts), which buy assets on their own account. The second are investment or fund managers, which act as investment agents for the managed funds institutions, as well as others with substantial funds to invest. Investment managers have relatively small balance sheets because most of the assets they manage are purchased on behalf

of clients. The ‘managed funds total assets’ (graph 27.25) represents assets of managed funds institutions only. The growth in the assets of superannuation funds between 2006 and 2007 coincides with changes to superannuation legislation in June 2007 designed to attract investor funds. The decrease in the assets of managed funds from 2007 to 2009 largely reflects fluctuations in stock market valuations, particularly as a result of the global financial crisis, which began in late 2007.

The managed funds industry is difficult to measure because of the large value of financial interaction between managed funds institutions and fund managers, and between fund managers. Consequently, double counting of funds, which are ‘churning’ through the system is a problem to be addressed in order to derive a true measure of the funds management industry. One approach

27.25 MANAGED FUNDS TOTAL ASSETS, By type of institution—30 June



Source: *Managed Funds, Australia* (5655.0).

27.26 MANAGED FUNDS INDUSTRY, Total funds under management—30 June

	2009	2010	2011
	\$m	\$m	\$m
Total consolidated assets of managed funds institutions	1 237 979	1 360 072	1 449 095
plus			
Total funds under management of investment managers sourced from Australian entities other than managed funds institutions	289 715	313 332	325 372
plus			
Total funds under management of investment managers sourced from overseas	39 756	50 592	61 465
less			
Total funds under management of investment managers sourced from other investment managers	13 000	14 760	11 602
Total	1 554 450	1 709 236	1 824 330

Source: *Managed Funds, Australia (5655.0)*.

is to take the consolidated assets of collective investment institutions, add to them those funds managed on behalf of other clients such as governments, corporations, charities, overseas clients then, 'net-off' funds sourced from other domestic fund managers. Table 27.26 provides this measure of the total funds management industry.

Managed funds institutions

Managed funds institutions pool the funds of many small to medium investors and use them to buy a particular type, or mix, of assets. The asset profile can be structured to satisfy individual investor requirements regarding the degree of risk, the mix of capital growth and income, and the degree of asset diversification. Managed funds institutions in ABS statistics comprise the following:

- life insurance corporations
- superannuation (pension) funds
- public offer (retail) unit trusts
- friendly societies
- common funds (managed by trustee companies) and
- cash management trusts.

Funds of a speculative nature that do not offer sufficiently liquid redemption facilities (e.g. agricultural and film trusts) are excluded.

To derive the total assets of each type of managed funds institution in Australia on a consolidated basis, it is necessary to eliminate the cross investment between the various types of institution. For example, investments by superannuation funds in public unit trusts are excluded from the assets of superannuation funds in a consolidated presentation. Table 27.27 shows consolidated assets by type of asset.

27.27 CONSOLIDATED ASSETS OF MANAGED FUNDS—30 June

Type of asset	2009	2010	2011
	\$m	\$m	\$m
Deposits	161 928	170 080	189 194
Short-term securities	97 432	99 955	78 564
Bonds, etc(a)	74 641	82 798	78 188
Derivatives	3 885	4 055	2 692
Loans and placements	39 733	38 449	34 314
Shares	306 866	374 653	430 367
Units in trusts (wholesale and retail)	144 625	162 108	178 467
Other financial assets	30 912	31 376	41 753
Land, buildings and equipment	150 511	154 138	161 853
Other non-financial assets	18 775	17 430	16 603
Overseas assets	208 671	225 030	237 100
Total	1 237 979	1 360 072	1 449 095

— nil or rounded to zero (including null cells)

(a) A full list can be found in the glossary of Managed Funds, Australia (5655.0).

Source: *Managed Funds, Australia (5655.0)*.

Investment managers

Investment managers are employed on a 'fee-for-service' basis to manage and invest in approved assets, on their clients' behalf. They mainly act as the managers of pooled funds, but also manage clients' investments on an individual portfolio basis. Investment managers offer their services to a range of clients, including superannuation funds, life insurance corporations, publically listed corporations, government entities and high net worth individuals.

A considerable proportion of the assets of managed funds institutions are managed via investment managers. At 30 June 2011, \$799.8 billion (43% of the unconsolidated assets of managed funds institutions) were channelled through investment managers. Investment managers also accept funds from investors other than managed funds institutions. At 30 June 2011, investment managers invested \$386.8 billion on behalf of government bodies, general insurers and other clients, including overseas clients.

Table 27.28 shows the total unconsolidated assets of each type of managed fund institution, and the value of these assets invested through investment managers.

Lending by financial institutions

The lending activities of financial institutions are grouped for statistical purposes into four major types of lending: housing, personal, commercial and leasing. Information regarding housing finance is presented in chapter 10 *Housing*. Table 27.29 shows the size of commitments by financial institutions for the four types of lending activity. It should be noted that, although commitments are firm offers of finance made by institutions that have been accepted by borrowers, not all commitments are taken up by borrowers.

Lease finance

Table 27.30 shows the value of lease finance commitments made by significant lenders (banks, money market corporations, finance companies, general financiers, etc.) to trading and financial enterprises, non-profit organisations, governments, public authorities and individuals.

Personal finance

Table 27.31 shows the value of commitments made by significant lenders (banks, credit co-operatives, finance companies, etc.) to individuals

27.28 ASSETS OF MANAGED FUNDS, Invested through investment managers—30 June 2011

Type of fund	Total unconsolidated assets of managed funds	Assets invested with investment managers	Assets invested with investment managers
	\$m	\$m	% of total assets
Life insurance offices(a)	234 559	128 900	55
Superannuation funds	1 299 444	532 521	41
Public unit trusts	282 833	117 084	41
Friendly societies	6 253	1 107	18
Common funds	8 184	4 270	52
Cash management trusts	24 236	15 880	66
Total	1 855 510	799 762	43

(a) Includes both superannuation and ordinary business.

Source: *Managed Funds, Australia* (5655.0).

27.29 LENDING COMMITMENTS OF FINANCIAL INSTITUTIONS

Type of lending activity	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Housing finance(a)	175 022	180 003	166 427
Personal finance	81 589	88 326	86 536
Commercial finance	367 419	345 504	365 130
Lease finance	5 687	4 642	4 916
Total	629 717	618 475	623 009

(a) Secured finance for owner occupation. Excludes alterations and additions.

Source: *Lending Finance, Australia* (5671.0).

27.30 LEASE FINANCE COMMITMENTS, By type of lessor

	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Banks	2 144	1 417	1 242
Finance companies	np	np	np
General financiers	1 658	1 614	1 764
Other(a)	np	np	np
Total	5 687	4 642	4 916

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes money market corporations.

Source: *Lending Finance, Australia (5671.0)*.

27.31 PERSONAL FINANCE COMMITMENTS(a), By type of lender

	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Banks	67 318	76 298	73 906
Finance companies	np	np	np
Credit co-operatives	np	np	np
Other lenders(b)	8 053	7 656	8 430
Total	81 589	88 326	86 536

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes both fixed loan facilities and new and increased lending commitments under revolving credit facilities.

(b) Includes permanent building societies, general financiers and retailers.

Source: *Lending Finance, Australia (5671.0)*.

27.32 COMMERCIAL FINANCE COMMITMENTS(a), By type of lender

	2008–09	2009–10	2010–11
	\$m	\$m	\$m
Banks	316 561	310 716	279 439
Finance companies	np	np	np
Money market corporations	np	np	np
Other lenders(b)	np	np	np
Total	367 419	345 504	365 131

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) Includes both fixed loan facilities and new and increased lending commitments under revolving credit facilities.

(b) Includes permanent building societies and pastoral finance companies.

Source: *Lending Finance, Australia (5671.0)*.

for their own personal (non-business) use. This includes credit card facilities and personal loans, but excludes secured housing finance.

Commercial finance

Table 27.32 shows the value of commitments, made by significant lenders (banks, finance companies, money market corporations, etc.) to lend to government, private and public enterprises, non-profit organisations and individuals for investment and business purposes.

Money and the payments system

The payments system supports trade and commerce in a market economy. Notes and coin are one means of payment. Liquid balances held at financial institutions are also available potentially for transactions needs, under cheque and other forms of transfer facilities, and thus add to the money supply.

From 1 July 1998, a new financial regulatory framework came into effect in response to the recommendations of the Financial System Inquiry

(Wallis Committee). Under these arrangements, the Reserve Bank has stronger regulatory powers in the payments system in accordance with the *Payments Systems (Regulations) Act 1998* (Cwlth), exercised by a Payments System Board within the Bank.

Money

Australia has a decimal system of currency, the unit being the dollar, which is divided into 100 cents. Australian notes are issued in the denominations of \$5, \$10, \$20, \$50 and \$100 and coins in the denominations of 5c, 10c, 20c, 50c, \$1 and \$2. Notes for \$1 and \$2 denominations were replaced by coins in 1984 and 1988 respectively, and 1c and 2c coins ceased to be issued from 1 February 1992. Table 27.33 shows the value of notes on issue on the last Wednesday of June. Table 27.34 shows the value of coin on issue at 30 June.

Money supply measures

The money supply is the value of financial instruments within a specific economy that are available for purchasing goods or services. The Reserve Bank of Australia (RBA) defines the money supply as the amount of cash held by

the public plus deposits with specified financial institutions. The total money supply within an economy can consist of various financial instruments (including currency, demand deposits and various other types of deposits). Monetary aggregates can be created by adding or grouping these various financial instruments. Monetary aggregates range from the narrowest category, money base, through to the widest category, broad money, with other measures in between. The money supply is important to economists trying to understand how policies will affect interest rates and growth. Monetary policy is the process by which the Reserve Bank of Australia (RBA) manages the money supply to achieve specific goals.

The monetary aggregates common to the Australian economy are as follows:

- Money base – comprises holdings of notes and coin by the private sector, deposits of banks with the Reserve Bank, and other Reserve Bank liabilities to the private sector. It is also often referred to as ‘narrow money’ or ‘M0’. It is the most liquid measure of the money supply.
- M1 – is defined as currency plus bank current deposits from the private non-bank sector. This measure is used by economists trying to

27.33 VALUE OF AUSTRALIAN NOTES ON ISSUE—Last Wednesday in June

	2007	2008	2009	2010	2011
	\$m	\$m	\$m	\$m	\$m
\$5	591	615	646	673	731
\$10	896	919	956	983	1 010
\$20	2 834	2 740	2 659	2 653	2 796
\$50	19 228	20 141	23 731	23 711	24 287
\$100	16 720	17 700	20 067	20 740	21 234
Total	40 269	42 115	48 059	48 759	50 059

Source: Reserve Bank of Australia, <<http://www.rba.gov.au/banknotes/resources/statistics.html>>.

27.34 VALUE OF AUSTRALIAN DECIMAL COIN ON ISSUE—30 June

	2006	2007	2008	2009	2010
	\$m	\$m	\$m	\$m	\$m
1c	31	31	31	31	31
2c	49	49	49	49	49
5c	174	181	186	192	198
10c	170	180	188	195	203
20c	265	278	292	308	323
50c	368	384	399	414	429
\$1	653	682	723	754	781
\$2	962	1 028	1 113	1 204	1 277
Total	2 671	2 812	2 980	3 149	3 291

Source: Royal Australian Mint <http://www.ramint.gov.au/about/compliance/annualreports/2008-09/06_appendices.cfm#a>.

27.35 MONEY SUPPLY MEASURES—30 June

	2007	2008	2009	2010	2011
	\$m	\$m	\$m	\$m	\$m
Money base	43 735	46 466	53 388	53 623	54 596
M1	225 976	234 194	244 139	242 019	267 218
M3	869 457	1 035 301	1 177 277	1 227 921	1 339 922
Broad money	960 765	1 120 428	1 245 140	1 269 469	1 364 221

Source: Reserve Bank of Australia.

quantify the amount of money in circulation. The M1 is a very liquid measure of the money supply, as it contains cash and assets that can quickly be converted to currency.

- M3 – is defined as M1 plus all other Authorised Deposit-taking Institution (ADI) deposits from the private non-bank sector plus certificates of deposit issued by banks less ADI deposits held with each other.
- Broad money – is the widest definition of money published by the Reserve Bank of Australia (RBA). Broad money is defined as M3 plus borrowings from the private sector by non-bank financial intermediaries (including cash management trusts) less their holdings of currency and bank deposits. This measure is generally used to estimate the entire supply of money within an economy.

The money supply under each of these measures at 30 June is shown in table 27.35.

Payments system

Following recommendations by the Financial System Inquiry, the Payments System Board was established within the Reserve Bank in July 1998. The Payments System Board has responsibility for

determining the Reserve Bank's payments system policy, under the powers set out under the *Payment Systems (Regulation) Act 1998* (Cwlth) and the *Payment Systems and Netting Act 1998* (Cwlth). The Reserve Bank also has responsibility for oversight of the stability of clearing and settlement facilities under the *Corporations Act 2001* (Cwlth).

The payments system in Australia has changed significantly in recent years. In part, this has been a response to technological change and consumer behaviour. On average, there are at least 15 million non-cash payments made in Australia each day, the overwhelming majority of which are electronic payments.

Table 27.36 shows the number of points of access to the payments system. Branches are access points staffed by employees of financial institutions. Agencies are staffed by other than employees of financial institutions such as storekeepers, and exclude school agencies and Bank@Post agencies. Bank@Post (previously called giroPost) provides a limited range of services at Australia Post offices on behalf of participating financial institutions. Electronic points of access include ATM and electronic funds transfer at point of sale (EFTPOS) terminals.

27.36 POINTS OF ACCESS TO THE AUSTRALIAN PAYMENTS SYSTEM—30 June

	2007	2008	2009	2010	2011
Branches					
Banks	5 264	5 398	5 504	5 544	5 588
Building societies and credit unions	1 263	1 240	1 172	1 167	1 173
Bank@Post (giroPost)	3 301	3 305	3 302	3 291	3 261
ATMs	25 681	25 658	27 108	28 764	30 154
EFTPOS terminals	597 063	658 033	669 165	712 434	734 380

Source: Australian Prudential Regulation Authority <<http://www.apra.gov.au/Statistics/Points-of-Presence.cfm>>; Australian Payments Clearing Association Limited.

Recent developments in financial markets

This article was contributed by the Reserve Bank of Australia (February 2012).

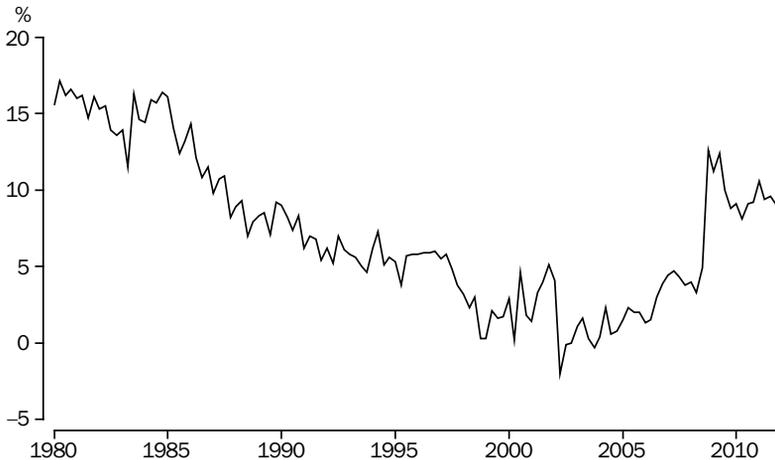
Conditions in financial markets have improved since the acute distress in 2008, though financial markets have continued to experience bouts of increased volatility. Global growth since the financial crisis has been largely driven by emerging economies such as China and India, with the recovery of economic activity in advanced economies dependent on accommodative fiscal and monetary policies (RBA, 2010). As a result, public finances have deteriorated substantially in a number of advanced economies, particularly in Europe and the United States of America. With private sector demand slow to recover in most advanced economies, this has contributed to growing market concerns about the sustainability of sovereign finances in a number of these economies, a few of which had started from constrained positions. Sovereign finance concerns initially centred on Greece, Ireland and Portugal, but eventually spread to a wider range of countries in Europe, including the much larger economies of Italy and Spain, and a number of north Atlantic economies have had their credit rating downgraded. Growing concern over whether fiscal policy could

address the large and growing level of debt in a number of European economies has resulted in increased risk aversion and volatility in global financial markets, particularly in the second half of 2011.

The effects of financial turbulence since 2008 have been less severe in Australia than in most other advanced economies. The healthy state of the Australian financial system, together with the relatively high share of variable-rate borrowing in Australia, allowed the significant easing of both monetary and fiscal policy in 2008 and 2009 to flow directly through to households, while the rapid depreciation of the exchange rate at the end of 2008 helped to offset falls in external demand. Furthermore, the resilience of Chinese economic activity, and the associated boost in Australian export income, has continued to offset the impact of softer growth in north Atlantic economies.

Nevertheless, the Australian economy has not been immune from overseas economic or financial market developments. The most obvious effect of the financial crisis on

**S27.1 HOUSEHOLD NET SAVINGS RATIO(a),
Percentage of household disposable income**



(a) Net of depreciation.

Source: ABS.

Australian households saw the fall in net worth throughout the second half of 2008 and early in 2009, which was in large part driven by declines in superannuation and managed funds balances associated with the fall in equity prices over this period. The reduction in wealth is likely to have contributed to a substantial rise in the household savings rate from its pre-crisis level, with solid growth and labour market outcomes allowing this process to occur quite rapidly (graph S27.1). This sharp increase in household savings has coincided with a significant pick-up in term deposits held at Australian deposit-taking institutions. Housing credit has also grown at a more subdued pace, reflecting increased consumer caution in their borrowing behaviour (graph S27.2).

The deterioration in the financial health of the business sector in Australia was also relatively mild, with business profits as a share of GDP remaining at historically high levels. The profits of mining companies fell in late 2008, driven by falls in commodity prices, but increased rapidly from 2010 as a result of increased resource demand from China. However, business credit growth has not returned to pre-crisis levels as businesses have reduced their leverage.

Australian financial institutions were also affected by the financial crisis, but considerably less so than their international peers (graph S27.3). Australian banks' cost of debt funding relative to the cash rate has risen since the crisis began in 2007. This reflects both an increase in the relative cost of deposits and wholesale debt, as well as a shift in the composition of bank funding to more expensive, though more stable, funding sources such as deposits and long-term debt (graph S27.4). See Deans and Stewart (2012) for more information. This is consistent with both a reassessment of funding risks by banks globally, as well as a response to regulatory and market pressures to secure more stable funding sources.

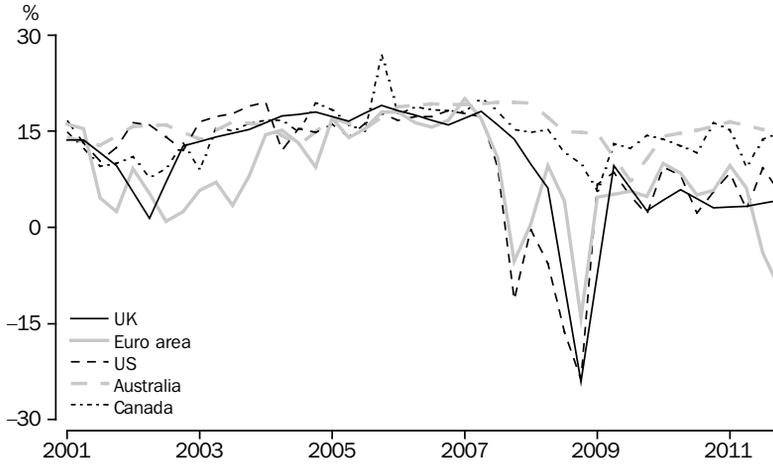
Profit growth of Australian banks was adversely affected in 2008 and 2009 by sharp increases in charges for bad and doubtful debts. However, these increases were well below those experienced in many other economies and, by 2010, charges for bad and doubtful debts had started to decline. The improvement reflects a number of factors, including tighter lending standards, a reduction in the share of low-documentation lending and more conservative debt-serviceability requirements.

**S27.2 HOUSING CREDIT GROWTH,
Year-end percentage change**



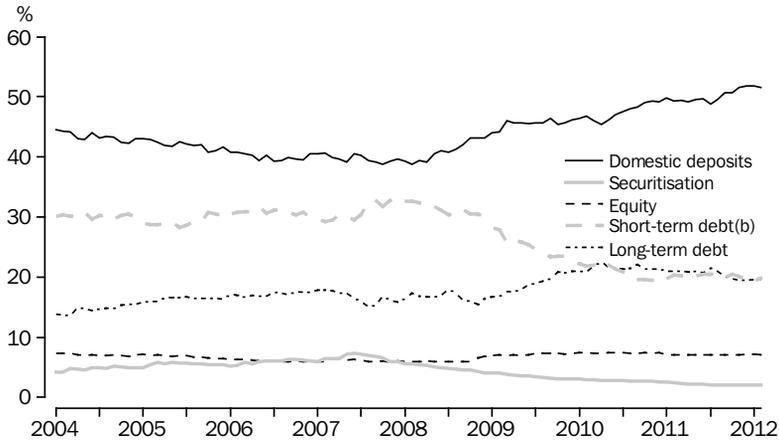
Source: APRA; ECB; BoE; RBA; Thomson Reuters.

S27.3 RETURN ON EQUITY, Largest banks(a)



(a) Return on equity of the six largest US banks, 10 largest listed European banks (including Switzerland), five largest UK banks, four largest Australian banks and four largest Canadian banks. Source: Bloomberg; Banks' financial reports; RBA.

S27.4 FUNDING COMPOSITION OF BANKS IN AUSTRALIA(a), Percentage of funding



(a) Adjusted for movements in foreign exchange rates.
(b) Includes deposits and intragroup funding from non-residents.
Source: APRA; RBA; Standard & Poor's.

More recently, Australian banks have continued to access offshore funding markets in the face of European sovereign debt concerns. This is partly because their exposures to the euro area account for only a small share of their total assets. The associated financial

market turbulence has also had fewer spill-over effects on the Australian economy than in many other economies, and thus less impact on banks' balance sheets. Increased caution by households and business has resulted in deposit growth outpacing credit growth, which

has meant that Australian banks have been able to reduce their use of wholesale funding.

As a result of these developments the Australian banking sector has remained

generally quite healthy, especially compared to many overseas banking sectors. The sector also has stronger capital and funding positions than prior to the crisis.

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Financial co-operatives in Australia

In 2012, Australia recognises the United Nations International Year of Co-operatives. This article was contributed by Abacus.¹ It recognises the year by looking at the role of co-operatives in Australia's financial system.

In Australia, financial co-operatives are better known as 'mutuals'. These are organisations that are owned by, and run for the benefit of, their current and future members (customers). They adopt a different business form to traditional corporations and differ in the way they behave and the reason they do business.

Australia's mutual financial services sector comprises credit unions, mutual banks, mutual building societies and some friendly societies. These institutions bring competition and choice to Australian consumers. Under a mutual business model, institutions are customer-owned rather than investor-owned; each customer owns an equal share in the institution and has an equal say in its governance. Financial co-operatives are not run purely for profit, but instead put profits back into the products and services they offer to customers and the support they give to local communities.

The Australian financial co-operatives sector can be split into two broad categories:

- mutual banking institutions, comprising 92 credit unions, six mutual banks and seven mutual building societies and
- friendly societies (there are 10 friendly societies that operate in financial services).

Mutual banking institutions together have more than \$85 billion dollars in assets and hold 11% of all deposits held with Authorised Deposit-

taking Institutions (ADIs) in Australia.² Around 4.5 million Australians are customers. Mutual banking institutions offer a comprehensive banking service that includes savings, investment, loan and insurance products. They service metropolitan and regional areas, including Australia's most remote communities, and some are bonded to particular industries or employers. As well as offering Internet and mobile banking services, they have one of the largest ATM networks in the country – the RediATM network.³

Friendly societies are like financial services companies. They provide consumers with 'life event' products that are typically used to save for specific purposes such as secondary or tertiary education expenses, a deposit for a home, health and life insurance products and even weddings and funerals.

Mutual banking institutions and friendly societies operate under the same rules and regulations as their larger competitors. Mutual banking institutions are Authorised Deposit-taking Institutions (ADIs), regulated under the *Banking Act 1959* (Cwlth). They meet the same stringent regulatory standards as the larger banks, as set by the Australian Prudential Regulation Authority (APRA). Friendly societies are regulated under the *Life Insurance Act 1995* (Cwlth), and meet the same regulatory standards as larger life insurance companies. Like mutual banking institutions, friendly societies are overseen by APRA.

Endnotes

1. Abacus represents Australian credit unions, mutual building societies, mutual banks and friendly societies. For more information, see <http://www.abacus.org.au/>.
2. Source: APRA, ABS, January 2012.
3. The RediATM network comprises over 90 credit unions, mutual banks and building societies, as well as several for-profit banks.

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GOVERNMENT FINANCE

The main functions of government are the provision of non-market services, the regulation of economic and social conditions, and the redistribution of income between sections of the community. These activities are primarily financed by taxation and are carried out by entities in the general government sector. In addition to this core activity, governments can also own or control enterprises that:

- sell goods or services to the public and which operate largely on a commercial, or market basis (public non-financial corporations), or
- engage in financial intermediation (public financial corporations).

This chapter presents a range of information about the financial activities of the different levels of government in Australia, together with some explanatory material to assist with the analysis of these data. The system of Government Finance Statistics (GFS), which is used to derive the statistics presented here, provides statistical information on public sector entities in Australia, classified in a uniform and systematic way.

The GFS system is based on international standards contained in the *System of National Accounts 1993* and the International Monetary Fund's *Government Finance Statistics Manual 2001* (GFSM). It enables users to analyse the financial operations and financial position of government in various ways – by a specific level of government, jurisdiction (state/territory), institutional sector, or set of transactions. Information about the GFS system can be found in *Australian System of Government Finance Statistics: Concepts, Sources and Methods, 2005* (5514.0, 5514.0.55.001).

Information about the different levels and responsibilities of government in Australia can be found in chapter 4 *Government*.

Other related information can be found in chapters 6 *Defence*, 10 *Housing*, 12 *Education and training*, 30 *National accounts* and 31 *International accounts and trade*.

The System of National Accounts has been updated and the 2008 System of National Accounts (2008 SNA) was endorsed by the United Nations Statistical Commission in February 2009. The 2008 SNA was implemented in Australia's National Accounts from September quarter 2009 and this has resulted in two changes to Australia's GFS. Defence Weapons Platforms (DWP) have been capitalised to align with the 2008 SNA from September quarter 2009 and time series have been revised. This change affected the Commonwealth General Government Operating Statement, Cash Flow Statement and Balance Sheet.

The alignment of Special Drawing Rights (SDR) to the 2008 SNA treatment was introduced in the 2009–10 year and time series have been revised. SDRs are international reserve assets created by the International Monetary Fund (IMF) and allocated to its members to supplement existing reserve assets. This change means that counterpart liabilities are now recorded to match the value of the SDRs allocated by the IMF to Australia. Previously, SDRs allocated by the IMF were recorded in the Australian GFS as financial assets with no corresponding liabilities and were initially brought onto the balance sheet with matching 'other economic flow' entries. This has affected the Commonwealth General Government Balance Sheet.

The *Australian System of Government Finance Statistics: Concepts, Sources and Methods* (5514.0, 5514.0.55.001) has been updated to reflect these changes. The GFSM 2001 will be revised to reflect the 2008 SNA and, although the IMF review of the GFSM has commenced, timing of release of the revised GFSM is unknown at this stage. The Australian Bureau of Statistics (ABS) GFS will be updated to reflect the new international standard after the revised IMF GFSM is available.

Public sector

The public sector includes all organisations owned or controlled by any of the three levels of government within the Australian political system – Australian (Commonwealth), state (and territory) and local. The responsibilities of each level of government differ and each level has specific sources of revenue with which to fund its activities.

In the Australian system of government finance statistics (GFS), a fourth level of government is also identified – multi-jurisdictional. The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or where classification of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into the multi-jurisdictional category are the public universities.

The public sector can be divided into three institutional sectors that group organisations with similar characteristics:

- General government – the main functions of general government entities are to provide non-market goods and services (e.g. public roads, public hospitals, libraries) primarily financed by taxes, to regulate and influence economic activity, to maintain law and order, and to redistribute income by means of transfer payments.
- Public non-financial corporations (PNFCs) – the main function of PNFCs is to provide goods and services that are predominantly market, non-regulatory and non-financial in nature. Market operators make decisions about what to produce and how much to produce in response to expected levels of demand and expected costs of supply and are exposed to the risks associated with this production.
- Public financial corporations (PFCs) – PFCs are enterprises that engage in financial intermediation (i.e. trade in financial assets and liabilities), such as central borrowing authorities (the Reserve Bank of Australia), government banks and insurance offices, or home-lending schemes.

Within GFS, the consolidated total of the general government, the PNFCs and the PFCs sectors is referred to as the 'total public sector'.

The GFS framework is divided into three separate financial statements, each of which is designed to draw out analytical aggregates, or balances of particular economic significance. Taken together, they provide a comprehensive description of the financial positions of levels of government and jurisdictions, both individually and collectively. These statements are the operating statement, the cash flow statement and the balance sheet.

The operating statement presents details of transactions in GFS revenues, GFS expenses and the net acquisition of non-financial assets on an accrual basis for an accounting period. Two key GFS analytical balances in the operating statement are GFS net operating balance (NOB) and GFS net lending/borrowing. GFS NOB is the difference between GFS revenues and GFS expenses and reflects the sustainability of government operations. GFS net lending/borrowing is equal to NOB minus the net acquisition of non-financial assets. A positive result reflects a net lending position while a negative result reflects a net borrowing position.

The cash flow statement identifies how cash is generated and applied in a single accounting period. It reflects a cash basis of recording, where the information has been derived indirectly from underlying accrued transactions and movements in balances. In effect, this means that transactions are captured when cash is received or when cash payments are made. Cash transactions are especially identified because they allow the compilation of the cash-based surplus/deficit

measure and because the management of cash is considered an integral function of accrual accounting. The cash-based surplus/deficit is a broad indicator of cash flow requirements. When it is positive (i.e. in surplus), it reflects the extent to which cash is available to government to either increase its financial assets or decrease its liabilities. When it is negative (i.e. in deficit), it is a measure of the extent to which government requires cash, by running down its financial assets or by drawing on the cash reserves of the domestic economy, or from overseas.

The balance sheet is the statement of financial position for a sector at a specific point in time. It shows the assets, liabilities and GFS net worth. GFS net worth is an economic measure of wealth. For the general government sector, it is calculated as assets less liabilities. For the PNFC and PFC sectors, GFS net worth is calculated as assets less liabilities less shares and other contributed capital.

Tables 28.1 and 28.2 show major aggregates for general government and the total public sector.

28.1 MAJOR AGGREGATES, General government sector, all levels of government

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
GFS Revenue	363 719	391 146	419 114	419 678	420 300
GFS Expenses	333 279	359 850	386 379	440 653	459 650
GFS Net Operating Balance	30 441	31 296	32 735	-20 976	-39 350
Net acquisition of non-financial assets	10 615	13 699	16 463	22 092	32 047
GFS Net Lending(+)/Borrowing(-)	19 825	17 597	16 272	-43 068	-71 397
Cash Surplus (+)/Deficit (-)	25 054	14 850	19 425	-32 141	-68 638
Total assets	1 047 738	1 120 466	1 277 686	1 447 941	1 546 033
Total liabilities	365 745	366 303	381 565	510 514	613 505
GFS Net worth	681 993	754 163	896 121	937 427	932 528

Source: Government Finance Statistics, Australia (5512.0).

28.2 MAJOR AGGREGATES, Total public sector, all levels of government

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
GFS Revenue	422 591	445 285	470 557	472 144	474 353
GFS Expenses	391 904	410 134	433 926	493 940	517 014
GFS Net Operating Balance	30 687	35 151	36 632	-21 795	-42 662
Net acquisition of non-financial assets	19 337	25 293	31 570	42 316	50 768
GFS Net Lending(+)/Borrowing(-)	11 350	9 858	5 062	-64 111	-93 429
Cash Surplus (+)/Deficit (-)	19 151	6 269	9 264	-51 019	-86 221
Total assets	1 243 037	1 337 894	1 520 306	1 718 921	1 837 651
Total liabilities	572 766	583 497	624 185	781 494	905 124
GFS Net worth	647 914	754 367	896 121	937 427	932 528

Source: Government Finance Statistics, Australia (5512.0).

28.3 GENERAL GOVERNMENT OPERATING STATEMENT

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
COMMONWEALTH					
GFS Revenue	260 786	277 978	303 291	298 282	292 013
GFS Expenses	241 230	257 483	278 320	322 405	337 713
GFS Net Operating Balance	19 556	20 495	24 971	-24 122	-45 699
Net acquisition of non-financial assets	2 875	2 872	3 640	4 850	7 168
GFS Net Lending(+)/Borrowing(-)	16 681	17 624	21 330	-28 972	-52 867
STATE AND TERRITORY					
GFS Revenue	142 385	153 748	161 256	173 970	194 546
GFS Expenses	134 722	146 026	157 274	173 753	191 195
GFS Net Operating Balance	7 662	7 722	3 981	216	3 351
Net acquisition of non-financial assets	4 567	6 533	8 218	10 907	17 649
GFS Net Lending(+)/Borrowing(-)	3 096	1 189	-4 237	-10 690	-14 298
LOCAL					
GFS Revenue	23 835	25 927	27 731	30 608	32 418
GFS Expenses	20 686	22 135	23 977	26 167	27 891
GFS Net Operating Balance	3 149	3 792	3 754	4 442	4 528
Net acquisition of non-financial assets	2 595	3 508	3 611	5 021	5 709
GFS Net Lending(+)/Borrowing(-)	554	284	143	-579	-1 181
MULTI-JURISDICTIONAL(a)					
GFS Revenue	14 856	15 267	17 933	18 060	20 708
GFS Expenses	13 734	14 382	15 808	18 336	18 605
GFS Net Operating Balance	1 122	884	2 125	-276	2 104
Net acquisition of non-financial assets	579	787	993	1 315	1 508
GFS Net Lending(+)/Borrowing(-)	544	98	1 132	-1 590	595
ALL LEVELS OF GOVERNMENT(b)					
GFS Revenue	363 719	391 146	419 114	419 678	420 300
GFS Expenses	333 279	359 850	386 379	440 653	459 650
GFS Net Operating Balance	30 441	31 296	32 735	-20 976	-39 350
Net acquisition of non-financial assets	10 615	13 699	16 463	22 092	32 047
GFS Net Lending(+)/Borrowing(-)	19 825	17 597	16 272	-43 068	-71 397

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classification of a unit to a jurisdiction is otherwise unclear. The main types of units falling into this category are the public universities.

(b) The sum of individual levels of government may not agree with the total All levels of government figures due to transfers between levels of government.

Source: *Government Finance Statistics, Australia (5512.0)*.

Tables 28.3 to 28.8 show operating and cash flow statements and the 30 June balance sheet results across different levels of government for the general government and the total public sectors from 2005–06 to 2009–10.

GFS net borrowing in 2009–10 was \$71.4 billion for the general government sector (tables 28.1 and 28.3) and \$93.4 billion for the total public sector (tables 28.2 and 28.4).

Table 28.4 shows GFS operating statement aggregates for the total public sector for all levels of government. For the Commonwealth Government, GFS revenue decreased by \$11.9

billion (-4%) from \$309.9 billion in 2008–09 to \$298.0 billion in 2009–10. GFS expenses increased by \$15.3b (5%) from \$333.2b to \$348.5b. As a result, GFS net operating balance decreased by \$27.2b from \$-23.3b in 2008–09 to \$-50.4b in 2009–10.

For the state and territory governments, total public sector, GFS revenue increased by \$27.7b (13%) from \$215.4b in 2008–09 to \$243.1b in 2009–10. GFS expenses increased by \$21.5b (10%) from \$217.0b to \$238.5b. As a result, GFS net operating balance increased by \$6.2b from \$-1.6b in 2008–09 to \$4.6b in 2009–10.

28.4 TOTAL PUBLIC SECTOR OPERATING STATEMENT

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
COMMONWEALTH					
GFS Revenue	285 708	293 721	314 760	309 926	298 049
GFS Expenses	267 481	273 605	288 055	333 182	348 492
GFS Net Operating Balance	18 228	20 116	26 705	-23 256	-50 442
Net acquisition of non-financial assets	3 532	3 769	4 393	5 825	8 298
GFS Net Lending(+)/Borrowing(-)	14 696	16 347	22 312	-29 081	-58 740
STATE AND TERRITORY					
GFS Revenue	176 809	192 328	201 822	215 360	243 092
GFS Expenses	167 656	180 519	195 858	216 985	238 501
GFS Net Operating Balance	9 153	11 809	5 963	-1 625	4 591
Net acquisition of non-financial assets	12 342	16 948	22 539	30 107	35 215
GFS Net Lending(+)/Borrowing(-)	-3 189	-5 138	-16 576	-31 733	-30 624
LOCAL					
GFS Revenue	23 904	26 057	27 779	30 638	32 460
GFS Expenses	20 736	22 221	24 016	26 153	27 885
GFS Net Operating Balance	3 168	3 836	3 764	4 485	4 575
Net acquisition of non-financial assets	2 679	3 779	3 639	5 063	5 719
GFS Net Lending(+)/Borrowing(-)	489	58	124	-578	-1 143
MULTI-JURISDICTIONAL(a)					
GFS Revenue	15 348	15 864	18 589	18 777	21 496
GFS Expenses	14 175	14 884	16 303	18 946	19 267
GFS Net Operating Balance	1 173	979	2 286	-169	2 229
Net acquisition of non-financial assets	784	798	998	1 320	1 522
GFS Net Lending(+)/Borrowing(-)	389	182	1 289	-1 489	706
ALL LEVELS OF GOVERNMENT(b)					
GFS Revenue	422 591	445 285	470 557	472 144	474 353
GFS Expenses	391 904	410 134	433 926	493 940	517 014
GFS Net Operating Balance	30 687	35 151	36 632	-21 795	-42 662
Net acquisition of non-financial assets	19 337	25 293	31 570	42 316	50 768
GFS Net Lending(+)/Borrowing(-)	11 350	9 858	5 062	-64 111	-93 429

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classification of a unit to a jurisdiction is otherwise unclear. The main types of units falling into this category are the public universities.

(b) The sum of individual levels of government may not agree with the total All levels of government figures due to transfers between levels of government.

Source: *Government Finance Statistics, Australia (5512.0)*.

For the total, All levels of government, total public sector, GFS revenue increased by \$2.2b from \$472.1b in 2008–09 to \$474.4b in 2009–10. GFS expenses increased by \$23.1b (5%) from \$493.9b to \$517.0b. As a result, the GFS net operating balance decreased by \$20.9b from \$-21.8b in 2008–09 to \$-42.7b in 2009–10.

Table 28.5 shows the general government cash flow statement for all levels of government. For the Commonwealth Government, the cash flow

statement deficit increased by \$29.0 billion from \$-23.5 billion in 2008–09 to \$-52.4 billion in 2009–10. For the state and territory governments, the cash flow statement deficit increased by \$4.5b from \$-6.4b in 2008–09 to \$-10.9b in 2009–10.

For the total, All levels of government, general government, the cash flow statement deficit increased by \$36.5b from \$-32.1b in 2008–09 to \$-68.6b in 2009–10.

28.5 GENERAL GOVERNMENT CASH FLOW STATEMENT

	2005-06	2006-07	2007-08	2008-09	2009-10
	\$m	\$m	\$m	\$m	\$m
COMMONWEALTH					
Cash Flow Statement					
Cash receipts from operating activities	255 552	272 254	294 494	292 008	284 134
Cash payments for operating activities	-233 456	-246 110	-264 432	-306 054	-325 617
Net cash flows from operating activities	22 096	26 144	30 062	-14 047	-41 483
Net cash flows from investments in non-financial assets	-6 388	-6 864	-6 939	-8 841	-10 910
Net cash flows from investments in financial assets for policy purposes	-1 326	7 656	5 108	-7 914	-4 279
Net cash flows from investments in financial assets for liquidity purposes	-12 678	-26 934	-29 303	-16 185	5 150
Net cash flows from financing activities	-1 274	-824	1 748	47 143	51 716
Net Increase(+)/Decrease(-) in Cash Held	430	-822	675	156	193
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	15 708	19 280	23 123	-22 888	-52 393
Acquisitions of assets under finance leases and similar arrangements	-24	-59	-148	-566	-25
Surplus(+)/Deficit(-)	15 685	19 221	22 974	-23 454	-52 418
STATE AND TERRITORY					
Cash Flow Statement					
Cash receipts from operating activities	148 838	156 284	164 960	178 697	200 193
Cash payments for operating activities	-128 104	-146 270	-152 251	-166 188	-184 518
Net cash flows from operating activities	20 734	10 014	12 710	12 509	15 675
Net cash flows from investments in non-financial assets	-10 446	-12 789	-14 891	-18 077	-26 199
Net cash flows from investments in financial assets for policy purposes	-889	-970	-503	-2 127	-1 947
Net cash flows from investments in financial assets for liquidity purposes	-5 390	2 202	2 238	-656	-2 648
Net cash flows from financing activities	-1 196	1 654	4 154	9 697	14 303
Net Increase(+)/Decrease(-) in Cash Held	2 813	111	3 708	1 347	-815
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	10 288	-2 775	-2 182	-5 568	-10 524
Acquisitions of assets under finance leases and similar arrangements	-538	-636	-1 068	-870	-377
Surplus(+)/Deficit(-)	9 750	-3 411	-3 249	-6 438	-10 901
LOCAL					
Cash Flow Statement					
Cash receipts from operating activities	22 771	24 857	26 505	29 226	30 406
Cash payments for operating activities	-17 178	-18 218	-19 515	-21 495	-22 887
Net cash flows from operating activities	5 593	6 639	6 990	7 730	7 519
Net cash flows from investments in non-financial assets	-5 549	-6 498	-6 898	-8 402	-9 463
Net cash flows from investments in financial assets for policy purposes	-7	-247	443	1 812	52
Net cash flows from investments in financial assets for liquidity purposes	-330	-87	-285	-76	-275
Net cash flows from financing activities	346	562	339	138	2 976
Net Increase(+)/Decrease(-) in Cash Held	53	369	589	1 203	809
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	44	141	92	-672	-1 944
Acquisitions of assets under finance leases and similar arrangements	6	3	3	3	—
Surplus(+)/Deficit(-)	50	144	95	-669	-1 944

For footnotes see end of table.

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28.5 GENERAL GOVERNMENT CASH FLOW STATEMENT — continued

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
MULTI-JURISDICTIONAL(a)					
Cash Flow Statement					
Cash receipts from operating activities	15 072	15 054	17 957	17 818	20 490
Cash payments for operating activities	-12 995	-13 573	-14 973	-16 677	-17 572
Net cash flows from operating activities	2 077	1 481	2 984	1 141	2 918
Net cash flows from investments in non-financial assets	-1 396	-1 627	-1 921	-2 325	-2 586
Net cash flows from investments in financial assets for policy purposes	25	30	75	20	-5
Net cash flows from investments in financial assets for liquidity purposes	-374	-333	-382	-231	352
Net cash flows from financing activities	469	686	-445	2 062	-65
Net Increase(+)/Decrease(-) in Cash Held	801	236	311	666	614
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	681	-147	1 063	-1 184	332
Acquisitions of assets under finance leases and similar arrangements	-2	-	-	-	-
Surplus(+)/Deficit(-)	680	-147	1 063	-1 184	332
ALL LEVELS OF GOVERNMENT(b)					
Cash Flow Statement					
Cash receipts from operating activities	362 580	387 295	413 426	418 290	416 985
Cash payments for operating activities	-313 223	-344 001	-362 146	-411 345	-436 100
Net cash flows from operating activities	49 356	43 293	51 279	6 945	-19 115
Net cash flows from investments in non-financial assets	-23 778	-27 778	-30 649	-37 645	-49 157
Net cash flows from investments in financial assets for policy purposes	-2 425	6 422	5 335	-8 367	-6 158
Net cash flows from investments in financial assets for liquidity purposes	-18 772	-25 152	-27 083	-17 796	2 580
Net cash flows from financing activities	-285	3 109	6 502	52 608	72 652
Net Increase(+)/Decrease(-) in Cash Held	4 096	-106	5 384	-4 256	802
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	25 578	15 515	20 630	-30 700	-68 272
Acquisitions of assets under finance leases and similar arrangements	-524	-665	-1 205	-1 441	-366
Surplus(+)/Deficit(-)	25 054	14 850	19 425	-32 141	-68 638

— nil or rounded to zero (including null cells)

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classification of a unit to a jurisdiction is otherwise unclear. The main types of units falling into this category are the public universities.

(b) The sum of individual levels of government may not agree with the total All levels of government figures due to transfers between levels of government.

Source: *Government Finance Statistics, Australia (5512.0)*.

Table 28.6 shows the total public sector cash flow statement for all levels of government. For the Commonwealth Government, the cash operating deficit increased by \$33.6 billion from \$-23.5 billion in 2008–09 to \$-57.1 billion in 2009–10. For the state and territory governments, total public sector, the cash operating deficit

decreased by \$1.3b from \$-25.3b in 2008–09 to \$-24.0b in 2009–10.

For the total, All levels of government, total public sector, the cash operating deficit increased by \$35.2b from \$-51.0b in 2008–09 to \$-86.2b in 2009–10.

28.6 TOTAL PUBLIC SECTOR CASH FLOW STATEMENT

	2005-06	2006-07	2007-08	2008-09	2009-10
	\$m	\$m	\$m	\$m	\$m
COMMONWEALTH					
Cash Flow Statement					
Cash receipts from operating activities	280 502	287 677	304 484	302 487	291 812
Cash payments for operating activities	-252 588	-259 773	-272 155	-315 188	-336 436
Net cash flows from operating activities	27 913	27 904	32 329	-12 702	-44 624
Net cash flows from investments in non-financial assets	-10 859	-9 739	-7 993	-10 236	-12 487
Net cash flows from investments in financial assets for policy purposes	-1 223	7 601	2 978	-7 895	-4 440
Net cash flows from investments in financial assets for liquidity purposes	-29 773	-51 539	-31 263	-18 749	21 607
Net cash flows from financing activities	13 491	23 273	4 923	49 425	40 794
Net Increase(+)/Decrease(-) in Cash Held	-451	-2 500	973	-157	849
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	14 689	17 303	24 335	-22 938	-57 112
Acquisitions of assets under finance leases and similar arrangements	-33	-65	-149	-566	-25
Surplus(+)/Deficit(-)	14 656	17 238	24 186	-23 504	-57 137
STATE AND TERRITORY					
Cash Flow Statement					
Cash receipts from operating activities	187 156	196 151	208 764	224 082	252 729
Cash payments for operating activities	-158 691	-176 748	-188 097	-205 211	-225 031
Net cash flows from operating activities	28 465	19 403	20 667	18 871	27 699
Net cash flows from investments in non-financial assets	-22 428	-28 432	-34 012	-42 681	-50 754
Net cash flows from investments in financial assets for policy purposes	274	3 123	187	-3 493	-1 946
Net cash flows from investments in financial assets for liquidity purposes	-4 518	-1 390	559	-16 785	-1 769
Net cash flows from financing activities	-297	11 591	16 939	45 217	27 302
Net Increase(+)/Decrease(-) in Cash Held	1 496	4 294	4 340	1 131	532
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	6 018	-9 037	-13 340	-23 845	-23 070
Acquisitions of assets under finance leases and similar arrangements	-1 045	-821	-1 420	-1 490	-944
Surplus(+)/Deficit(-)	4 973	-9 857	-14 761	-25 335	-24 014
LOCAL					
Cash Flow Statement					
Cash receipts from operating activities	22 952	25 058	26 618	29 288	30 453
Cash payments for operating activities	-17 238	-18 310	-19 585	-21 524	-22 857
Net cash flows from operating activities	5 714	6 749	7 033	7 764	7 595
Net cash flows from investments in non-financial assets	-5 654	-6 809	-6 953	-8 461	-9 489
Net cash flows from investments in financial assets for policy purposes	-1	-203	0	1 787	81
Net cash flows from investments in financial assets for liquidity purposes	-339	-87	-285	-76	-275
Net cash flows from financing activities	389	924	810	188	2 891
Net Increase(+)/Decrease(-) in Cash Held	110	573	605	1 203	804
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	61	-61	80	-696	-1 893
Acquisitions of assets under finance leases and similar arrangements	6	3	3	3	-
Surplus(+)/Deficit(-)	67	-58	84	-693	-1 893

For footnotes see end of table.

...continued

28.6 TOTAL PUBLIC SECTOR CASH FLOW STATEMENT — *continued*

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
MULTI-JURISDICTIONAL(a)					
Cash Flow Statement					
Cash receipts from operating activities	15 613	15 646	18 721	18 617	21 387
Cash payments for operating activities	-13 393	-14 002	-15 530	-17 162	-18 135
Net cash flows from operating activities	2 221	1 643	3 191	1 455	3 251
Net cash flows from investments in non-financial assets	-1 642	-1 683	-1 975	-2 383	-2 653
Net cash flows from investments in financial assets for policy purposes	-55	30	75	20	-5
Net cash flows from investments in financial assets for liquidity purposes	-374	-326	-382	-231	352
Net cash flows from financing activities	654	564	-578	1 833	-355
Net Increase(+)/Decrease(-) in Cash Held	803	227	331	694	590
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	509	-90	1 215	-987	509
Acquisitions of assets under finance leases and similar arrangements	-2	—	—	—	—
Surplus(+)/Deficit(-)	507	-90	1 215	-987	509
ALL LEVELS OF GOVERNMENT(b)					
Cash Flow Statement					
Cash receipts from operating activities	425 561	442 163	467 445	474 024	476 984
Cash payments for operating activities	-362 465	-387 505	-405 694	-459 091	-486 902
Net cash flows from operating activities	63 095	54 658	61 751	14 933	-9 917
Net cash flows from investments in non-financial assets	-40 583	-46 664	-50 933	-63 760	-75 382
Net cash flows from investments in financial assets for policy purposes	-1 238	10 509	4 053	-9 745	-6 294
Net cash flows from investments in financial assets for liquidity purposes	-34 906	-53 559	-29 691	-36 963	19 925
Net cash flows from financing activities	15 517	37 645	21 091	90 737	74 352
Net Increase(+)/Decrease(-) in Cash Held	1 886	2 589	6 271	-4 798	2 684
Surplus(+)/Deficit(-)					
Net cash flows from operating activities and net cash flow from investments in non-financial assets	20 128	7 125	10 823	-48 862	-85 298
Acquisitions of assets under finance leases and similar arrangements	-977	-856	-1 559	-2 157	-923
Surplus(+)/Deficit(-)	19 151	6 269	9 264	-51 019	-86 221

— nil or rounded to zero (including null cells)

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classification of a unit to a jurisdiction is otherwise unclear. The main types of units falling into this category are the public universities.

(b) The sum of individual levels of government may not agree with the total All levels of government figures due to transfers between levels of government.

Source: *Government Finance Statistics, Australia (5512.0)*.

Table 28.7 shows the general government balance sheet for all levels of government. For the Commonwealth Government, the GFS net worth decreased by \$68.6 billion from \$27.1 billion in 2008–09 to \$-41.6 billion in 2009–10. For the state and territory governments, general government, the GFS net worth increased by \$25.5b from \$601.7b to \$627.2b.

For the total, All levels of government, general government, the GFS net worth decreased by \$4.9b from \$937.4b to \$932.5b.

Table 28.8 shows the total public sector balance sheet for all levels of government. For the Commonwealth Government, the GFS net worth decreased by \$68.6 billion from \$27.1 billion in 2008–09 to \$-41.6 billion in 2009–10. For the state and territory governments, total public sector, the GFS net worth increased by \$25.5b from \$601.7b to \$627.2b.

For the total, All levels of government, total public sector, the GFS net worth decreased by \$4.9b from \$937.4b to \$932.5b.

28.7 GENERAL GOVERNMENT BALANCE SHEET—30 June

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
COMMONWEALTH					
Assets					
Financial assets	188 990	191 696	210 375	237 391	238 645
Non-financial assets	67 140	68 547	76 569	82 684	87 655
Total	256 130	260 243	286 944	320 075	326 301
Liabilities					
GFS Net Worth	209 355	213 655	208 303	293 018	367 887
Net debt(a)	46 775	46 588	78 641	27 057	-41 587
Net debt(a)	-12 835	-41 466	-54 156	-21 665	42 010
Net financial worth(b)	-20 365	-21 960	2 072	-55 627	-129 242
STATE AND TERRITORY					
Assets					
Financial assets	251 828	266 138	288 463	320 054	340 284
Non-financial assets	301 664	334 601	406 351	482 064	515 944
Total	553 491	600 739	694 814	802 118	855 778
Liabilities					
GFS Net Worth	145 350	140 280	159 401	200 409	228 594
Net debt(a)	408 141	460 459	535 413	601 709	627 183
Net debt(a)	-31 418	-27 217	-21 510	-11 691	422
Net financial worth(b)	106 477	125 339	129 062	119 645	111 690
LOCAL					
Assets					
Financial assets	13 698	15 493	16 161	17 152	18 335
Non-financial assets	197 372	213 886	246 649	271 680	308 192
Total	211 070	229 378	262 810	288 832	326 526
Liabilities					
GFS Net Worth	10 283	11 512	12 719	12 833	15 484
Net debt(a)	200 787	217 866	250 091	275 999	311 042
Net debt(a)	-4 449	-4 751	-5 023	-6 136	-5 032
Net financial worth(b)	3 415	3 980	3 442	4 319	2 850
MULTI-JURISDICTIONAL(c)					
Assets					
Financial assets	12 307	13 030	13 720	14 900	15 214
Non-financial assets	24 708	26 829	29 130	31 424	32 027
Total	37 015	39 859	42 850	46 325	47 241
Liabilities					
GFS Net Worth	10 724	10 609	10 874	13 663	11 352
Net debt(a)	26 290	29 250	31 976	32 662	35 889
Net debt(a)	-4 195	-4 730	-5 558	-4 631	-7 252
Net financial worth(b)	1 582	2 421	2 845	1 238	3 862
ALL LEVELS OF GOVERNMENT(d)					
Assets					
Financial assets	456 855	476 603	518 987	580 089	602 665
Non-financial assets	590 884	643 863	758 699	867 852	943 367
Total	1 047 738	1 120 466	1 277 686	1 447 941	1 546 033
Liabilities					
GFS Net Worth	365 745	366 303	381 565	510 514	613 505
Net debt(a)	681 993	754 163	896 121	937 427	932 528
Net debt(a)	-52 896	-78 163	-86 247	-44 124	30 148
Net financial worth(b)	91 110	109 781	137 422	69 575	-10 840

(a) Equals deposits held, advances received, Reserve Bank of Australia notes on issue and borrowings less cash and deposits, advances paid, investments, loans and placements.

(b) Equals financial assets less total liabilities. While Net financial worth should add across levels of government, small discrepancies may remain due to the difficulties in accurately identifying the parties and counter-parties associated with financial assets and liabilities.

(c) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classification of a unit to a jurisdiction is otherwise unclear. The main types of units falling into this category are the public universities.

(d) The sum of individual levels of government may not agree with the total All levels of government figures due to transfers between levels of government.

Source: *Government Finance Statistics, Australia (5512.0)*.

28.8 TOTAL PUBLIC SECTOR BALANCE SHEET—30 June

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$m	\$m	\$m	\$m	\$m
COMMONWEALTH					
Assets					
Financial assets	236 292	266 252	301 364	323 279	313 377
Non-financial assets	96 811	73 086	82 545	89 317	95 284
Total	333 103	339 337	383 909	412 596	408 660
Liabilities	298 044	292 545	305 268	385 539	450 247
Shares and other contributed capital	22 363	—	—	—	—
GFS Net Worth	12 696	46 792	78 641	27 057	-41 587
Net debt(a)	-19 045	-56 477	-69 795	-43 206	28 078
Net financial worth(b)	-84 115	-26 294	-3 904	-62 260	-136 870
STATE AND TERRITORY					
Assets					
Financial assets	156 208	170 813	170 992	173 454	198 418
Non-financial assets	522 812	575 462	678 223	814 474	875 995
Total	679 020	746 274	849 214	987 928	1 074 413
Liabilities	270 879	285 816	313 802	386 219	447 229
Shares and other contributed capital	—	—	—	—	—
GFS Net Worth	408 141	460 458	535 412	601 709	627 184
Net debt(a)	-17 047	-9 365	6 546	44 526	63 785
Net financial worth(b)	-114 671	-115 522	-142 810	-212 765	-248 812
LOCAL					
Assets					
Financial assets	12 500	14 158	15 362	16 239	17 775
Non-financial assets	199 069	215 784	247 589	272 762	308 855
Total	211 568	229 942	262 951	289 001	326 630
Liabilities	10 788	12 045	12 860	13 003	15 588
Shares and other contributed capital	—	—	—	—	—
GFS Net Worth	200 787	217 866	250 091	275 999	311 042
Net debt(a)	-4 206	-4 480	-4 936	-6 023	-4 942
Net financial worth(b)	1 718	2 082	2 502	3 237	2 187
MULTI-JURISDICTIONAL(c)					
Assets					
Financial assets	12 418	13 270	13 913	15 131	15 487
Non-financial assets	26 533	28 697	31 000	33 294	33 908
Total	38 951	41 967	44 913	48 425	49 395
Liabilities	11 705	11 761	11 880	14 508	12 050
Shares and other contributed capital	—	—	—	—	—
GFS Net Worth	26 290	29 250	31 976	32 662	35 889
Net debt(a)	-3 299	-3 734	-4 637	-3 935	-6 722
Net financial worth(b)	-243	553	976	-632	1 981
ALL LEVELS OF GOVERNMENT(d)					
Assets					
Financial assets	397 812	444 869	480 952	509 076	523 611
Non-financial assets	845 225	893 026	1 039 354	1 209 845	1 314 040
Total	1 243 037	1 337 894	1 520 306	1 718 921	1 837 651
Liabilities	572 766	583 497	624 185	781 494	905 124
Shares and other contributed capital	22 356	30	—	—	—
GFS Net Worth	647 914	754 367	896 121	937 427	932 528
Net debt(a)	-43 597	-74 057	-72 823	-8 638	80 199
Net financial worth(b)	-197 311	-139 178	-143 233	-272 418	-381 512

— nil or rounded to zero (including null cells)

(a) Equals deposits held, advances received, Reserve Bank of Australia notes on issue and borrowings less cash and deposits, advances paid, investments, loans and placements.

(b) Equals financial assets less total liabilities less shares and other contributed capital. While Net financial worth should add across levels of government, small discrepancies may remain due to the difficulties in accurately identifying the parties and counterparties associated with financial assets and liabilities.

(c) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classification of a unit to a jurisdiction is otherwise unclear. The main types of units falling into this category are the public universities.

(d) The sum of individual levels of government may not agree with the total All levels of government figures due to transfers between levels of government.

Source: *Government Finance Statistics, Australia (5512.0)*.

Taxation revenue

A distinctive feature of the Australian federal system is that the Commonwealth (Australian) Government levies and collects all income tax, from individuals as well as from enterprises. The Commonwealth Government also collects taxes on the provision of goods and services, including the Goods and Services Tax (GST), taxes on the

use of goods and performance of activities, and some taxes on employers' payrolls. The taxation revenue base of state and territory governments consists of taxes on property, employers' payrolls and the provision and use of goods and services such as taxes on gambling and insurance.

The sole source of taxation revenue for local governments is taxes on property.

28.9 TAXATION REVENUE, By level of government

	2005-06	2006-07	2007-08	2008-09	2009-10
	\$m	\$m	\$m	\$m	\$m
COMMONWEALTH GOVERNMENT					
Taxes on income	176 198	189 378	208 579	201 369	187 016
Income taxes levied on individuals					
Personal income tax	114 334	115 982	124 037	123 943	121 261
Prescribed payments by individuals	—	—	—	—	—
Fringe benefits tax	4 084	3 754	3 796	3 581	3 523
Other income tax levied on individuals	—	—	—	—	—
Total	118 418	119 735	127 833	127 524	124 784
Income taxes levied on enterprises					
Company income tax	50 978	60 131	66 661	62 784	54 490
Income tax paid by superannuation funds	5 416	7 577	11 916	9 201	6 164
Prescribed payments by enterprises	—	—	—	—	—
Total	56 394	67 708	78 577	71 986	60 654
Income levied on non-residents					
Dividend withholding tax	332	432	405	315	311
Interest withholding tax	730	1 133	1 355	1 107	840
Other income taxes levied on non-residents	324	370	410	438	426
Total	1 386	1 935	2 170	1 860	1 577
Employers' payroll taxes	369	350	381	377	507
Taxes on property	14	15	15	16	12
Taxes on provision of goods and services	67 822	71 452	75 863	75 141	78 865
Taxes on use of goods and performance of activities	821	793	834	1 098	771
Total taxation revenue	245 223	261 988	285 672	278 002	267 171
STATE AND TERRITORY GOVERNMENTS					
Taxes on income	—	—	—	—	—
Employers' payroll taxes	13 095	14 358	16 022	16 922	16 796
Taxes on property	16 911	19 865	20 967	16 986	20 277
Taxes on provision of goods and services	8 166	8 517	9 162	9 602	9 721
Taxes on use of goods and performance of activities	6 074	6 129	6 980	7 117	7 743
Total taxation revenue	44 246	48 870	53 130	50 626	54 536
LOCAL GOVERNMENTS					
Taxes on income	—	—	—	—	—
Employers' payroll taxes	—	—	—	—	—
Taxes on property	8 726	9 405	10 129	10 866	11 566
Taxes on provision of goods and services	—	—	—	—	—
Taxes on use of goods and performance of activities	—	—	—	—	—
Total taxation revenue	8 726	9 405	10 129	10 866	11 566
ALL LEVELS OF GOVERNMENT					
Taxes on income	176 192	189 369	208 566	201 366	187 006
Employers' payroll taxes	13 049	14 253	15 905	16 779	16 744
Taxes on property	25 643	29 275	31 076	27 825	31 820
Taxes on provision of goods and services	75 987	79 969	85 025	84 743	88 586
Taxes on use of goods and performance of activities	6 892	6 887	7 759	8 156	8 447
Total taxation revenue	297 763	319 754	348 331	338 870	332 602

— nil or rounded to zero (including null cells)

Source: *Taxation Revenue, Australia (5506.0)*.

Total taxation revenue for all levels of government collected in Australia in 2009–10 was \$332.6 billion, a decrease of 2% compared with 2008–09 (table 28.9). Taxes on income decreased \$14.4 billion (7%) while taxes on property increased \$4.0 billion (14%) and taxes on provision of goods and services increased \$3.8 billion (5%). Taxes on income represented 56% of total taxation revenue in 2009–10 for all levels of government and taxes on provision of goods and services, including the goods and services tax (GST), represented 27%.

Commonwealth Government taxation revenue (including taxes received from other levels of government and public corporations) fell 4% from \$278.0 billion in 2008–09 to \$267.2 billion in 2009–10. In 2009–10, Commonwealth taxation revenue represented 80% of taxation revenue for all levels of government.

State and territory government taxation revenue (including taxes from other levels of government and public corporations) increased 8% from \$50.6 billion in 2008–09 to \$54.5 billion in 2009–10. This was driven by a 19% increase in taxes on property bringing the level close to that of 2007–08. Taxes on property were the largest source of taxation revenue (37%) for state and territory governments in 2009–10, followed by employers' payroll taxes at 31%. The revenue base of state and territory governments is supplemented by the distribution of grants from the Commonwealth Government, which includes the allocation of GST revenue.

Australian residents paid an average of \$15,005 for all taxes in 2009–10, a decrease of 4% compared with 2008–09 (table 28.10). The average amount

of Commonwealth Government taxation per person fell by 6% from \$12,793 in 2008–09 to \$12,053 in 2009–10. Total state, territory and local government taxes per person averaged \$2,976 a year in 2009–10, an increase of 5% compared with 2008–09.

International comparisons

Table 28.11 provides an international comparison of OECD countries' general government net financial liabilities as a percentage of nominal GDP. The Australian GDP data are on a 2008 System of National Accounts (2008 SNA) basis while other countries are on a 1993 SNA basis. The table provides an indication of the countries' relative financial positions.

Net financial liabilities measures the gross financial liabilities of the general government sector less the financial assets of the general government sector. Depending on the institutional structure of the country concerned and data availability, such assets may be cash, bank deposits, loans to the private sector, participation in private sector companies, holdings in public corporations or foreign exchange reserves. If a country's general government records a negative percentage for its net financial liabilities as a percentage of nominal GDP, its financial assets are greater than its financial liabilities.

Australia's general government net financial liabilities increased to 1.8% of GDP in 2010, ranking Australia 10th lowest out of the 30 countries represented, a drop from 9th in 2009.

28.10 TAXATION PER PERSON(a), By level of government

	2005–06	2006–07	2007–08	2008–09	2009–10
	\$	\$	\$	\$	\$
Commonwealth Government	11 936	12 551	13 435	12 793	12 053
State, territory and local government					
New South Wales	2 732	2 980	3 081	2 944	3 093
Victoria	2 591	2 747	2 958	2 888	3 072
Queensland	2 272	2 529	2 757	2 574	2 658
South Australia	2 413	2 568	2 795	2 786	2 855
Western Australia	3 005	3 223	3 465	3 029	3 305
Tasmania	1 869	1 946	2 133	2 106	2 252
Northern Territory	2 087	2 030	2 124	2 153	2 176
Australian Capital Territory	2 389	2 756	3 012	2 910	3 175
Average	2 577	2 788	2 970	2 824	2 976
All levels of government	14 494	15 319	16 382	15 594	15 005

(a) Average annual estimated resident population.

Source: *Taxation Revenue, Australia (5506.0)*.

28.11 GENERAL GOVERNMENT NET FINANCIAL LIABILITIES, Percentage of nominal GDP

	2006	2007	2008	2009	2010
Australia	-4.7	-7.3	-7.6	-3.8	1.8
Austria	33.9	30.8	33.6	38.6	44.0
Belgium(a)	77.2	73.3	73.9	80.1	80.8
Canada	26.3	22.9	22.4	28.4	30.4
Czech Republic	-11.7	-14.2	-6.0	-1.8	3.7
Denmark	1.9	-3.8	-6.6	-4.6	-1.1
Estonia	-31.4	-29.6	-26.2	-29.1	-35.2
Finland(b)	-69.4	-72.6	-52.4	-63.2	-63.9
France	37.2	34.8	42.7	49.3	56.6
Germany(c)	47.4	42.2	43.9	47.9	50.1
Greece	86.1	80.4	88.9	100.5	114.2
Hungary	51.2	52.3	51.4	58.5	60.6
Iceland	7.9	-1.0	26.0	39.9	43.1
Ireland	1.5	-0.2	12.5	26.8	59.1
Italy	90.7	87.1	89.9	100.5	99.1
Japan(d)	84.3	81.5	96.5	110.0	116.3
Korea, Republic of (South)(e)	-37.0	-40.4	-37.9	-38.4	-37.3
Luxembourg	-44.7	-44.1	-44.7	-45.6	-40.0
Netherlands	31.6	27.9	26.8	29.9	34.6
New Zealand	-8.1	-13.1	-12.6	-8.9	-4.5
Norway	-135.2	-141.6	-126.4	-156.0	-165.9
Poland	22.4	17.0	17.3	22.5	28.7
Portugal	50.1	49.6	54.0	64.3	68.8
Slovakia	6.4	7.3	8.9	17.2	20.4
Slovenia	-9.9	-17.6	-5.7	0.1	7.2
Spain	23.2	18.7	23.3	34.8	40.2
Sweden	-18.9	-22.5	-16.6	-24.4	-26.1
Switzerland	5.5	1.0	2.8	1.7	1.2
United Kingdom	27.5	28.5	33.0	44.0	56.3
United States of America	41.7	42.6	48.2	59.8	67.3
Euro area	46.6	42.5	46.6	53.6	57.5
Total OECD	40.0	38.2	43.5	52.1	57.7

Note: Net debt measures are not always comparable across countries due to different definitions or treatment of debt (and asset) components. First, the treatment of government liabilities with respect to their employee pension plans may be different. For further details see the OECD website: Economic Outlook Sources, <http://www.oecd.org/document/25/0,3746,en_2649_34109_33702745_1_1_1_1,00.html>. Second, the range of items included as general government assets differs across countries. For example, equity holdings are excluded from government assets in some countries, whereas foreign exchange, gold and SDR holdings are considered as assets in the United States of America and the United Kingdom. For details, see OECD Economic Outlook Sources and Methods <<http://www.oecd.org/eco/sources-and-methods>>. For euro area countries with unsustainable fiscal positions that have asked for assistance from the European Union and the IMF (Greece, Ireland and Portugal), the change in 2010 in government financial liabilities has been approximated by the change in government liabilities recorded for the Maastricht definition of general government debt.

(a) Includes the debt of the Belgium National Railways Company (SNCB) from 2005 onwards.

(b) From 1995 onwards housing corporation shares are no longer classified as financial assets.

(c) Includes the debt of the Inherited Debt Fund from 1995 onwards.

(d) Includes the debt of the Japan Railway Settlement Corporation and the National Forest Special Account from 1998 onwards.

(e) Data are on a non-consolidated basis (1993 SNA).

Source: OECD Economic Outlook 89 database, Annex Table 33.

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29

PRICES

Price indexes provide summary measures of the movements in various categories of prices and are used to measure inflation, analyse and monitor price behaviour, and adjust contracts and government payments such as pensions.

This chapter provides time series, underlying concepts and methodologies for the price indexes produced by the Australian Bureau of Statistics (ABS). They are the Consumer Price Index (CPI) and related indexes, the Labour Price Index (LPI), House price indexes, Producer price indexes, and International trade price indexes.

Some information on price indexes can also be found in chapters 8 *Labour*, 10 *Housing*, 30 *National accounts* and 31 *International accounts and trade*.

Concept of a price index

There are many situations where there is a need to compare two (or more) sets of observations on prices. For example, a household might want to compare the prices of groceries bought today with the prices of the same groceries bought last year; a manufacturer may want to compare movements in the prices of its outputs with movements in its production costs between two points in time; or an employer might be interested in comparing prices of labour inputs today compared with those of five years ago.

In some situations, the price comparisons might only involve a single commodity, in which case it is simply a matter of directly comparing the two price observations. For example, a household might want to assess how the price of bread today compares with the price at some previous point in time.

In other circumstances, the required comparison is of prices across a range of commodities. For example, a comparison might be required of clothing prices. There is a wide range of clothing types and prices (e.g. women's coats, girls' pyjamas, boys' shorts, men's suits) to be considered. While comparisons can readily be made for individual or identical clothing items, this is unlikely to enable a satisfactory result for all clothing in aggregate. A method is required for combining the prices across this diverse range of items, while allowing for the fact that they have many different units or quantities of measurement. This is where price indexes play an extremely useful role.

A price index is a measure of changes in a set of prices over time. Price indexes allow the comparison of two sets of prices for a common item or group of items. In order to compare the sets of prices over time, it is necessary to designate one set the 'reference' set and the other the 'comparison' set. In the ABS, the reference price set is used as the index reference period for constructing the index and by convention is given an index value of 100.0. The value of the price index for the comparison set provides a direct measure of price difference between the two sets of prices. For example, if the price of the comparison set had increased by 35% since the base period, then the price index would be 135.0. Similarly, if the price had fallen by 5% since the base period, the index would stand at 95.0.

It is important to note that a price index measures price movements (i.e. percentage changes) and not actual price levels (dollar amounts). For example, if the index for breakfast cereals in a certain period is 140.0 and the index for bread in the same period is 180.0, it does not mean that bread is more expensive than breakfast cereals. It simply means that the price of bread has increased at twice the rate of the price of breakfast cereals since the base period.

It should also be noted that price indexes do not measure changes in the quantities of goods or services that underpin the value weights in each price index. These quantities are held constant. The relative value weights of items will change over time in response to changes in relative prices. Presentation of weights in value terms reflects the fact that it is simply not possible to present quantity weights in a meaningful way. In the CPI, for instance, the weight associated with each particular class of items is expressed in terms of the expenditure by Australian households on that particular class of items as a proportion of their total expenditure. Hence the weights in the CPI are often referred to as 'expenditure shares'. This weight represents a specific 'quantity x price' of that particular class of items at the beginning of a series. As the price associated with each particular class of items changes, the relative expenditure shares can change as a proportion of the total.

Consumer Price Index (CPI)

The CPI has been designed as a general measure of price inflation faced by households. While several conceptual bases are possible, the ABS has adopted the concept of the CPI as a measure of changes, over time, in the prices of a basket of goods and services acquired by households in the eight capital cities in Australia.

The simplest way of thinking about the CPI is to imagine a basket of goods and services of the kind typically acquired by Australian households. As prices vary, the total cost of this basket will also vary. The CPI is a measure of the changes in the cost of this basket as the prices of items in it change.

From the September quarter 2011 onwards, the total basket is divided into the following 11 major commodity groups: Food and non-alcoholic beverages; Alcohol and tobacco; Clothing and footwear; Housing; Furnishings, household

equipment and services; Health; Transport; Communication; Recreation and culture; Education; and Insurance and financial services. These groups are, in turn, divided into 33 sub-groups and the sub-groups into 87 expenditure classes.

In addition to the aggregate 'All groups' index, indexes are compiled and published for each of the groups, sub-groups and expenditure classes for each state and territory capital city. National indexes are constructed as the weighted average of the indexes compiled for each of the eight capital cities.

The 16th series CPI is the latest of a number of retail/consumer price indexes that have been constructed for various purposes by the ABS. More information about the CPI can be found in *Consumer Price Index: Concepts, Sources and Methods, 2011* (6461.0).

Table 29.25 at the end of this chapter presents internationally comparable CPI data for selected countries.

16th series review

Australia has produced indexes of price inflation facing households going back as far as 1901. Prior to the introduction of the CPI in 1960, there were five series of retail price indexes compiled by the (then) Commonwealth Bureau of Census and Statistics. Since 1960, when the CPI was first compiled, the ABS has maintained a program of periodic reviews of the CPI to ensure that it continues to remain relevant and accurate. The most important objective of these reviews is to update the CPI weighting patterns, which represent the average Australian household expenditure on goods and services. These reviews also provide an opportunity to reassess the scope and coverage of the index.

The 16th series review of the Australian CPI was undertaken during 2010 to look at the conceptual basis, scope and coverage of the CPI and was the first major review since 1997. The issues considered in the review were set out in the *Information Paper: Issues to be considered during the 16th Series Australian Consumer Price Index Review* (6468.0) released on 15 December 2009. Following the release of the paper, there was extensive public consultation. The CPI Review Advisory Group represents a broad cross-section of CPI users and was established to provide advice to the ABS.

The outcomes of the review were published in *Outcome of the 16th Series Australian Consumer Price Index Review* (6469.0) released on 6 December 2010. Key changes for the 16th series CPI included:

- The CPI Commodity Classification (CPICC) was updated to ensure that it reflects contemporary wording and groupings and aligns more closely with the United Nations Classification of Individual Consumption According to Purpose (COICOP).
- The coverage of the CPI remained largely the same; however, the indirectly measured component of the Deposit and Loan Facilities Index was removed from the headline CPI, with direct fees and charges remaining.
- New weights were implemented based on the 2009–10 Household Expenditure Survey (HES) and a number of new analytical series were introduced with the 16th series, including the All Groups CPI, seasonally adjusted, weighted average of eight capital cities.
- The analytical measures of underlying trend inflation, the trimmed mean and weighted median, were revised and are now calculated using the standard ABS seasonal adjustment methodology.

A paper entitled *Information Paper: Introduction of the 16th Series Australian Consumer Price Index, 2011* (6470.0) was released on 22 September, 2011 and the first publication of the 16th series CPI was released on 26 October 2011 (6401.0).

Price movements by city

Table 29.1 presents All groups CPI numbers for each of the eight capital cities and for the weighted average of the eight capital cities, together with percentage changes.

The capital city indexes measure price movements over time in each city individually. They cannot be used to compare price levels between capital cities. For example, the index for Sydney in 2010–11 of 174.8, compared with the corresponding index for Darwin of 173.2, does not mean that prices in Sydney are higher than those in Darwin. It means that, since the reference base period (1989–90), prices in Sydney have increased by a greater percentage than those in Darwin (74.8% compared with 73.2%).

29.1 CONSUMER PRICE INDEX, Capital cities(a)

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Weighted Average of eight capital cities
INDEX NUMBER(b)									
2006–07	156.2	154.2	158.3	159.2	156.1	155.7	152.9	156.4	156.1
2007–08	160.9	159.6	164.8	164.4	161.7	160.3	158.3	162.0	161.4
2008–09	165.8	164.1	171.0	169.7	166.6	164.9	163.6	167.5	166.4
2009–10	169.7	167.5	175.5	173.4	170.8	169.3	168.7	171.1	170.3
2010–11	174.8	173.0	181.4	178.9	175.7	174.1	173.2	175.8	175.6
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)									
2006–07	2.7	2.6	3.3	2.6	3.9	2.5	4.4	2.9	2.9
2007–08	3.0	3.5	4.1	3.3	3.6	3.0	3.5	3.6	3.4
2008–09	3.0	2.8	3.8	3.2	3.0	2.9	3.3	3.4	3.1
2009–10	2.4	2.1	2.6	2.2	2.5	2.7	3.1	2.1	2.3
2010–11	3.0	3.3	3.4	3.2	2.9	2.8	2.7	2.7	3.1

(a) All groups index numbers. Reference base period is 1989–90 = 100.0.

(b) Arithmetic average of quarterly index numbers for financial year.

Source: *Consumer Price Index, Australia* (6401.0).

29.2 CONSUMER PRICE INDEX, Commodity groups(a)

	Food and non- alcoholic beverages	Alcohol and tobacco	Clothing and footwear	Furnishings, household equipment and services	Health Transport	Recre- ation and culture	Commu- nication	Edu- cation	Insu- rance and financial services	All groups CPI
INDEX NUMBER(b)										
2006–07	172.4	240.6	108.4	133.7	124.6 223.5	158.0	110.8	133.8	264.6	103.0 156.1
2007–08	177.8	249.8	109.3	140.6	123.4 233.5	165.2	111.2	135.7	275.6	109.4 161.4
2008–09	186.5	263.6	110.2	149.0	125.1 245.4	163.7	112.0	137.1	289.1	111.6 166.4
2009–10	189.5	276.3	109.9	157.6	128.0 257.2	164.9	112.4	137.7	305.4	109.3 170.3
2010–11	196.5	303.3	107.7	165.3	127.9 269.0	168.5	112.3	136.1	323.2	112.7 175.6
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)										
2006–07	6.2	3.2	-0.7	3.4	2.0 4.7	1.6	1.2	1.4	4.5	1.8 2.9
2007–08	3.1	3.8	0.8	5.2	-1.0 4.5	4.6	0.4	1.4	4.2	6.2 3.4
2008–09	4.9	5.5	0.8	6.0	1.4 5.1	-0.9	0.7	1.0	4.9	2.0 3.1
2009–10	1.6	4.8	-0.3	5.8	2.3 4.8	0.7	0.4	0.4	5.6	-2.1 2.3
2010–11	3.7	9.8	-2.0	4.9	-0.1 4.6	2.2	-0.1	-1.2	5.8	3.1 3.1

(a) Weighted average of eight capital cities. Reference base period is 1989–90 = 100.0.

(b) Arithmetic average of quarterly index numbers for financial year.

Source: *Consumer Price Index, Australia* (6401.0).

Price movements by commodity group

Table 29.2 presents, for the weighted average of the eight capital cities, index numbers for each of the 11 commodity groups of the 16th Series CPI and for All groups, together with percentage changes.

Living cost indexes

The ABS compiles and publishes Living cost indexes (LCIs) specifically designed to measure

changes in living costs for selected population sub-groups. There are two LCI publications produced by the ABS on a quarterly basis: *Analytical Living Cost Indexes for Selected Australian Household Types* (6463.0) (ALCIs) and the *Pensioner and Beneficiary Living Cost Index* (6467.0) (PBLCI). The LCIs are produced as a by-product of the CPI and are the conceptually preferred measures for assessing the effect of changes in prices on the out-of-pocket living expenses experienced by different types of Australian households.

Conceptually, the most notable difference between the LCIs and the CPI is that the LCIs include interest charges but do not include new house purchases, while the CPI includes new house purchases but does not include interest charges. Insurance (other than health insurance) is also treated differently in the LCIs. Under the acquisitions approach used in the CPI, the weight for insurance relates to the net value of the service provided by the insurance company – in simple terms, the amount of premiums paid by households less the amounts reimbursed by way of claims. Under the outlays approach used in the LCIs, the weight relates to the gross value of insurance premiums paid by households.

The ALCIs and the PBLCI have recently been updated to reflect household expenditure weighting patterns derived from the 2009–10 Household Expenditure Survey (HES) and data from other sources. The 16th series ALCIs and PBLCI were introduced in respect of the September quarter 2011 and were linked to the 15th series at the June quarter 2011. As the ALCIs and PBLCI are constructed using information from the CPI, they will be affected by changes as a result of the introduction of the 16th series CPI. For more information regarding the 16th series CPI, please refer to *Information Paper: Introduction of the 16th Series Australian Consumer Price Index, 2011* (6470.0).

Due to the improved quality of some of the estimates of household expenditure available from the 2009–10 HES, the scope of the 16th series weights for Employee households, Age pensioner households and Other government transfer recipient households has changed from national estimates to estimates based on the

weighted average of eight capital cities. This is consistent with the price collection and weighting pattern used for the CPI. The 16th series weights for Self-funded retiree households continue to be derived using national expenditures, consistent with the approach for the 15th series.

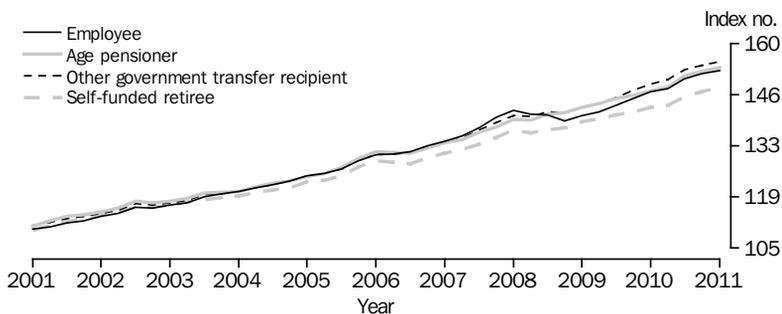
Analytical living cost indexes

The Analytical living cost indexes (ALCIs) are specifically designed to measure changes in living costs for four selected household types: Employee households, Age pensioner households, Other government transfer recipient households and Self-funded retiree households. The ALCIs have been compiled and published by the ABS since June 2000. In recognition of the widespread interest in the extent to which the impact of price change varies across different sub-groups of the Australian population, the ALCIs have been published on a quarterly basis from the September quarter 2009.

Graph 29.3 presents the ALCIs and table 29.4 compares them to the CPI.

Between 2009–10 and 2010–11, changes in living costs ranged from a rise of 3.2% for Self-funded retiree households to a rise of 4.7% for Other government transfer recipient households (table 29.4). The CPI rose by 3.1% over the same period. Over the period from 1998–99 to 2010–11, changes in living costs for three of the four selected Australian household types were larger than the change in the CPI. Changes in living costs ranged from 44.9% for Self-funded retiree households to 51.7% for Other government transfer recipient households. The CPI rose by 45.1% over the same period.

29.3 ANALYTICAL LIVING COST INDEXES FOR SELECTED AUSTRALIAN HOUSEHOLD TYPES (a)—September quarter 2001 to September quarter 2011



(a) Reference base period is June quarter 1998 = 100.0.

Source: *Analytical Living Cost Indexes for Selected Australian Household Types* (6463.0).

29.4 ANALYTICAL LIVING COST INDEXES FOR SELECTED AUSTRALIAN HOUSEHOLD TYPES(a)

	Employee	Age pensioner	Other government transfer recipient	Self-funded retiree	CPI (re-referenced)(b)
INDEX NUMBER(c)					
2006–07	131.0	131.1	130.9	128.4	129.0
2007–08	136.7	135.3	136.0	132.5	133.4
2008–09	140.8	140.4	141.1	136.8	137.6
2009–10	142.8	144.6	144.9	140.4	140.7
2010–11	149.4	149.9	151.7	144.9	145.1
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)					
2006–07	3.1	3.2	3.1	2.8	2.4
2007–08	5.2	3.8	4.6	3.7	4.0
2008–09	3.0	3.8	3.7	3.2	3.1
2009–10	1.4	3.0	2.7	2.6	2.3
2010–11	4.6	3.7	4.7	3.2	3.1

(a) Reference base period is June quarter 1998 = 100.0.

(b) The CPI has been re-referenced from a reference base period of 1989–90 = 100.0 to June quarter 1998 = 100.0 for ease of comparison with the Analytical living cost indexes for selected Australian household types.

(c) Arithmetic average of quarterly index numbers for financial year.

Source: *Analytical Living Cost Indexes for Selected Australian Household Types* (6463.0).

Pensioner and Beneficiary Living Cost Index (PBLCI)

The government's Pension Review Report was completed by Dr Jeff Harmer in February 2009 and followed a comprehensive review of Australia's pension system. In response to the review, the government funded the ABS to produce a new price index that reflects changes in the living costs of pensioners and other households receiving income support more explicitly than the CPI. In the 2009 Federal Budget, the government indicated that it will use the new index, known as the PBLCI, to index base pension rates where it is higher than the CPI. The PBLCI was first published on 24 August 2009, with quarterly data dating back to the June quarter 2007. The index is published by the ABS on a quarterly basis.

The PBLCI is a measure of the effect of changes in prices on the living expenses of a sub-group of the Australian population: Age pensioner households and Other government transfer recipient households. The PBLCI is based on the Analytical living cost indexes (ALCIs), which have been compiled and published by the ABS since June 2000 (table 29.5).

The PBLCI publication also compares the percentage movements of the PBLCI with the percentage movements of the CPI (graphs 29.6 and 29.7).

Long-term price series

Although the CPI has only been compiled from 1948, an approximate long-term measure of inflation faced by households has been constructed by linking together earlier selected retail price index series (table 29.8). The index numbers are expressed on the reference base period of 1945 = 100.0.

For more information about these former retail price index series see the article *History of retail/consumer price indexes in Australia* in *Year Book Australia 2005*.

Graph 29.9 shows the annual percentage changes derived from this retail/consumer price index series for the period 1911–2011.

Labour Price Index (LPI)

The LPI measures changes in the price of labour services. It is unaffected by changes in the quality or quantity of work performed. As such, it is unaffected by changes in the composition of the labour force, hours worked, or changes in characteristics of employees (e.g. work performance). The LPI is produced annually on a financial year basis and consists of two components: a Wage price index (WPI), published quarterly, and Non-wage price indexes, which are available for each financial year.

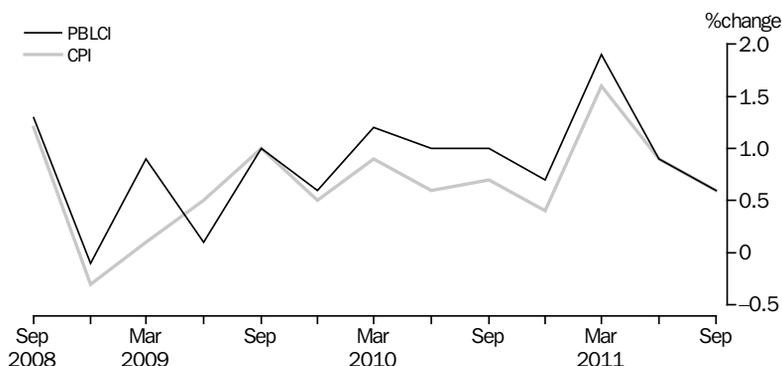
**29.5 PENSIONER AND BENEFICIARY LIVING COST INDEX,
All Groups, Weighted average of eight capital cities**

Quarters	INDEX NUMBERS(a)	PERCENTAGE CHANGE (%)		CHANGE IN POINTS CONTRIBUTION	
		From corresponding		From corresponding	
		From previous quarter	quarter of previous year	From previous quarter	quarter of previous year
2009					
March	107.0	0.9	3.5	1.0	3.6
June	107.1	0.1	2.3	0.1	2.4
September	108.2	1.0	2.0	1.1	2.1
December	108.8	0.6	2.6	0.6	2.8
2010					
March	110.1	1.2	2.9	1.3	3.1
June	111.2	1.0	3.8	1.1	4.1
September	112.3	1.0	3.8	1.1	4.1
December	113.1	0.7	4.0	0.8	4.3
2011					
March	115.2	1.9	4.6	2.1	5.1
June	116.2	0.9	4.5	1.0	5.0
September	116.9	0.6	4.1	0.7	4.6

(a) Reference base period is June quarter 2007 = 100.0.

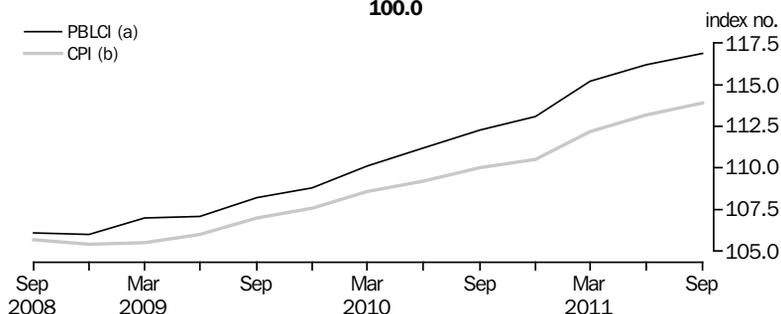
Source: Pensioner and Beneficiary Living Cost Index (6467.0).

29.6 PERCENTAGE CHANGE FROM PREVIOUS QUARTER FOR PBLCI AND CPI



Source: Pensioner and Beneficiary Living Cost Index (6467.0).

29.7 PBLCI AND CPI (RE REFERENCED), INDEX NUMBERS, June quarter 2007 = 100.0



(a) Reference base period is June quarter 2007 = 100.0.

(b) Re-referenced to reference base period of June quarter 2007 = 100.0.

Source: Pensioner and Beneficiary Living Cost Index (6467.0).

29.8 RETAIL/CONSUMER PRICE INDEX NUMBERS(a)(b)

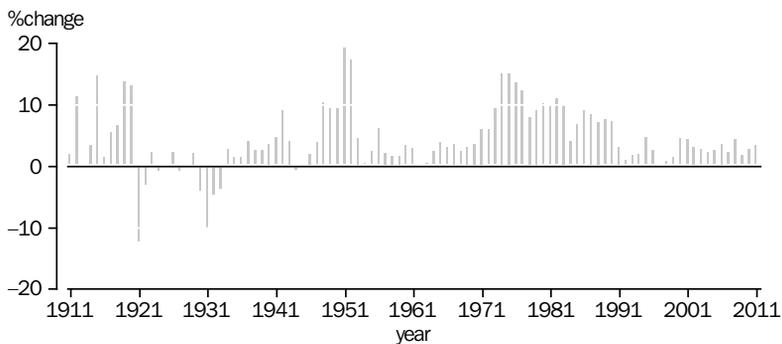
Year	Index no.	Year	Index no.	Year	Index no.	Year	Index no.
1901	47	1931	78	1961	252	1991	1 898
1902	50	1932	74	1962	251	1992	1 917
1903	49	1933	71	1963	252	1993	1 952
1904	46	1934	73	1964	258	1994	1 989
1905	48	1935	74	1965	268	1995	2 082
1906	48	1936	75	1966	276	1996	2 136
1907	48	1937	78	1967	286	1997	2 141
1908	51	1938	80	1968	293	1998	2 159
1909	51	1939	82	1969	302	1999	2 191
1910	52	1940	85	1970	313	2000	2 289
1911	53	1941	89	1971	332	2001	2 389
1912	59	1942	97	1972	352	2002	2 462
1913	59	1943	101	1973	385	2003	2 530
1914	61	1944	100	1974	443	2004	2 588
1915	70	1945	100	1975	510	2005	2 658
1916	71	1946	102	1976	579	2006	2 753
1917	75	1947	106	1977	650	2007	2 817
1918	80	1948	117	1978	702	2008	2 940
1919	91	1949	128	1979	766	2009	2 994
1920	103	1950	140	1980	844	2010	3 079
1921	90	1951	167	1981	926	2011	3 183
1922	87	1952	196	1982	1 028		
1923	89	1953	205	1983	1 132		
1924	88	1954	206	1984	1 177		
1925	88	1955	211	1985	1 257		
1926	90	1956	224	1986	1 370		
1927	89	1957	229	1987	1 487		
1928	89	1958	233	1988	1 594		
1929	91	1959	237	1989	1 714		
1930	87	1960	245	1990	1 839		

(a) Reference base period is 1945 = 100.0.

(b) The index numbers from 1901 to 1980 relate to the weighted average of six state capital cities, and from 1981 to the weighted average of eight capital cities. Index numbers are for calendar years.

Source: *Consumer Price Index: Concepts, Sources and Methods, 2011 (6461.0)*.

29.9 ANNUAL PERCENTAGE CHANGE DERIVED FROM RETAIL/CONSUMER PRICE INDEX, 1911 to 2011



Source: *Consumer Price Index: Concepts, Sources and Methods, 2011 (6461.0)*.

WPIs are compiled using information collected from a representative sample of employee jobs within a sample of employing organisations. The ABS constructs four WPIs on a quarterly basis:

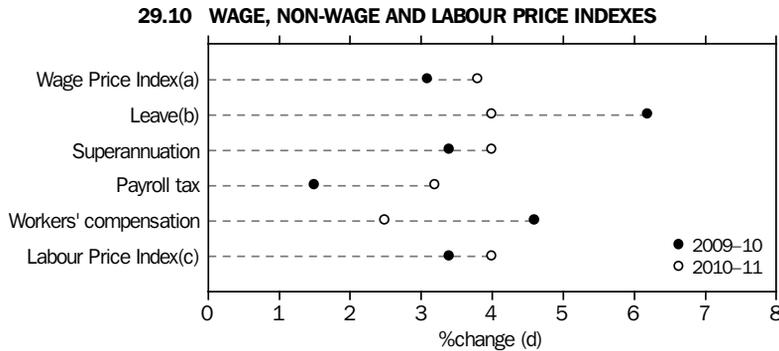
- ordinary time hourly rates of pay excluding bonuses
- ordinary time hourly rates of pay including bonuses
- total hourly rates of pay excluding bonuses and
- total hourly rates of pay including bonuses.

Four Non-wage indexes are constructed on a financial year basis:

- annual and public holiday leave
- superannuation
- payroll tax and
- workers' compensation.

From these wage and non-wage components, two LPIs are constructed on a financial year basis, one including bonuses and one excluding bonuses. Only those indexes which exclude bonuses are pure price indexes because bonuses tend to reflect changes in the quantity and quality of work performed.

Graph 29.10 shows percentage changes from the previous financial year for 2009–10 and 2010–11 for several LPI series. In 2010–11, the WPI (total hourly rates of pay excluding bonuses) recorded a larger rise (3.8%) from the previous financial year than in 2009–10 (3.1%). In 2010–11, the Superannuation and Payroll tax indexes recorded larger rises, whereas the Leave and Workers' compensation indexes recorded smaller rises compared to 2009–10. The large rise in the Leave index of 6.2% in 2009–10 was partly due to an extra public holiday in New South Wales, Victoria, Queensland and South Australia.



(a) Total hourly rates of pay excluding bonuses. (b) Annual leave and public holiday leave. (c) Excluding bonuses. (d) Percentage change from the previous financial year.

Source: *Labour Price Index, Australia* (6345.0).

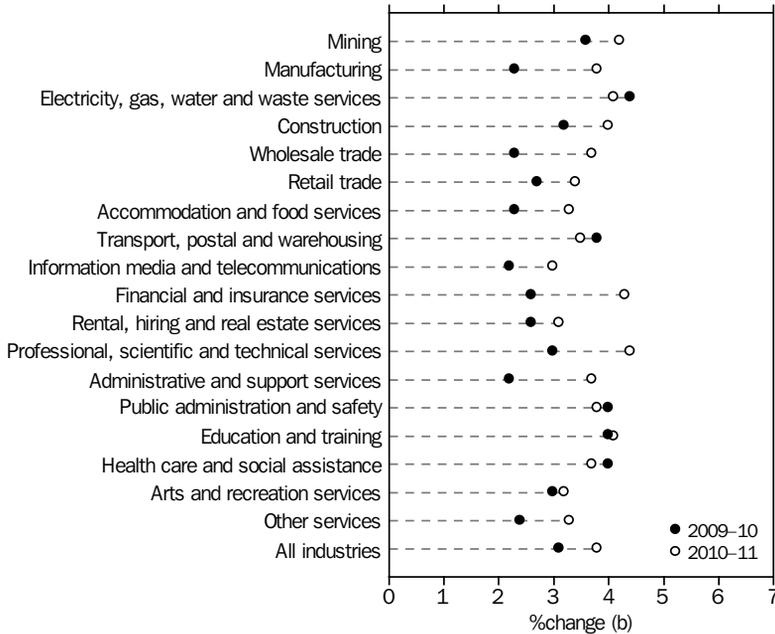
29.11 WAGE PRICE INDEX TOTAL HOURLY RATES OF PAY EXCLUDING BONUSES

	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
INDEX NUMBER(a)									
2006–07	92.8	92.6	92.1	91.9	89.9	92.4	92.1	92.4	92.3
2007–08	96.4	96.2	96.0	96.2	95.1	95.9	95.7	96.3	96.2
2008–09	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2009–10	103.2	102.8	103.3	102.8	103.4	103.8	103.4	103.5	103.1
2010–11	107.0	106.7	107.3	106.4	107.4	107.3	107.5	107.2	107.0
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)									
2006–07	3.8	3.6	4.5	4.0	4.8	4.4	3.8	4.1	4.1
2007–08	3.9	3.9	4.2	4.7	5.8	3.8	3.9	4.2	4.2
2008–09	3.7	4.0	4.2	4.0	5.2	4.3	4.5	3.8	4.0
2009–10	3.2	2.8	3.3	2.8	3.4	3.8	3.4	3.5	3.1
2010–11	3.7	3.8	3.9	3.5	3.9	3.4	4.0	3.6	3.8

(a) Reference base period is financial year 2008–09 = 100.0.

Source: *Labour Price Index, Australia* (6345.0).

29.12 WAGE PRICE INDEX TOTAL HOURLY RATES OF PAY EXCLUDING BONUSES, By industry (a)



(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition. (b) Percentage change from the previous financial year.

Source: *Labour Price Index, Australia* (6345.0).

In 2010–11, the LPI (excluding bonuses) recorded a larger rise (4.0%) from the previous financial year than it did in 2009–10 (3.4%).

As shown in table 29.11, rises from the previous financial year for the WPI (total hourly rates of pay excluding bonuses) varied across states and territories. All index numbers have been calculated on a reference base period of 2008–09, that is, the numbers in each index series have been set to equal 100.0 for the financial year 2008–09. For Australia, the rise from the financial year 2009–10 to 2010–11 was 3.8%. For the states and territories, the largest financial year rise was recorded by the Northern Territory (4.0%) and the smallest by Tasmania (3.4%).

Financial year rises in the total hourly rates of pay excluding bonuses, by industry, series are shown in graph 29.12. Rises from financial year 2009–10 to 2010–11 ranged from 3.0% for the Information media and telecommunications industry to 4.4% for the Professional, scientific and technical services industry.

House price indexes

There are two House price indexes (HPIs) produced by the ABS, the Established House Price Index and the Project Home Price Index. The former covers transactions in detached residential dwellings on their own block of land regardless of age (i.e. including new houses sold as a house/land package as well as second-hand houses). Price changes, therefore, relate to changes in the total price of dwelling and land. The Project Home Price Index measures the movements in the cost of constructing a dwelling on a client's land.

Tables 29.13 and 29.14 provide estimates of changes in house prices for each of the eight capital cities of Australia and the weighted average of the eight capital cities. The information is presented in the form of price indexes constructed separately for established houses and project homes. They are calculated on the reference base period of 2003–04 = 100.0. The capital city indexes measure price

29.13 ESTABLISHED HOUSE PRICE INDEX

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Weighted average of eight capital cities
INDEX NUMBER(a)									
2003-04	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2004-05	96.1	101.9	104.2	106.5	114.4	111.8	115.9	99.9	101.2
2005-06	93.3	106.4	108.2	111.2	145.7	119.7	138.8	103.5	105.1
2006-07	95.5	117.2	119.2	119.7	192.8	131.1	160.7	113.5	115.5
2007-08	101.9	139.9	141.8	143.4	194.8	142.2	175.2	127.1	129.0
2008-09	98.0	139.0	139.8	146.9	184.0	141.4	190.1	123.2	126.1
2009-10	111.7	166.7	151.7	158.0	202.5	155.3	216.6	141.6	143.5
2010-11(b)	116.7	174.5	150.2	161.2	200.7	159.1	220.0	147.4	147.7
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)									
2003-04	12.0	11.2	32.5	20.3	18.5	44.9	14.0	20.9	15.5
2004-05	-3.9	1.9	4.2	6.5	14.4	11.8	15.9	-0.1	1.2
2005-06	-2.9	4.4	3.8	4.4	27.4	7.1	19.8	3.6	3.9
2006-07	2.4	10.2	10.2	7.6	32.3	9.5	15.8	9.7	9.9
2007-08	6.7	19.4	19.0	19.8	1.0	8.5	9.0	12.0	11.7
2008-09	-3.8	-0.6	-1.4	2.4	-5.5	-0.6	8.5	-3.1	-2.2
2009-10	14.0	19.9	8.5	7.6	10.1	9.8	13.9	14.9	13.8
2010-11(b)	4.5	4.7	-1.0	2.0	-0.9	2.4	1.6	4.1	2.9

(a) Reference base period is 2003-04 = 100.0.

(b) Subject to revision.

Source: House Price Indexes: Eight Capital Cities (6416.0).

29.14 PROJECT HOME PRICE INDEX

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Weighted average of eight capital cities
INDEX NUMBER(a)									
2003-04	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2004-05	105.3	103.3	105.5	103.6	111.9	111.6	109.5	102.0	106.1
2005-06	107.7	105.9	107.4	106.2	130.3	116.8	119.8	105.4	110.3
2006-07	108.1	105.9	111.9	108.4	144.1	120.3	135.6	108.4	113.3
2007-08	112.3	111.2	121.2	113.8	148.7	126.7	144.7	112.4	118.8
2008-09	117.1	112.8	128.4	120.4	153.4	129.9	152.8	118.6	123.2
2009-10	121.4	118.6	129.9	123.3	156.0	135.9	157.2	121.4	127.2
2010-11	124.9	122.3	132.8	125.4	159.9	140.4	162.5	124.6	130.7
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)									
2003-04	4.1	4.0	13.1	6.4	9.4	8.5	5.5	9.2	7.4
2004-05	5.3	3.3	5.5	3.6	11.9	11.6	9.5	2.0	6.1
2005-06	2.3	2.5	1.8	2.5	16.4	4.7	9.4	3.3	4.0
2006-07	0.4	0.0	4.2	2.1	10.6	3.0	13.2	2.8	2.7
2007-08	3.9	5.0	8.3	5.0	3.2	5.3	6.7	3.7	4.9
2008-09	4.3	1.4	5.9	5.8	3.2	2.5	5.6	5.5	3.7
2009-10	3.7	5.1	1.2	2.4	1.7	4.6	2.9	2.4	3.2
2010-11	2.9	3.1	2.2	1.7	2.5	3.3	3.4	2.6	2.8

(a) Reference base period is 2003-04 = 100.0.

Source: House Price Indexes: Eight Capital Cities (6416.0)

movements over time in each city individually. They do not measure differences in price levels between cities.

Producer price indexes

Producer price indexes measure changes in the prices either received or paid by producers of goods and providers of services. In Australia, they generally relate to prices for products (goods and services) as they affect businesses, for example, the price of goods used as inputs to manufacturing and the price of services provided by the services industries. This contrasts with the CPI, which measures changes in the retail prices paid by consumers, as explained earlier in this chapter. For more information about producer price indexes, see *Producer and International Trade Price Indexes: Concepts, Sources and Methods, 2006* (6429.0).

Stage of production indexes

The Stage of production (SOP) producer price indexes are compiled using the stage of production concept, in which flows of products are categorised according to their economic destination on a sequential basis along the production chain. The basis for the categorisation of products is the 1996–97 Australian Input-Output (I-O) tables (for more information, see chapter 30, *National accounts*). The principal categorisation is between final products (those destined for final consumption, capital formation or export) and products that will be processed further (referred to as ‘non-final’ products).

The initial breakdown of product flows into ‘final’ and ‘non-final’ represents a useful economic dissection of producers’ transactions. However, the non-final products can flow into the production of either final products or other non-final products. Therefore, to aid analysis, the non-final product flows have been divided on a sequential basis between stage 1 (or preliminary) products and stage 2 (or intermediate) products. This approach results in three separate stages of production.

In order to avoid multiple counting of transactions, the three stages are not aggregated.

Under this framework, preliminary (stage 1) products are used in the production of intermediate (stage 2) products which, in turn, flow into the production of final (stage 3) products.

The framework allows for analyses of price change as products flow through production processes. Price changes for earlier stages of production may be indicators of possible future price changes for later stages.

The same product can be assigned to any of the stages of production depending on its destination. For example, bauxite is a preliminary (stage 1) product when it is used to produce alumina that is used in the production of aluminium by an Australian producer. Where the alumina is exported, the bauxite used in its production will be considered an intermediate (stage 2) product. Where the bauxite is exported, it is deemed to be a final (stage 3) product.

Market transactions approach

The ABS has adopted a market transactions approach in disaggregating product supply into the various production stages. Under this approach, the individual transactions in a given product are assigned to the relevant stage, based on identification of the market(s) in which that product is transacted. This is determined by the usage pattern of that product. A particular product within the index classification system can be assigned to more than one stage of production, on the basis of its usage pattern as identified in the I-O tables.

Index coverage

The SOP indexes are compiled on the basis of the *Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 edition*. In concept, the scope of the SOP indexes is economy-wide, relating to the selected output of all the goods and services industries. However, there are limits on the availability of price indexes for service industries, and coverage is currently restricted to the selected output of the Accommodation, Transport (freight) and storage, and Property and business services industries. Similarly, coverage of the Construction industry is confined to indexes for the output of the following industries: House construction, Residential building construction n.e.c., Non-residential building construction, and Road and bridge construction. Coverage of the Stage of production indexes will be extended as additional service and construction industry collections are established. Table 29.15 shows Stage of production producer price indexes.

29.15 STAGE OF PRODUCTION PRODUCER PRICE INDEXES(a), By stage and source

	PRELIMINARY			INTERMEDIATE			FINAL (EXCL. EXPORTS)		
	Domestic	Imports	Total	Domestic	Imports	Total	Domestic	Imports	Total
INDEX NUMBER									
2006–07	137.0	132.4	136.2	133.9	114.5	131.0	134.8	82.5	124.2
2007–08	144.5	141.9	144.0	141.3	117.4	137.8	141.6	78.8	128.7
2008–09	153.8	154.6	153.7	147.9	130.9	145.4	146.3	88.9	134.5
2009–10	148.8	134.6	146.7	144.9	115.9	140.6	147.9	82.0	134.4
2010–11	156.0	140.4	153.7	151.0	117.7	146.1	153.4	79.0	138.2
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)									
2006–07	5.8	2.2	5.3	5.7	1.7	5.1	4.1	-2.4	3.2
2007–08	5.5	7.2	5.7	5.5	2.5	5.2	5.0	-4.5	3.6
2008–09	6.4	8.9	6.7	4.7	11.5	5.5	3.3	12.8	4.5
2009–10	-3.3	-12.9	-4.6	-2.0	-11.5	-3.3	1.1	-7.8	-0.1
2010–11	4.8	4.3	4.8	4.2	1.6	3.9	3.7	-3.7	2.8

(a) Reference base period is 1998–99 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

Manufacturing industries indexes

The Manufacturing output producer price indexes relate to selected products (i.e. articles produced) primary to the Manufacturing industry, while the Manufacturing input producer price indexes relate to materials used by establishments classified to the Manufacturing industry. These indexes are compiled on the basis of the *Australian and New Zealand Standard Industrial Classification (ANZSIC)*, 2006 edition.

Gross sector basis

Prior to the September quarter 2009, the manufacturing indexes were constructed on a net sector basis with intra-sector transactions netted out. The scope of the output indexes was therefore restricted to transactions in products primary to the defined sector of the Australian Manufacturing industry that were sold or transferred to domestic establishments outside that sector, or used as capital equipment, or exported. The scope of the input indexes related to transactions in materials used in defined sectors of the Australian Manufacturing industry that were produced by domestic establishments outside that sector, or imported.

From the September quarter 2009, the manufacturing indexes have been constructed on a gross sector basis. The scope of the output indexes includes transactions in products primary to the defined sector of Australian manufacturing

industries that are sold or transferred to domestic establishments within or outside that sector for further processing, or used as capital equipment, or exported. The indexes relate to all products primary to the Manufacturing industry, excluding commission production products and general government consumption of fixed capital. The scope of the input indexes relates to transactions in materials used by establishments classified to the Manufacturing industry. Materials are defined as products primary to ANZSIC 2006 Divisions A to D (Agriculture, forestry and fishing; Mining; Manufacturing; and Electricity, gas, water and waste services) that are consumed by establishments classified to the Manufacturing industry.

Price indexes of articles produced by manufacturing industries

From the September quarter 2009 onwards, the Manufacturing division output index measures changes in prices of products (articles) that are primary to ANZSIC 2006 Division C Manufacturing, that are sold or transferred to domestic establishments within or outside the Manufacturing division for further processing, intermediate use or used as capital equipment or exported.

The price index of produced articles primary to the Manufacturing industry, as measured by the Manufacturing division output index, rose 7.4% between 2006–07 and 2010–11 (table 29.16).

The output indexes for products primary to Manufacturing industry subdivisions measure transactions within and outside the industry subdivision or group. Prior to the September quarter 2009, these series were constructed on a net sector basis, that is, they excluded intermediate transactions in products primary to the specific manufacturing subdivision or group that were sold or transferred within that subdivision or group for further processing.

29.16 PRICE INDEXES OF ARTICLES PRODUCED, By Manufacturing industries(a)(b)

INDEX NUMBER	
2006-07	156.4
2007-08	164.2
2008-09	168.0
2009-10	162.8
2010-11	168.0
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)	
2006-07	4.7
2007-08	5.0
2008-09	2.3
2009-10	-3.1
2010-11	3.2

(a) Reference base period is 1989-90 = 100.0.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Producer Price Indexes, Australia* (6427.0).

Between 2009-10 and 2010-11, the largest rise in the price of products primary to the Manufacturing division was in Petroleum and coal product manufacturing at 10.5%, while Printing (including the reproduction of recorded media) fell 7.9% (table 29.17).

Price indexes of materials used in manufacturing industries

The Manufacturing division input index (table 29.18), from the September quarter 2009 onwards, measures changes in prices of materials used in ANZSIC 2006 Division C Manufacturing, that have been purchased or transferred in from domestic establishments within or outside the Manufacturing division, or imported. Prior to the September quarter 2009, this index was constructed on a net sector basis.

The price index of materials used in manufacturing, as measured by the Manufacturing division input index, rose 11.7% between 2006-07 and 2010-11, driven mainly by increases in the price of imported materials. In 2010-11, the price of imported materials was 13.6% higher than the price in 2006-07, while the price of domestic materials had risen 8.1% (table 29.18).

The input indexes for materials used in manufacturing measure input purchases or transfers within and outside the subdivision.

29.17 PRICE INDEXES OF ARTICLES PRODUCED, By Manufacturing industries(a)

ANZSIC Subdivision(b)	2006-07 index no.	2009-10 index no.	2010-11 index no.	Change from 2006-07 to 2009-10 to	
				2010-11 %	2010-11 %
Food product manufacturing(c)	108.6	124.0	126.6	16.6	2.1
Beverage and tobacco product manufacturing(c)	116.5	131.3	142.4	22.2	8.5
Textile, leather, clothing and footwear manufacturing(c)	104.5	112.7	113.7	8.8	0.9
Wood product manufacturing	148.2	169.7	173.4	17.0	2.2
Pulp, paper and converted paper product manufacturing	120.2	128.3	130.5	8.6	1.7
Printing (including the reproduction of recorded media)(c)	91.4	90.3	83.2	-9.0	-7.9
Petroleum and coal product manufacturing	295.6	291.7	322.2	9.0	10.5
Basic chemical and chemical product manufacturing	127.6	138.4	139.8	9.6	1.0
Polymer product and rubber product manufacturing	140.6	150.1	152.8	8.7	1.8
Non-metallic mineral product manufacturing	136.7	152.9	156.7	14.6	2.5
Primary metal and metal product manufacturing	189.8	153.6	166.8	-12.1	8.6
Fabricated metal product manufacturing	145.3	168.7	166.9	14.9	-1.1
Transport equipment manufacturing	129.2	130.7	129.7	0.4	-0.8
Machinery and equipment manufacturing	122.7	129.0	127.8	4.2	-0.9
Furniture and other manufacturing	143.4	155.5	157.8	10.0	1.5

(a) Reference base period is 1989-90=100.0 unless otherwise specified.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(c) Reference base period is 2001-02 = 100.0.

Source: *Producer Price Indexes, Australia* (6427.0).

Prior to the September quarter 2009, they were constructed on a net sector basis, that is, they excluded intermediate transactions in materials used in a specific manufacturing subdivision or group that were sold or transferred within that subdivision or group for further processing.

From 2009–10 to 2010–11, the price of materials used in manufacturing, as measured by the Manufacturing division input index, rose 6.7%. Rises occurred for the materials used in the majority of manufacturing industries. The largest increases in price were for Primary metal and

metal product manufacturing (12.6%) and Petroleum and coal product manufacturing (10.7%) (table 29.19).

Construction industries indexes

Price index of the outputs primary to the Building construction Subdivision and selected Construction industry classes

The Construction output producer price indexes measure changes in prices of the outputs primary to selected ANZSIC 2006 classes in Division E

29.18 PRICE INDEXES OF MATERIALS USED IN MANUFACTURING INDUSTRIES(a)(b)

	Domestic	Imported	Total
INDEX NUMBER			
2006–07	183.2	132.0	162.2
2007–08	205.4	133.3	177.1
2008–09	208.3	154.1	187.8
2009–10	185.8	142.9	169.8
2010–11	198.1	150.0	181.2
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)			
2006–07	6.3	3.8	5.0
2007–08	12.1	1.0	9.2
2008–09	1.4	15.6	6.0
2009–10	-10.8	-7.3	-9.6
2010–11	6.6	5.0	6.7

(a) Reference base period is 1989–90 = 100.0.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Producer Price Indexes, Australia (6427.0)*.

29.19 PRICE INDEXES OF MATERIALS USED IN MANUFACTURING INDUSTRIES(a)

ANZSIC Subdivision(b)	2006–07 index no.	2009–10 index no.	2010–11 index no.	Change from 2006–07 to 2009–10 to 2010–11	
				2010–11 %	2010–11 %
Food product manufacturing(c)	109.8	117.5	126.2	14.9	7.4
Beverage and tobacco product manufacturing(c)	87.3	95.3	95.1	8.9	-0.2
Textile, leather, clothing and footwear manufacturing(c)	96.6	95.6	103.5	7.1	8.3
Wood product manufacturing	135.3	148.0	148.4	9.7	0.3
Pulp, paper and converted paper product manufacturing	110.8	109.0	109.8	-0.9	0.7
Printing (including the reproduction of recorded media)(c)	95.2	99.5	98.4	3.4	-1.1
Petroleum and coal product manufacturing	294.7	306.1	339.0	15.0	10.7
Basic chemical and chemical product manufacturing	136.7	140.6	141.7	3.7	0.8
Polymer product and rubber product manufacturing	147.7	142.4	145.5	-1.5	2.2
Non-metallic mineral product manufacturing	142.8	161.9	167.5	17.3	3.5
Primary metal and metal product manufacturing	175.3	213.5	240.3	37.1	12.6
Fabricated metal product manufacturing	156.8	143.6	140.9	-10.1	-1.9
Transport equipment manufacturing	138.5	142.4	140.8	1.7	-1.1
Machinery and equipment manufacturing	138.2	131.0	132.1	-4.4	0.8
Furniture and other manufacturing	149.1	158.0	163.3	9.5	3.4

(a) Reference base period is 1989–90 = 100.0 unless otherwise specified.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(c) Reference base period is 2001–02 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

29.20 PRICE INDEXES OF SELECTED OUTPUTS OF THE CONSTRUCTION INDUSTRY(a)

ANZSIC Subdivision and Class(b)	2006-07	2007-08	2008-09	2009-10	2010-11
	INDEX NUMBER				
Building construction	142.5	150.4	155.0	154.5	158.5
House construction	139.7	146.8	152.3	157.0	161.2
Other residential building construction	144.8	152.3	155.7	150.0	153.2
Non-residential building construction	146.2	155.4	159.0	153.4	157.4
Road and bridge construction	139.9	147.5	157.0	159.1	163.9
	CHANGE FROM PREVIOUS FINANCIAL YEAR (%)				
Building construction	4.2	5.5	3.1	-0.3	2.6
House construction	2.6	5.1	3.7	3.1	2.7
Other residential building construction	4.4	5.2	2.2	-3.7	2.1
Non-residential building construction	5.8	6.3	2.3	-3.5	2.6
Road and bridge construction	5.0	5.4	6.4	1.3	3.0

(a) Reference base period is 1998-99 = 100.0.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

Source: *Producer Price Indexes, Australia (6427.0)*.

Construction. Table 29.20 shows price indexes for outputs primary to Subdivision 30 Building construction, its three classes and the class Road and bridge construction.

Price index of materials used in house building

The Construction input producer price indexes measure changes in prices of materials used in house building (table 29.21). This table relates to the statistical division for each state capital city and the weighted average of the six capital cities. The ANZSIC 2006 Class House construction (3011) approximates the industry scope of the indexes.

Service industries indexes

The currently available Service industry producer price indexes represent the results to date of a program to progressively extend the scope of Producer price indexes into the service industries of the economy. These indexes are important sources of data for the Stage of production indexes. The Service industry indexes measure changes in prices of services primarily defined to selected ANZSIC 2006 industries, excluding general government consumption of fixed capital (table 29.22).

New index series created as part of the implementation of ANZSIC 2006 in the September quarter 2009 have been backcast to the September quarter 2001. These index numbers are calculated on the reference base period 2001-02 = 100.0. Continuing index number

series are calculated on the reference base period 1998-99 = 100.0. Table 29.22 presents price indexes for selected output of services primary to the following ANZSIC 2006 divisions: Transport, postal and warehousing (Division I); Information media and telecommunications (Division J); Rental, hiring and real estate services (Division L); Professional, scientific and technical services (Division M); Administrative and support services (Division N); Public administration and safety (Division O) and Other services (Division S).

International trade price indexes

The International trade price indexes measure the change in prices of goods either as they cross the customs frontier entering Australia (imports) or leave Australia bound for another country (exports).

As the prices used in these indexes are expressed in Australian currency, changes in the relative value of the Australian dollar against overseas currencies (in particular, the major trading currencies) can have a direct and significant impact on the price movements of the many goods that are bought or sold with prices expressed in overseas currencies. Forward exchange rate cover is excluded from the prices used in the indexes.

The prices collected and used in compiling the indexes relate to specified standards, grades, types, etc. of each good with the aim of incorporating in the index the price changes of representative

29.21 PRICE INDEXES OF MATERIALS USED IN HOUSE BUILDING(a)(b)

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six capital cities
INDEX NUMBER							
2006–07	153.3	141.7	145.3	149.9	144.0	156.2	147.0
2007–08	157.1	146.1	151.4	153.9	150.7	163.7	152.1
2008–09	166.0	154.7	160.6	168.8	163.0	175.0	162.0
2009–10	167.8	156.7	161.6	169.1	164.5	179.0	163.6
2010–11	172.2	159.6	165.9	173.2	167.0	183.1	167.1
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)							
2006–07	2.5	3.4	3.2	2.8	5.9	3.4	3.5
2007–08	2.5	3.1	4.2	2.7	4.7	4.8	3.5
2008–09	5.7	5.9	6.1	9.7	8.2	6.9	6.5
2009–10	1.1	1.3	0.6	0.2	0.9	2.3	1.0
2010–11	2.6	1.9	2.7	2.4	1.5	2.3	2.1

(a) Reference base period is 1989–90 = 100.0.

(b) The separate city indexes measure price movement within each city individually. They do not compare price levels between cities.

Source: *Producer Price Indexes, Australia (6427.0)*.

29.22 PRICE INDEXES OF SELECTED OUTPUT OF SERVICE INDUSTRIES(a)

ANZSIC(b)	2006–07		2009–10		2010–11	
	index no.	index no.	index no.	index no.	Change from 2006–07 to 2010–11 %	Change from 2009–10 to 2010–11 %
Transport, postal and warehousing (Division I)						
Road freight transport	126.9	140.4	146.2	152.0	15.2	4.1
Rail freight transport	100.1	120.0	127.0	132.0	26.9	5.8
Water freight transport	110.6	109.4	107.2	102.0	-3.1	-2.0
Pipeline transport	107.7	130.5	136.2	142.0	26.5	4.4
Postal and courier pick-up and delivery services(c)	110.4	117.9	124.2	130.0	12.5	5.3
Water transport support services	107.9	122.0	129.9	135.0	20.4	6.5
Airport operations and other air transport support services	99.8	104.5	105.2	110.0	5.4	0.7
Customs agency services	110.4	115.4	117.1	122.0	6.1	1.5
Warehousing and storage services	118.2	135.6	141.2	147.0	19.5	4.1
Information media and telecommunications (Division J)						
Newspaper, periodical, book and directory publishing(c)	115.1	120.7	122.1	127.0	6.1	1.2
Data processing, web hosting and electronic information storage services(c)	106.4	105.4	107.0	108.0	0.6	1.5
Rental, hiring and real estate services (Division L)						
Rental and hiring services (except real estate)	112.7	118.4	121.4	127.0	7.7	2.5
Non-residential property operators	131.8	143.1	145.1	150.0	10.1	1.4
Real estate services	213.0	252.0	269.9	287.0	26.7	7.1
Professional, scientific and technical services (Division M)						
Scientific research services	129.5	144.5	146.5	152.0	13.1	1.4
Architectural, engineering and technical services(c)	130.8	152.4	154.1	160.0	17.8	1.1
Legal and accounting services	143.2	156.2	160.7	166.0	12.2	2.9
Market research and statistical services(c)	123.5	138.1	143.3	149.0	16.0	3.8
Management advice and related consulting services(c)	110.7	116.8	119.8	125.0	8.2	2.6
Computer system design and related services(c)	112.2	111.5	112.9	118.0	0.6	1.3
Administrative and support services (Division N)						
Employment services(c)	128.4	140.0	145.5	151.0	13.3	3.9
Other administrative services(c)	116.6	127.6	129.1	134.0	10.7	1.2
Building cleaning, pest control and gardening services(c)	115.3	123.7	128.7	134.0	11.6	4.0
Public administration and safety (Division O)						
Investigation and security services	121.8	127.3	130.6	136.0	7.2	2.6
Other Services (Division S)						
Parking services	170.1	225.2	264.6	314.0	55.6	17.5

(a) Reference base period is 1998–99 = 100.0 unless otherwise specified.

(b) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition (1292.0).

(c) Reference base period is 2001–02 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

goods of constant quality. Wherever possible, prices to or from specific major markets are used for each of the goods priced, in order to lessen the impact of price variations attributable solely to changes in market origins or destinations. In most cases, prices are combined using fixed weights between markets. Weights between markets are reviewed periodically and revised where necessary. For more information on the International trade price indexes, see *Producer and International Trade Price Indexes: Concepts, Sources and Methods, 2006* (6429.0).

Import Price Index

The Import Price Index measures changes in the prices of imports of merchandise landed in Australia, based on their 'free-on-board' (FOB) prices in the country of origin. The index numbers for each quarter relate to prices of imports landed in Australia during the period.

The main uses of the index are as deflators for the production of chain volume estimates of imports, as a guide to future inflationary trends for macroeconomic purposes and the indexation of business contracts.

Table 29.23 provides Import price indexes for major commodity groups based on the

United Nations, *Standard International Trade Classification, Revision 4* (SITC Rev.4) and the All groups Import Price Index.

Export Price Index

The Export Price Index measures changes in the prices of all exports of merchandise from Australia, including re-exports (goods which are imported into Australia then exported without alteration). The index numbers for each quarter relate to the prices of exports actually shipped during that quarter.

The main uses of the index are as deflators for the production of chain volume estimates of exports, as a guide to future inflationary trends for macroeconomic purposes and the indexation of business contracts.

In general, prices are obtained from the major exporters of the selected goods included in the index. The prices used in the index are the prices at which the goods physically leave Australia, that is, the prices are FOB at the main Australian ports of export.

Table 29.24 provides Export price indexes for major commodity groups based on the SITC Rev.4, and the All groups Export Price Index.

29.23 IMPORT PRICE INDEXES(a)

Commodity group (SITC Section)(b)	2006-07	2009-10	2010-11	Change from Change from 2006-07 to 2009-10 to	
	index no.	index no.	index no.	2010-11 %	2010-11 %
Food and live animals (0)	123.8	134.2	131.0	5.8	-2.4
Beverages and tobacco (1)	122.3	132.9	128.6	5.2	-3.2
Crude materials, inedible, except fuels (2)	125.6	130.3	140.7	12.0	8.0
Mineral fuels, lubricants and related materials (3)	280.2	297.2	335.7	19.8	13.0
Animal and vegetable oils, fats and waxes (4)	167.0	178.5	184.4	10.4	3.3
Chemicals and related products, n.e.c. (5)	118.8	124.7	123.3	3.8	-1.1
Manufactured goods classified chiefly by material (6)	135.1	136.4	136.5	1.0	0.1
Machinery and transport equipment (7)	92.4	87.2	82.1	-11.1	-5.8
Miscellaneous manufactured articles (8)	109.3	107.6	101.3	-7.3	-5.9
Commodities and transactions, n.e.s. (9)	163.7	253.3	286.3	74.9	13.0
All groups	115.7	117.7	116.8	1.0	-0.8

(a) Reference base period is 1989-90 = 100.0.

(b) Classified according to the United Nations, Standard International Trade Classification, Revision 4 (SITC Rev.4).

Source: *International Trade Price Indexes, Australia* (6457.0).

29.24 EXPORT PRICE INDEXES(a)

Commodity group (SITC Section)(b)	2006-07 index no.	2009-10 index no.	2010-11 index no.	Change from	
				2006-07 to 2010-11 %	2009-10 to 2010-11 %
Food and live animals (0)	117.3	143.2	157.6	34.4	10.1
Beverages and tobacco (1)	119.0	90.2	84.8	-28.7	-6.0
Crude materials, inedible, except fuels (2)	147.3	144.7	201.2	36.6	39.0
Mineral fuels, lubricants and related materials (3)	229.5	305.0	372.0	62.1	22.0
Animal and vegetable oils, fats and waxes (4)	136.8	162.9	204.1	49.2	25.3
Chemicals and related products n.e.c. (5)	125.5	120.0	127.0	1.2	5.8
Manufactured goods classified chiefly by material (6)	187.0	131.9	142.9	-23.6	8.3
Machinery and transport equipment (7)	88.7	87.8	83.0	-6.4	-5.5
Miscellaneous manufactured articles (8)	94.7	87.0	79.9	-15.6	-8.2
Commodities and transactions not classified in the SITC (9)	163.8	244.7	277.3	69.3	13.3
All Groups	146.8	157.6	188.0	28.1	19.3

(a) Reference base period is 1989-90 = 100.0.

(b) Classified according to the United Nations, Standard International Trade Classification, Revision 4 (SITC Rev.4).

Source: *International Trade Price Indexes, Australia (6457.0)*.

International comparisons

When analysing price movements in Australia, an important consideration is Australia's performance relative to other countries. However, due to the many differences in the structure of the housing sector in different countries and in the way that housing is treated in their CPIs, a simple comparison of All groups (or 'headline') CPIs is often inappropriate. In order to provide a better basis for international comparisons, the Seventeenth International Conference of Labour Statisticians (2003)

adopted a resolution which called for countries, where possible, to compile and provide for dissemination to the international community an index that excludes housing and financial services.

Table 29.25 presents indexes for selected countries on a basis consistent with the resolution and broadly comparable to the Australian series All groups CPI excluding housing and insurance and financial services.

29.25 CONSUMER PRICE INDEX, INTERNATIONAL COMPARISONS(a)

	Australia	New Zealand	Hong Kong (SAR of China)	Indonesia	Japan	Korea, Republic of (South)	Singapore	Taiwan	Canada	United States of America	Germany	United Kingdom
INDEX NUMBER(b)												
2006-07	159.8	139.6	164.8	700.2	106.4	215.4	127.8	138.4	143.8	155.6	135.0	157.6
2007-08	163.8	143.2	171.2	763.5	107.3	223.2	134.2	144.4	145.8	161.8	138.7	162.4
2008-09	167.8	147.7	173.1	831.7	107.9	233.0	137.0	146.6	147.6	163.7	140.1	168.6
2009-10	171.1	150.5	175.5	862.2	105.9	238.8	138.6	146.6	149.5	166.0	141.2	175.4
2010-11	175.4	156.5	182.3	920.6	105.9	248.0	144.2	148.4	153.4	170.7	143.3	185.3
CHANGE FROM PREVIOUS FINANCIAL YEAR (%)												
2006-07	3.0	2.1	1.4	8.3	0.3	2.4	0.7	0.1	1.1	1.9	1.5	3.2
2007-08	2.5	2.6	3.9	9.0	0.8	3.6	5.0	4.3	1.4	4.0	2.7	3.0
2008-09	2.4	3.1	1.1	8.9	0.6	4.4	2.1	1.5	1.2	1.2	1.0	3.8
2009-10	2.0	1.9	1.4	3.7	-1.9	2.5	1.2	0.0	1.3	1.4	0.8	4.0
2010-11	2.5	4.0	3.9	6.8	0.0	3.9	4.0	1.2	2.6	2.8	1.5	5.6

(a) All groups excluding housing and insurance and financial services.

(b) Reference base period is 1989-90 = 100.0.

Source: *Consumer Price Index, Australia (6401.0)*.

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NATIONAL ACCOUNTS

National accounts are designed to provide a systematic summary of national economic activity and have been developed to assist in the practical application of economic theory.

The Australian system of national accounts includes national income, expenditure and product accounts; financial accounts; the national balance sheet; input-output tables; and satellite accounts. At their summary level, the national accounts reflect key economic flows – production, the distribution of incomes across sectors, consumption, saving and investment. At their more detailed level, they are designed to present a statistical picture of the structure of the economy and the detailed processes that make up domestic production and its distribution.

The financial accounts show the financial assets and liabilities of the nation and of each institutional sector and inter-sectoral financial transactions. The balance sheet is a comprehensive statement of produced and non-produced assets, liabilities to the rest of the world and net worth. Satellite accounts allow the development of an integrated set of statistics about a particular sector that crosses a number of industries or sectors. Input-output tables show the structure of a country's production system for a particular period. They show which goods and services are produced by each industry and how they are used.

The national accounts also include many detailed classifications (e.g. by industry, by purpose, by commodity, by state and territory, and by asset type) relating to major economic aggregates.

This chapter contains a special article, *Which is the best short-term measure of gross domestic product?*

The information presented in this chapter is on the same conceptual basis as the information presented in chapter 31 *International accounts and trade*. However, estimates in the two chapters differ as they are based on information compiled at different points in time.

Other related information can be found in chapters 15 *Industry structure and performance* and 27 *Financial system*.

Defining and measuring GDP

Australia's national accounts are compiled in accordance with international statistical standards contained in the 2008 System of National Accounts. Australia's application of these standards is described in *Australian System of National Accounts: Concepts, Sources and Methods* (5216.0).

The main output from the national accounts is a measure of the overall value of economic production in Australia in a given period, but without any double counting of the goods and services being produced. Many goods and services are bought by businesses for use in their own productive activities (e.g. steel is bought by car manufacturers). If the value of all goods and services produced were simply added together, there would be serious duplication because some goods and services would be added in several times at various stages of production. The overall measure of production, excluding double counting, is called 'gross domestic product', which is commonly referred to as GDP. It is defined in the Australian System of National Accounts as:

The total market value of goods and services produced in Australia after deducting the cost of goods and services used up (intermediate consumption) in the process of production, but before deducting allowances for the consumption of fixed capital (depreciation).

The performance of the Australian economy is represented in the national accounts by such measures as growth in GDP. While movements in the volume measure of GDP (from which the direct effects of price changes have been removed) are an important indicator of economic growth, there is no single measure that can describe all aspects of the wellbeing of Australians. *Measures of Australia's Progress: Summary Indicators 2011* (1370.0.55.001) looks beyond GDP and provides a set of indicators relating to aspects of Australian life across the economy, the environment and society. Within these broad areas, dimensions of progress encompass national income, wealth and productivity, the quality of the environment, the wellbeing of the population in terms of health, education, work, housing and economic resources, and the way people live together in society.

The national accounts provide important information for a range of purposes. The System of National Accounts also provides a framework or structure that can be, and has been, adapted

and extended to facilitate the examination of many economic, environmental and social policy issues.

There are three ways of measuring GDP.

- Income approach – Measures income generated by the economy: compensation of employees (wages and salaries, and employers' social contributions), gross operating surplus (profits), gross mixed income (income from unincorporated businesses) and taxes less subsidies.
- Expenditure approach – Measures final expenditures on goods and services (i.e. those goods and services that are not processed any further), adding on the contributions of changes in inventories and the value of exports, and deducting the value of imports.
- Production approach – Calculates the sum of the value of goods and services produced by each industry and deducts the cost of goods and services used up by the industry in the production process (i.e. intermediate consumption). This leaves the 'value added' by the industry, to which is added taxes less subsidies on products if output is valued at basic prices. For more information on the distinction between taxes and subsidies on products and taxes and subsidies on production, see *Australian System of National Accounts: Concepts, Sources and Methods* (5216.0).

While each approach should, conceptually, deliver the same estimate of GDP, if the three measures are compiled independently using different data sources, then different estimates of GDP result. However, the Australian national income, expenditure and product estimates have been integrated within annual balanced supply and use tables that are produced for 1994–95 to 2009–10. Integration with balanced supply and use tables ensures that the GDP estimates obtained from the three approaches are balanced, and thus annual estimates using the income, expenditure and production approaches are identical for the years for which supply and use tables are produced.

Prior to 1994–95, and for the latest financial year, the estimates using each approach are based on independent sources, and there are differences between the income, expenditure and production estimates. Nevertheless, for these periods, a single estimate of GDP has been compiled by averaging the three independent measures.

30.1 REAL GDP AND GDP PER PERSON



Source: Australian System of National Accounts (5204.0)

The volume measure (see *Volume or 'real' GDP* below) of GDP increased by 2.1% in 2010–11, following an increase of 2.3% in 2009–10. For some analytical purposes, it is important to allow for the impact of population growth on movements in GDP. Annual growth in real GDP per person has been about one to two percentage points lower than that for GDP volumes since the mid 1970s and was negative in 1971–72, 1974–75, 1977–78, 1982–83, 1990–91, 1991–92 and 2008–09 (graph 30.1). In 2010–11, real GDP per person increased by 0.6%.

Volume or 'real' GDP

The reason for having volume estimates in the national accounts is to provide time series of expenditure and production aggregates that are free of the direct effects of price change. All the current price aggregates of expenditure and production appearing in the national accounts are estimates of the sums of the values of individual transactions. Each of these transactions has two components – a price and a quantity. From one period to another, the quantities and prices comprising the transactions change. This means that when the current price value of an aggregate, such as GDP, in one period is compared with the current price value in another period, the difference between them usually reflects both changes in quantity and changes in price of the constituent transactions. In order to estimate by how much the 'volume' of GDP has changed between the two periods we need to measure the value of GDP in each period using the same unit prices.

For many years, the Australian Bureau of Statistics (ABS) derived constant price estimates as a means of measuring changes in the volumes of aggregates. Constant price estimates are derived by fixing the unit prices of goods and services to those of some base year. These base year unit prices are effectively the weights used to combine the quantities of the different goods and services purchased or produced. The unit prices of different goods and services tend to grow at different rates – some at dramatically different rates. For example, the prices of computer and other electronic equipment are estimated to have declined by about 88% between September 1989 and September 2011, while the prices of most other goods and services have increased. Therefore, over time, the price relativities of some goods and services change appreciably. This adversely affects the usefulness of constant price estimates for periods distant from the base year, and implies that the base year used to derive constant price estimates needs to be changed from time to time. It was ABS practice prior to 1998, in common with many other national statistical agencies, to change the base year every five years. However, it has been found that rebasing every five years is insufficient, and hence the international standards now recommend rebasing every year and linking the resulting indexes to form annually reweighted chain volume measures. These recommendations were first introduced by the ABS into the September quarter 1988 issue of the *Australian National Accounts: National Income, Expenditure and Product* (5206.0).

Volume estimates formed through annual reweighting are not generally additive. In other words, component volume estimates do not usually sum to a total in the way original current price components do. In order to minimise the impact of this characteristic, the ABS uses the latest base year as the reference year (i.e. the year when the annual volume estimate equals the current price value). Re-referencing changes the level of the volume estimates, but does not of itself change the growth rates. By adopting this approach, non-additivity does not apply to the reference year or the following year.

Chain price indexes and implicit price deflators

A by-product of the calculation of volume measures is the implicit price deflator (IPD). An IPD is the price index obtained when a current price estimate is divided by the corresponding volume measure. The ABS publishes a time series of IPDs for each of the expenditure components of GDP (excluding the changes in inventories).

Chain price indexes are also published for the major expenditure aggregates. They are the prices equivalent of chain volume estimates. Quarterly chain price indexes are generally superior to IPDs

for measuring price change, because the quarter-to-quarter growth rates calculated from the IPDs reflect changes in composition of the expenditure aggregate as well as pure price change. For example, it is possible for an IPD to increase or decrease from one quarter to another because of compositional changes without there being any change in price. Changes in chain price indexes, on the other hand, only reflect pure price change.

National income, expenditure and product accounts

The Australian national income, expenditure and product accounts are compiled and published each quarter, in *Australian National Accounts: National Income, Expenditure and Product* (5206.0), and in greater detail once a year, in *Australian System of National Accounts* (5204.0).

Production account

The production account indicates changes in Australian economic activity over time. Table 30.2 shows annual time series from 2006–07 to 2010–11. Table 30.3 shows expenditure on GDP in volume terms.

30.2 PRODUCTION ACCOUNT, Current prices

	2006–07	2007–08	2008–09	2009–10	2010–11
	\$m	\$m	\$m	\$m	\$m
Final consumption expenditure					
General government	186 689	201 494	220 597	233 697	248 997
Households	606 353	657 717	676 214	712 181	756 144
Total final consumption expenditure	793 042	859 211	896 811	945 878	1 005 141
Gross fixed capital formation					
Private	247 653	277 561	283 974	276 406	288 752
Public	51 444	58 797	67 137	79 627	82 668
Total gross fixed capital formation	299 097	336 358	351 111	356 033	371 420
Changes in inventories	2 830	4 733	-3 058	-3 913	5 465
Gross national expenditure	1 094 973	1 200 302	1 244 864	1 298 000	1 382 026
Exports of goods and services	216 795	233 813	284 571	253 762	297 507
less Imports of goods and services	228 702	258 166	277 218	258 383	276 631
Statistical discrepancy(a)	0	0	0	0	-1 733
Gross domestic product	1 083 060	1 175 949	1 252 218	1 293 380	1 401 168
Compensation of employees	527 398	574 581	596 098	618 137	665 951
Gross operating surplus	348 195	383 846	435 943	443 829	486 180
Gross mixed income	92 182	94 527	100 966	103 549	109 944
Total factor income	967 775	1 052 954	1 133 007	1 165 515	1 262 075
Taxes less subsidies on production and imports	115 285	122 995	119 211	127 865	134 699
Statistical discrepancy(b)	0	0	0	0	4 395
Gross domestic product	1 083 060	1 175 949	1 252 218	1 293 380	1 401 168

(a) Expenditure-based.

(b) Income-based.

Source: *Australian System of National Accounts, 2010–11* (5204.0).

30.3 EXPENDITURE ON GDP, Volume measures(a)

	2006-07	2007-08	2008-09	2009-10	2010-11
	\$m	\$m	\$m	\$m	\$m
Final consumption expenditure					
General government	216 468	223 364	229 583	233 697	239 545
Households	663 002	694 206	694 585	712 181	736 733
Total final consumption expenditure	879 529	917 775	924 152	945 878	976 278
Gross fixed capital formation					
Private	258 278	284 015	284 483	276 406	287 793
Public	55 532	59 935	64 237	79 627	82 691
Total gross fixed capital formation	313 194	343 308	348 082	356 035	370 484
Domestic final demand	1 191 986	1 261 010	1 272 240	1 301 913	1 346 763
Changes in inventories	3 533	6 121	-2 455	-3 913	5 333
Gross national expenditure	1 192 011	1 263 952	1 267 681	1 298 000	1 352 096
Exports of goods and services	228 442	236 965	241 050	253 762	254 710
less Imports of goods and services	220 778	252 934	244 612	258 383	285 191
Statistical discrepancy(b)	0	0	0	0	-1 558
Gross domestic product	1 201 563	1 246 899	1 263 934	1 293 380	1 320 057

(a) Reference year is 2009-10.

(b) Expenditure-based.

Source: Australian System of National Accounts, 2010-11 (5204.0).

In 2010-11, in volume terms (i.e. after the effects of price change are removed from the dollar value of Australia's production), GDP recorded a growth rate of 2.1%.

The production account can also be used to show changes in the share of income accruing to labour (i.e. compensation of employees) compared with the share accruing to capital (i.e. profits, defined as the gross operating surplus of non-financial and financial corporations). Graphs 30.4 and 30.5 show how the shares of total factor income accruing to compensation of employees and to profits have changed since 1965-66. (Total factor

income is equal to the sum of compensation of employees, gross operating surplus and gross mixed income.)

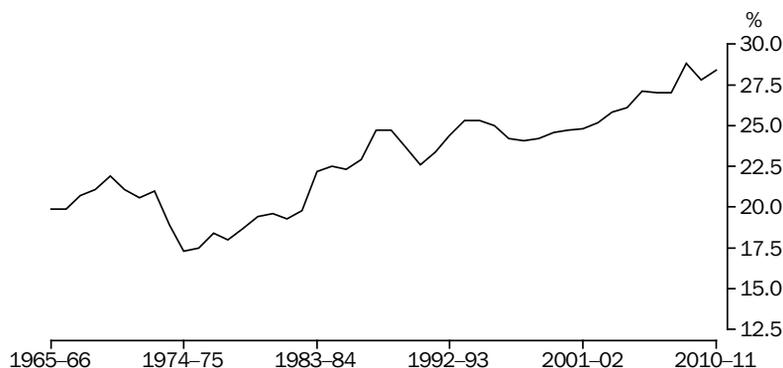
The highest recorded value of the compensation of employees (COE) share of total factor income was 62% in 1974-75. The COE share in 2010-11 was 53%, steady with the previous year (53%), and one of the lowest levels recorded in the time series presented. The profits share of total factor income has been growing steadily since 1998-99. In 2010-11, the profits share was 28%, the second highest share recorded; the highest was in 2008-09 (29%).

30.4 COMPENSATION OF EMPLOYEES SHARE OF TOTAL FACTOR INCOME



Source: Australian System of National Accounts (5204.0).

30.5 PROFITS SHARE OF TOTAL FACTOR INCOME



Source: Australian System of National Accounts (5204.0).

National income account

The national income account shows the sources of national income and how much of this income is spent on final consumption. That part of income that is not spent in this way is 'saving'. Table 30.6 shows annual time series in current prices from 2006–07 to 2010–11.

Graph 30.7 shows net saving by institutional sector as a proportion of GDP for the years 1965–66 to 2010–11. Household net saving as a percentage of GDP generally fluctuated between 8.6% and 11% between 1965–66 and 1971–72.

It then rose to a peak of 13% in 1974–75. The series then generally decreased, eventually reaching its lowest point at 0.3% of GDP in 2002–03. Household net saving as a proportion of GDP remained below 1% until 2005–06, before rising again. By 2010–11, it was 5.4% of GDP and household income exceeded consumption by \$76.9 billion (table 30.8).

General government net saving as a proportion of GDP was positive from 1965–66 to 1973–74 before turning negative from 1974–75 to 1996–97 (except for 1988–89). It remained positive from 1997–98 to 2007–08. In 2010–11,

30.6 NATIONAL INCOME ACCOUNT, Current prices

	2006–07	2007–08	2008–09	2009–10	2010–11
	\$m	\$m	\$m	\$m	\$m
INCOME					
Compensation of employees	527 398	574 581	596 098	618 137	665 951
Gross operating surplus	348 195	383 846	435 943	443 829	486 180
Gross mixed income	92 182	94 527	100 966	103 549	109 944
Taxes less subsidies on production and imports	115 285	122 995	119 211	127 865	134 699
Net primary income from non-residents	-48 398	-49 986	-46 078	-47 816	-52 437
Gross national income	1 034 662	1 125 963	1 206 140	1 245 564	1 344 337
Net secondary income from non-residents	-305	100	-1 365	-1 956	-2 011
Gross disposable income	1 034 357	1 126 063	1 204 775	1 243 608	1 342 326
USE OF GROSS DISPOSABLE INCOME					
Final consumption expenditure					
General government	186 689	201 494	220 597	233 697	248 997
Households	606 353	657 717	676 214	712 181	756 144
Total final consumption expenditure	793 042	859 211	896 811	945 878	1 005 141
Net saving(a)	70 625	82 728	109 475	90 688	119 890
Consumption of fixed capital	170 690	184 124	198 489	207 042	217 294
Total use of gross disposable income	1 034 357	1 126 063	1 204 775	1 243 608	1 342 326

(a) Net saving is derived as a balancing item.

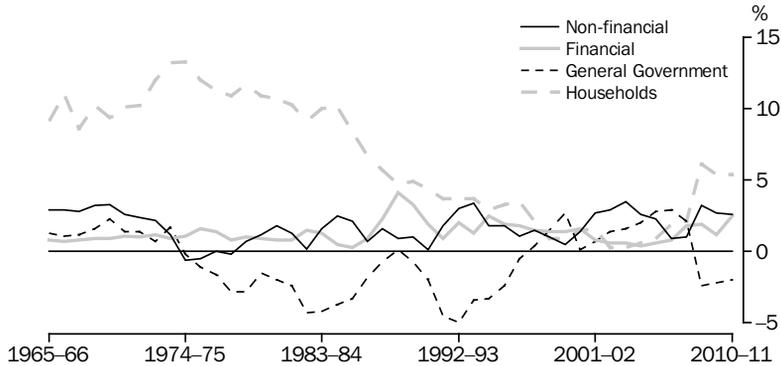
Source: Australian System of National Accounts, 2010–11 (5204.0).

general government net saving was negative at $-\$27.8$ billion, while net saving of non-financial corporations was 2.6% of GDP ($\$36.3$ b). Net saving of financial corporations has been positive at between 1% and 3% of GDP for virtually all of its history except for 1988–89 and 1989–90, where it rose above 3%. In 2010–11, net saving of financial corporations was 2.5% of GDP ($\$35.1$ b).

National capital account

The national capital account shows how the saving from the national income account and consumption of fixed capital (depreciation) are used to finance gross fixed capital formation. Between 2006–07 and 2010–11, Australia's saving and consumption of fixed capital were not sufficient to pay for all the fixed capital needed

30.7 NET SAVING, Relative to GDP



Source: Australian System of National Accounts (5204.0).

30.8 NATIONAL CAPITAL ACCOUNT, Current prices

	2006–07	2007–08	2008–09	2009–10	2010–11
	\$m	\$m	\$m	\$m	\$m
Net saving					
Non-financial corporations	10 138	11 911	40 097	34 401	36 267
Financial corporations	8 886	21 246	23 258	15 155	35 114
General government	31 428	25 017	-30 421	-28 618	-27 788
Households	20 170	24 556	76 539	69 748	76 924
<i>Total national net saving</i>	<i>70 625</i>	<i>82 728</i>	<i>109 475</i>	<i>90 688</i>	<i>119 890</i>
Consumption of fixed capital	170 690	184 124	198 489	207 042	217 294
Net capital transfers receivable from non-residents	142	231	367	287	287
Gross saving and capital transfers	241 173	266 621	307 597	297 443	336 898
Gross fixed capital formation					
Private	247 653	277 561	283 974	276 406	288 752
Public corporations	18 986	21 290	23 104	25 484	24 623
General government	32 458	37 507	44 033	54 143	58 045
<i>Total gross fixed capital formation</i>	<i>299 097</i>	<i>336 358</i>	<i>351 111</i>	<i>356 033</i>	<i>371 420</i>
Changes in inventories					
Private non-farm	2 477	4 981	-2 242	-5 532	2 657
Farm and public authorities	353	-248	-816	1 619	2 808
<i>Total changes in inventories</i>	<i>2 830</i>	<i>4 733</i>	<i>-3 058</i>	<i>-3 913</i>	<i>5 465</i>
Acquisitions less disposals of non-produced non-financial assets	-423	1	244	4	17
Statistical discrepancy(a)	0	0	0	0	-6 128
Net lending to non-residents	-60 329	-74 471	-40 701	-54 684	-33 876
Total capital accumulation and net lending	241 173	266 621	307 597	297 443	336 898

(a) Expenditure-based discrepancy less income-based discrepancy.

Source: Australian System of National Accounts, 2010–11 (5204.0).

for Australian production; therefore, the shortfall must be borrowed from overseas. The amount borrowed from overseas is shown in the national capital account as a negative entry for net lending to non-residents. Table 30.8 shows the annual time series from 2006–07 to 2010–11 in current prices.

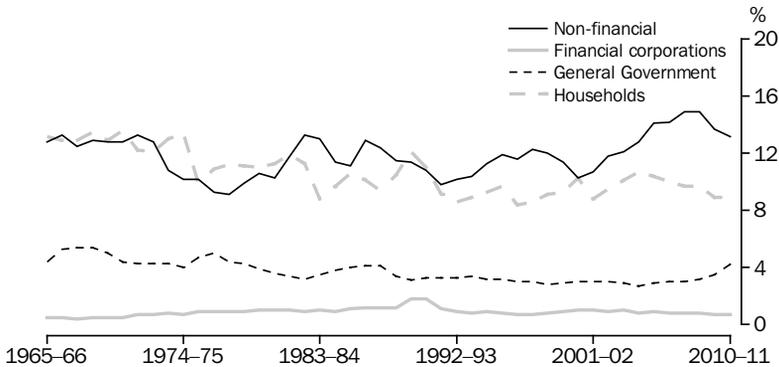
Graph 30.9 shows gross fixed capital formation (investment) by institutional sector as a proportion of GDP. Investment by non-financial corporations generally fell during the mid 1970s but stabilised in the 1980s and 1990s (it has generally been above 10% of GDP). In 2010–11, investment by non-financial corporations was 13% of GDP. Household investment as a proportion of GDP remained steady at around 10% of GDP throughout the time series and in 2010–11, the ratio to GDP was 8.9%. General government

investment as a proportion of GDP peaked at 5.4% in 1967–68 and 1968–69, and has generally fallen since then. It was 4.2% of GDP in 2010–11. The highest ever level of financial corporations investment, expressed as a proportion of GDP, was recorded in 1989–90 and 1990–91 (1.8%). It has generally fallen since and was 0.7% of GDP in 2010–11.

Graph 30.10 shows net lending by institutional sector as a proportion of GDP. A positive percentage for a sector indicates that it is a net lender to other sectors; a negative percentage indicates that it is a net borrower.

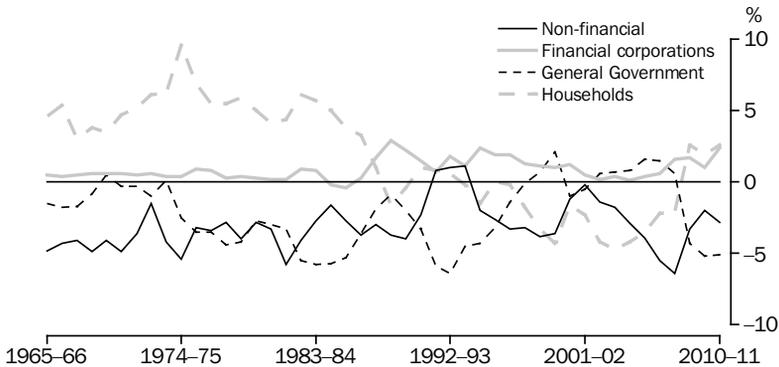
The household sector has been a net lender for most years since 1965–66. As a proportion of GDP, net lending by households peaked in 1974–75 at 9.6%. Since then it has trended downwards and

30.9 INVESTMENT, Relative to GDP



Source: Australian System of National Accounts (5204.0).

30.10 NET LENDING, Relative to GDP



Source: Australian System of National Accounts (5204.0).

the household sector changed from a net lender to a net borrower in 1988–89 and 1989–90. Between 1993–94 and 2007–08, it was a net borrower and in 2010–11 household net lending was 2.6%. Non-financial corporations have been net borrowers over the period 1965–66 to 2010–11 (except for between 1991–92 and 1993–94), and the amounts borrowed have fluctuated significantly from year to year. As a proportion of GDP, their net borrowing was 2.8% in 2010–11.

In 2010–11, net lending of financial corporations represented 2.4% of GDP, with the highest recorded level 2.9% in 1988–89. After a record level of borrowing as a proportion of GDP in 1992–93 (6.4%), general government borrowing steadily declined up until 2000–01. From 2002–03 to 2007–08, the sector was a net lender. Since 2008–09, general government has been a net borrower and in 2010–11, its net borrowing represented 5.1% of GDP.

External account

The external account is derived from the detailed balance of payments current and capital accounts (see chapter 31, *International accounts and trade*). It shows Australia's exports and imports, incomes and transfers received by Australian residents from non-residents, and incomes and transfers payable to non-residents by Australian residents. The balance on the external account is net lending to non-residents. This is the same as the balance in the national capital account. Table 30.11 shows the annual time series in current prices from 2006–07 to 2010–11.

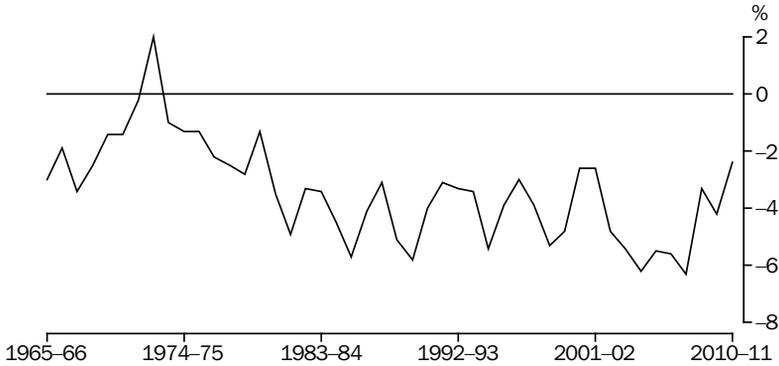
Australia has generally been a net borrower of funds from overseas. In the national accounts, this situation is reflected by a negative value for net lending to non-residents (graph 30.12). The only exception to this pattern was in 1972–73. Net borrowing from non-residents, expressed as a proportion of GDP, increased significantly in the

30.11 EXTERNAL ACCOUNT, Current prices

	2006–07	2007–08	2008–09	2009–10	2010–11
	\$m	\$m	\$m	\$m	\$m
INCOME ACCOUNT					
Income of non-residents					
Imports of goods and services	228 702	258 166	277 218	258 383	276 631
Primary income receivable					
Compensation of employees	2 794	2 882	3 217	3 239	3 344
Property income receivable	82 531	90 874	85 361	81 389	90 992
Total primary income receivable	85 325	93 756	88 578	84 628	94 336
Secondary income receivable	6 304	6 148	7 571	8 319	8 383
Total income of non-residents	320 331	358 070	373 367	351 330	379 350
Uses of income of non-residents					
Exports of goods and services	216 795	233 813	284 571	253 762	297 507
Primary income payable					
Compensation of employees	1 564	1 682	1 717	1 704	1 794
Property income payable	35 363	42 088	40 783	35 108	40 105
Total primary income payable	36 927	43 770	42 500	36 812	41 899
Secondary income payable	5 999	6 248	6 206	6 363	6 372
Balance on external income account	60 610	74 239	40 090	54 393	33 572
Total use of income of non-residents	320 331	358 070	373 367	351 330	379 350
CAPITAL ACCOUNT					
Balance on external income account	60 610	74 239	40 090	54 393	33 572
Capital transfers receivable	142	231	367	287	287
less Capital transfers payable					
Total net capital transfers	142	231	367	287	287
Gross saving and capital transfers	60 752	74 470	40 457	54 680	33 859
Acquisitions less disposals of non-produced non-financial assets	423	-1	-244	-4	-17
Net lending (+) / net borrowing (-)	60 329	74 471	40 701	54 684	33 876
Total capital accumulation and net lending (+) / net borrowing (-)	60 752	74 470	40 457	54 680	33 859

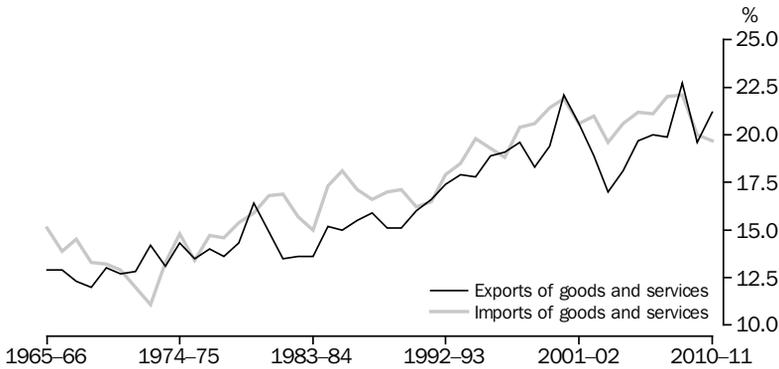
Source: Australian System of National Accounts, 2010–11 (5204.0).

30.12 NET LENDING TO OVERSEAS, Relative to GDP



Source: Australian System of National Accounts (5204.0).

30.13 EXPORTS AND IMPORTS, Relative to GDP



Source: Australian System of National Accounts (5204.0).

early 1980s and has remained at relatively high levels since then. The ratio of net borrowing from overseas to GDP in 2010–11 was 2.4%, down from 4.2% in 2009–10. Graph 30.12 shows net lending to non-residents as a proportion of GDP since 1965–66.

The growing importance of international trade to the Australian economy is illustrated by graph 30.13, which shows the ratios of exports and imports of goods and services to GDP in current prices since 1965–66. In 2010–11, the imports ratio was 20% and the exports ratio was 21%. Since 2000–01, the volume of imports has grown more strongly, up 120%, compared with 24% growth in the volume of exports.

State accounts

As well as Australia's national accounts, the ABS produces annual accounts for each of Australia's states and territories. These provide estimates of state final demand and gross state product (GSP). GSP is the average of the volume estimate of the production approach, GSP(P), and the income/expenditure approach, GSP(I/E). State final demand is equal to the sum of government and household final consumption expenditure and public and private gross fixed capital formation.

An important use of state accounts is to compare the performance of each state and territory (table 30.14). The volume measure of GSP in 2010–11 increased in all states. Western Australia experienced the strongest growth (up

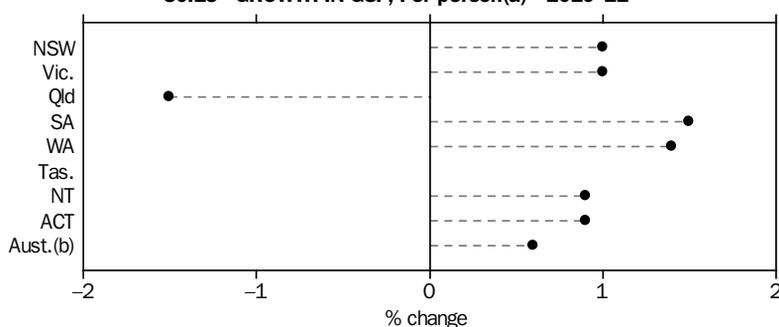
30.14 GROSS STATE PRODUCT, Chain volume measures—2010–11

	Annual growth	Average annual compound growth rate (1999–2000 to 2010–11)
New South Wales	2.2	2.0
Victoria	2.5	3.1
Queensland	0.2	4.2
South Australia	2.4	2.7
Western Australia	3.5	4.6
Tasmania	0.8	2.5
Northern Territory	1.6	3.6
Australian Capital Territory	2.8	3.0
Australia(a)	2.1	3.1

(a) GDP.

Source: Australian National Accounts: State Accounts (5220.0).

30.15 GROWTH IN GSP, Per person(a)—2010–11



(a) Volume measures.

(b) Gross domestic product.

Source: Australian National Accounts: State Accounts (5220.0).

3.5%), while growth in the remaining states and territories varied between 0.2% for Queensland and 2.8% for the Australian Capital Territory.

For some analytical purposes, it is important to allow for the impact of population growth on movements in GSP. All states and territories except Queensland and Tasmania had positive growth in GSP per capita in 2010–11 because GSP growth rates exceeded their population growth rates. Queensland showed a decline in GSP per capita (down 1.5%) and Tasmania remained flat, compared with the Australian increase of 0.6%. South Australia (up 1.5%) and Western Australia (up 1.4%) showed the largest gains in GSP per capita (graph 30.15).

National balance sheet

The national balance sheet provides estimates of the value of Australia's produced, non-produced and financial assets, its liabilities to the rest of

the world, and the net worth (defined as the difference between total assets and liabilities, including the value of equity in Australian enterprises owned by non-residents) of the total economy. The main national and sectoral balance sheet tables are published in *Australian System of National Accounts* (5204.0). Balance sheets are provided for each of the four domestic sectors: non-financial corporations, financial corporations, general government and households (including unincorporated enterprises and non-profit institutions serving households).

Non-produced assets included in the balance sheet cover experimental estimates of the value of some of Australia's natural resources: subsoil assets, timber available for log production and land. The monetary estimates of natural resources contained in the balance sheet are underpinned by physical estimates of particular natural resources. Further, since valuation of natural resources is a difficult and contentious

30.16 NATIONAL BALANCE SHEET, Current prices—30 June

	2006-07	2007-08	2008-09	2009-10	2010-11
	\$b	\$b	\$b	\$b	\$b
Total assets	8 116.4	8 701.7	9 071.7	10 001.7	10 124.1
Non-financial assets	7 066.6	7 619.2	7 983.0	8 804.1	8 871.0
Produced assets	3 562.3	3 853.5	4 057.3	4 237.2	4 448.9
Fixed assets	3 416.0	3 693.5	3 897.7	4 080.0	4 281.3
Dwellings	1 253.6	1 346.4	1 418.8	1 489.2	1 567.1
Ownership transfer costs	184.7	182.7	180.1	200.1	201.7
Non-dwelling construction	1 343.9	1 466.7	1 545.6	1 616.2	1 727.1
Machinery and equipment	455.1	500.8	542.9	553.5	552.3
Weapons systems	20.5	22.3	24.4	24.4	24.2
Cultivated biological resources(a)	25.2	26.3	26.1	26.5	26.5
Intellectual property products	133.0	148.3	159.7	170.0	182.5
Research and development	58.4	66.8	73.3	78.5	83.5
Mineral and petroleum exploration	35.6	40.4	44.0	47.8	53.6
Computer software	36.9	38.7	39.7	40.7	41.6
Artistic originals	2.1	2.4	2.7	3.0	3.7
Inventories	146.3	160.0	159.6	157.2	167.5
Private non-farm	121.6	134.1	134.8	130.5	138.1
Farm	7.8	8.5	8.6	9.9	12.7
Public authorities	3.9	3.0	2.0	2.3	2.4
Livestock	4.6	4.6	4.9	5.0	4.7
Plantation standing timber(b)	8.4	9.9	9.3	9.4	9.6
Non-produced assets(b)	3 504.3	3 765.7	3 925.7	4 566.9	4 422.2
Natural resources	3 501.2	3 762.7	3 923.0	4 564.5	4 420.1
Land	3 156.2	3 367.6	3 297.2	3 963.7	3 785.0
Subsoil assets	335.8	385.5	615.8	590.5	624.3
Native standing timber	2.1	2.1	1.9	1.7	1.7
Spectrum	7.1	7.6	8.2	8.6	9.1
Permission to use natural resources	3.1	2.9	2.7	2.4	2.1
Spectrum licences	3.1	2.9	2.7	2.4	2.1
Financial assets with the rest of the world	1 049.8	1 082.6	1 088.7	1 197.6	1 253.1
Monetary gold and SDRs	2.2	2.7	3.2	9.1	8.2
Currency and deposits	69.3	54.5	89.0	94.5	103.0
Securities other than shares	182.6	232.6	250.5	263.0	252.6
Loans and placements	117.3	111.9	145.4	147.7	149.8
Shares and other equity	587.3	579.6	510.6	577.3	628.5
Insurance technical reserves	15.9	13.6	7.6	6.0	6.9
Other accounts receivable	75.3	87.7	82.4	100.0	104.0
Liabilities to the rest of the world	1 663.0	1 741.1	1 792.4	1 974.5	2 034.2
Monetary gold and SDRs	0.8	0.8	0.9	5.3	4.6
Currency and deposits	76.2	87.3	111.9	111.2	125.1
Securities other than shares	727.1	778.1	815.0	928.7	909.6
Loans and placements	182.8	210.3	247.4	230.1	229.1
Shares and other equity	660.7	637.7	590.0	669.8	734.6
Insurance technical reserves	1.9	2.0	1.7	1.8	2.2
Other accounts payable	13.5	24.9	25.5	27.5	29.0
Net worth	6 453.4	6 960.6	7 279.3	8 027.2	8 089.9
Memorandum items					
Consumer durables	241.8	251.6	256.7	262.5	269.4
Direct investment					
Foreign investment in Australia	400.7	439.2	445.2	490.1	510.2
Australian investment abroad	374.3	371.5	354.7	377.5	387.3

(a) Cultivated biological resources – fixed assets included in the balance sheet include all animals and not just sheep and cattle as shown in the capital stock tables.

(b) Experimental estimates.

Source: Australian System of National Accounts, 2010–11 (5204.0).

undertaking, the monetary estimates of these natural resources should be considered in conjunction with the physical estimates. The natural resource estimates are used to monitor the availability and exploitation of these resources and to assist in the formulation of environmental policies. More information on valuing land and environment assets can be found in chapter 2 *Environment*.

More generally, data on the level, composition and change in assets and liabilities shown in the balance sheet indicate the extent of economic resources available to, and claims on, a nation and each of its institutional sectors.

Sectoral balance sheets provide information necessary for analysing a number of topics; for example, the estimation of household liquidity; and the computation of widely-used ratios, such as assets to liabilities, net worth to total liabilities, non-financial to financial assets, and debt to income. In a period of concern about the level of saving in Australia, national and sector balance sheets provide additional information on the relationships between consumption, saving and wealth accumulation.

Current price balance sheet estimates

Australia's net worth at the end of June 2011 was estimated to be \$8,089.9 billion in current prices, an increase of 0.8% since 30 June 2010 (table 30.16). Graph 30.17 shows that net worth (in current prices) exhibited strong growth in the past, especially in the years from 2001–02, during which annual rates of up to 14% have been achieved. As at 30 June 2011, the net worth reached its lowest growth since 1992, with an increase of 0.8%.

Total produced assets at 30 June 2011 were estimated at \$4,448.9 billion, an increase of 5% from the level at the end of June 2010. The estimated value of produced assets rose at an average annual rate of 7% between 30 June 2001 and 30 June 2011. At 30 June 2011, dwellings, non-dwelling construction, and machinery and equipment represented 86% of total produced assets.

The difference between Australia's assets and liabilities with the rest of the world represents the international investment position. Australia's liabilities stood at \$2,034.2 billion at 30 June 2011,

a rise of 3% on the position at the end of June 2010. Liabilities as a proportion of net worth have increased steadily from 14% at 30 June 1989 to a peak of 26% at 30 June 2007. At 30 June 2011, the proportion was 25%.

Real/volume balance sheets

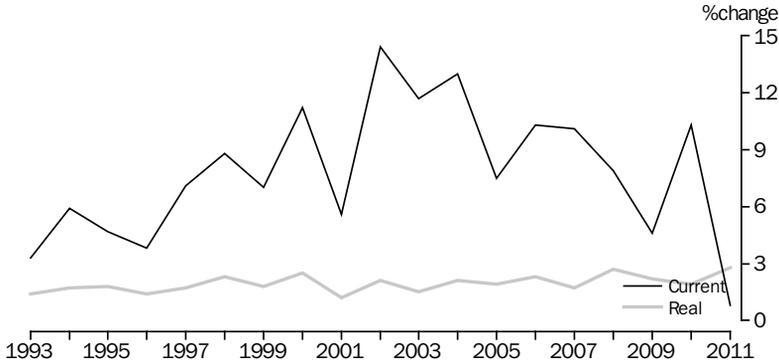
An article introducing experimental real/volume balance sheets for Australia was published in the March quarter 2001 issue of *Australian National Accounts: National Income, Expenditure and Product* (5206.0). The real/volume balance sheet is designed to remove the effect of price changes, in much the same way as for other real and volume estimates, and allow for comparisons of changes in the value of Australia's assets and liabilities over time, free of the direct effects of changes in prices.

Volume estimates for the major categories of fixed asset stocks described as 'produced assets' – such as dwellings, non-dwelling construction, and machinery and equipment – have been available for many years in the Australian national accounts. Volume estimates for stocks of non-produced, non-financial assets (land and other natural resources, etc.) and real estimates of financial assets, liabilities and net worth (wealth) are also available. The calculation of volume and real estimates for some of these components is subject to some practical and conceptual difficulties, and therefore the term 'experimental' has been attached to these initial estimates.

The values of non-financial assets, such as dwellings, can be decomposed into prices and volumes. Volume indexes, which measure the volume change of an aggregate between one period and another, can thus be derived by holding prices the same in the two periods.

Financial assets and liabilities cannot be decomposed into prices and volumes, and so it is impossible to derive volume indexes for them. The same is true of gross operating surplus and other income flows, and is the reason why volume estimates of GDP cannot be derived by aggregating volume indexes of its income components. However, it is possible to deflate income flows, financial assets and liabilities by a price index, such as the implicit price deflator for gross national expenditure, in order to measure changes in the purchasing power of the aggregate in question. Such measures are called 'real' estimates.

30.17 CHANGE IN TOTAL NET WORTH—30 June



Source: Australian System of National Accounts, 2010–11 (5204.0).

Real net worth has been derived by aggregating the volume estimates of the non-financial assets with the real estimates of financial assets less liabilities.

Real/volume balance sheet estimates

Australia's real net worth (total assets less total liabilities to the rest of the world) increased by 2.8% over the year ended 30 June 2011 compared to the end of June 2010. In 2010–11, the real value of non-financial assets grew by 2.3%, the real value of financial assets grew by 0.8% and the real value of liabilities fell by 0.8% (table 30.18).

Additional national account measures

In addition to the core set of Australian national accounts statistics, the ABS compiles and publishes more detailed and specialised products which enable a better understanding of particular economic entities or processes. This section briefly outlines the following outputs: financial accounts, input-output tables, satellite accounts and productivity measures.

Financial accounts

The ABS produces quarterly and annual information on the levels of financial assets and liabilities of each institutional sector of the economy, the market for financial instruments, and inter-sectoral transactions in financial assets and liabilities classified by financial instrument.

The financial accounts provide an insight into the borrowing and lending activities of each sector within the economy. The financial accounts also provide information on the composition of financial instruments issued by the various sectors during a particular period. National and sectoral financial accounts, which show major financial aggregates, are published annually in *Australian System of National Accounts* (5204.0). For more information see chapter 27 *Financial system* and the publication *Australian National Accounts: Financial Accounts* (5232.0).

Input-output tables

Input-output (I-O) tables are an integral part of the Australian System of National Accounts. They present a comprehensive view of the supply and use of products in the economy and the incomes generated from production. The tables are based on the relationship in which the value of the output of each industry is expressed as the sum of the values of all the inputs to that industry. These inputs include the compensation of employees, gross operating surplus and gross mixed income, taxes on production paid less any subsidies received and the use of the outputs of other industries (e.g. the output of steel from the steel industry may be used as an input by the motor vehicle industry as part of the process of producing cars).

I-O tables provide a comprehensive level of detail, presenting information on 112 industry and product groups. As a result, they show a much more detailed disaggregation of the production account than is available in *Australian System of*

30.18 NATIONAL BALANCE SHEET, Volume/Real—30 June

	2006–07	2007–08	2008–09	2009–10	2010–11
	\$b	\$b	\$b	\$b	\$b
Total assets	9 304.1	9 540.7	9 742.8	10 031.1	10 242.1
Non-financial assets	8 210.8	8 443.3	8 654.2	8 861.8	9 064.0
Produced assets	3 734.2	3 898.2	4 045.2	4 190.9	4 350.5
Fixed assets	3 577.8	3 735.4	3 886.6	4 035.9	4 189.5
Dwellings	1 356.1	1 394.1	1 430.5	1 468.7	1 506.6
Ownership transfer costs	190.3	191.3	189.2	188.9	185.9
Non-dwelling construction	1 398.7	1 459.4	1 528.8	1 600.2	1 677.3
Machinery and equipment	460.9	504.6	539.2	565.3	591.6
Weapons systems	19.0	20.6	22.5	25.7	29.7
Cultivated biological resources(a)	17.5	17.4	17.5	17.7	18.0
Intellectual property products	135.5	148.0	158.9	169.5	180.4
Research and development	62.5	68.8	73.6	78.1	82.2
Mineral and petroleum exploration	37.5	40.6	43.9	46.8	49.8
Computer software	33.3	36.1	38.6	41.6	44.8
Artistic originals	2.2	2.5	2.7	3.0	3.6
Inventories	156.3	162.8	158.6	154.9	161.0
Private non-farm	130.8	135.6	133.5	128.1	130.8
Farm	7.8	8.5	8.6	9.9	12.7
Public authorities	3.3	2.8	1.9	2.7	3.9
Livestock	5.0	5.0	5.0	5.1	4.8
Plantation standing timber(b)	9.5	11.0	9.6	9.1	8.7
Non-produced assets(b)	4 476.6	4 545.0	4 609.0	4 671.0	4 713.5
Natural resources	4 473.3	4 542.0	4 606.3	4 668.6	4 711.5
Land	3 956.6	3 998.1	4 037.9	4 078.1	4 108.2
Subsoil assets	506.9	533.9	558.3	580.3	592.7
Native standing timber	2.1	2.0	1.9	1.7	1.8
Spectrum	7.7	8.0	8.2	8.5	8.8
Permission to use natural resources	3.4	3.0	2.7	2.3	2.0
Spectrum licences	3.4	3.0	2.7	2.3	2.0
Financial assets with the rest of the world	1 093.3	1 097.4	1 088.6	1 169.2	1 178.1
Monetary gold and SDRs	2.3	2.7	3.2	8.9	7.7
Currency and deposits	72.2	55.3	89.0	92.3	96.8
Securities other than shares	190.1	235.8	250.5	256.7	237.5
Loans and placements	122.2	113.5	145.4	144.2	140.8
Shares and other equity	611.6	587.5	510.5	563.6	590.9
Insurance technical reserves	16.5	13.8	7.6	5.8	6.5
Other accounts receivable	78.4	88.9	82.4	97.6	97.8
Liabilities to the rest of the world	1 731.9	1 765.1	1 792.2	1 927.6	1 912.5
Monetary gold and SDRs	0.9	0.8	0.9	5.2	4.3
Currency and deposits	79.3	88.5	111.9	108.5	117.6
Securities other than shares	757.2	788.8	814.9	906.7	855.2
Loans and placements	190.4	213.2	247.4	224.6	215.4
Shares and other equity	688.1	646.4	589.9	653.9	690.7
Insurance technical reserves	1.9	2.0	1.7	1.8	2.1
Other accounts payable	14.1	25.3	25.5	26.9	27.3
Net worth	7 572.2	7 775.7	7 950.6	8 103.4	8 329.6

(a) Cultivated biological resources – fixed assets included in the balance sheet include all animals and not just sheep and cattle as shown in the capital stock tables.

(b) Experimental estimates.

Source: *Australian System of National Accounts, 2010–11 (5204.0)*.

National Accounts (5204.0). I-O tables show the flows of products (goods and services) through the production process.

The tables are essentially an accounting record of the flows in the economy in a reference year. Analytically, the I-O tables show total resources in terms of domestic output and imports, and the uses of goods and services in terms of intermediate consumption, final consumption, gross fixed capital formation and exports. They are mostly used to investigate the likely effects on the rest of the economy from observed or postulated disturbances to part of it. Such examples include the effects of an increase or decrease in the demand for a product, the substitution of imports for local production and an increase in wages.

A major use of the I-O tables has been to support the modelling of the impacts of proposed schemes to reduce Australia's greenhouse gas emissions.

Supply-use (S-U) tables are also compiled as a part of the Australian System of National Accounts. In essence, they are simpler constructs of an I-O table and are an integral part of the compilation of I-O tables. They are also used to derive aggregates in *Australian System of National Accounts* (5204.0) and are compiled every year for three adjacent reference periods. The I-O approach to compiling GDP estimates allows for the quarterly current price GDP figures to be benchmarked to balanced S-U tables. At the time the I-O tables are compiled, the measures of current price annual GDP and its components are consistent between S-U tables, I-O tables and the production account. The most recent set of I-O tables available are for 2007–08. For more information, see *Australian National Accounts: Input-Output tables – Electronic Publication* (5209.0.55.001).

Satellite accounts

The concept of a satellite account was introduced in the 1993 System of National Accounts to expand the core national accounts for selected areas of interest, while using relevant concepts and structures from the core national accounts. Satellite accounts allow the development of an integrated set of statistics about a particular activity that crosses a number of industries or sectors.

Tourism satellite account (TSA)

The TSA is produced annually and measures the contribution of tourism to the Australian economy. The emphasis in the TSA is on the measurement of tourism consumption and the size of the tourism industry, including its contribution to GDP. Within the TSA, a number of key economic measures associated with tourism are able to be identified. These include tourism gross value added, tourism GDP, the tourism share of the value added of major tourism related industries, total household and business tourism consumption by type of products, consumption by overseas visitors and employment generated by tourism. Together, these data form an integrated set of statistics on tourism within the framework of international standards. For more information, refer to chapter 23 *Tourism* and the publication, *Tourism Satellite Account* (5249.0).

Information and communication technology satellite account (ICTSA)

The ICTSA was produced in respect of 2002–03 and measured the contribution of information and communication technology (ICT) to the Australian economy in 2002–03, in particular, the contribution of ICT to key macroeconomic variables such as GDP. It provided details on Australian production of various ICT products, as well as related imports, exports, household consumption, business spending and investment. Together, these data form an integrated set of statistics on ICT within the framework of international standards. For more information, refer to the publication, *Information and Communication Technology Satellite Account* (5259.0).

Non-profit institutions (NPIs) satellite account (NPISA)

NPIs play an important role in the provision of welfare, social and other services in Australia. The NPISA was produced in respect of 2006–07 and provided information on the economic impact of NPIs. The NPISA presented estimates of the direct contribution that NPIs made to the Australian economy and, in particular, the contribution of NPIs to key macroeconomic variables such as GDP. As this satellite account is an integrated set of statistics on NPIs within the internationally recognised 1993 System of National Accounts, it provides a valuable policy and research tool with a wide range of applications. For more

information, refer to the publication, *Australian National Accounts: Non-Profit Institutions Satellite Account* (5256.0).

Productivity estimates

Measures of productivity growth are important in understanding long-term improvements in Australia's living standards and changes in Australia's international competitiveness. At the most basic level, productivity growth occurs when the volume of output rises faster than the volume of inputs. A limited selection of productivity estimates are published as part of *Australian National Accounts: National Income, Expenditure and Product* (5206.0) with a more detailed range of statistics and analysis of productivity estimates published in *Australian System of National Accounts* (5204.0). For more information, see *Industry productivity* in chapter 15 *Industry structure and performance*.

International comparisons

Compared with many developed economies, Australia experienced relatively strong growth in the period 2000 to 2010. With an average annual growth rate of 3.0% for GDP volumes over the period, it is higher than all of the 'G7' countries and the OECD total (table 30.19).

30.19 GDP VOLUMES, International comparison—2000 to 2010

	Average annual growth rate(a)
	%
Australia	3.0
G7 countries	
Canada	2.2
France	1.4
Germany	1.2
Italy	0.7
Japan	0.9
United Kingdom	2.0
United States of America	1.8
New Zealand	2.6
OECD Total	1.9

(a) Average of GDP growth rate over the period of 2000 to 2010.

Source: *Annual National Accounts OECD.StatExtracts* (extracted 18 March 2012).

Which is the best short-term measure of gross domestic product?

This article discusses the decision to make GDP(A) Australia's official estimate of GDP in volume terms. The ABS currently publishes four measures of GDP (in chain volume terms) in the Australian National Accounts. These are the:

- expenditure-based estimate, GDP(E)
- income-based estimate, GDP(I)
- production-based estimate GDP(P) and
- average of the above three measures, GDP(A), which is referred to simply as GDP.

The publication of GDP(A) followed research indicating that it was, on balance, the most satisfactory indicator of short-term growth (Aspden, 1990). Quarterly estimates of GDP(A) were first published in the June quarter 1990 issue of *Australian National Accounts: Gross Product, Employment and Hours Worked* (5222.0). Prior to GDP(A) becoming the headline volume measure in December quarter 1991, GDP(I) was the official measure of GDP and a statistical discrepancy between GDP(I) and GDP(E) was shown on the expenditure side. GDP(I) remained the official measure for current price GDP until the implementation of the 1993 System of National Accounts in the September quarter 1998. Following the final issue of 5222.0 in the September quarter 1992, GDP(A) remained the official measure as published in *Australian National Accounts: National Income, Expenditure and Product* (5206.0).

Why the GDP measures differ

In principle, the three measures of GDP should give the same result, but in practice they differ due to limitations of data sources. These limitations include sampling error, reporting error, incomplete coverage in the numerous individual data sources, and variations in the timing of recording of transactions.

Differences between the three alternative measures of GDP are an inevitable consequence of the derivation of measures from combinations of independent data

sources. Improvements in the quality of data sources and the use of data confrontation may reduce the magnitude of differences between the series, but such statistical discrepancies can never be eliminated entirely. In Australia's case, a statistical discrepancy was first identified in the national accounts with the compilation of quarterly estimates of GDP(E) and GDP(I) in the 1960s. With the publication of quarterly estimates of GDP(P) for the first time in 1988, it became possible to calculate differences between all three measures and to publish GDP(A).

As seen in graph S30.1, the quarterly movements in the three measures of GDP do not exhibit a uniform pattern in relation to each other across time. The discrepancies in all three measures are offsetting at various times, meaning that there is no single component of GDP that is responsible for the statistical discrepancy.

Overseas practices

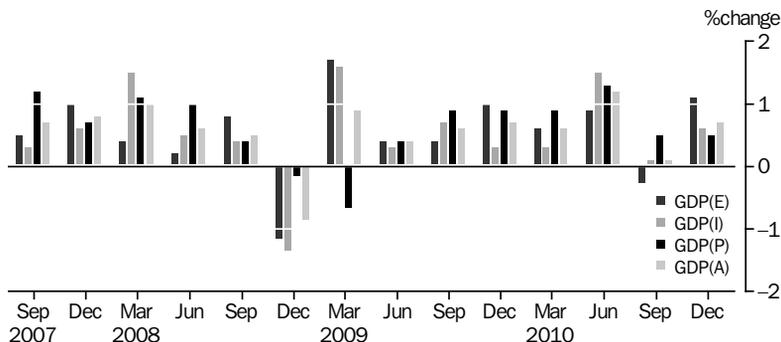
Australia is one of only a few OECD member countries for which independent quarterly measures of GDP(E) and GDP(I) are produced, and is one of only three countries that publish these and an independent estimate of GDP(P) (the other two being Canada and the United Kingdom). The United States of America produces two independent measures, GDP(E) and GDP(I), while New Zealand produces independent estimates of GDP(E) and GDP(P).

Analysing the GDP measures

The short-term fluctuations in a seasonally adjusted time series are commonly referred to as its irregular component. The irregular components of the GDP measures can be considered to have two parts: measurement error and an actual irregular. To give the clearest possible picture of what is really happening in the economy, it is desirable to minimise measurement error.

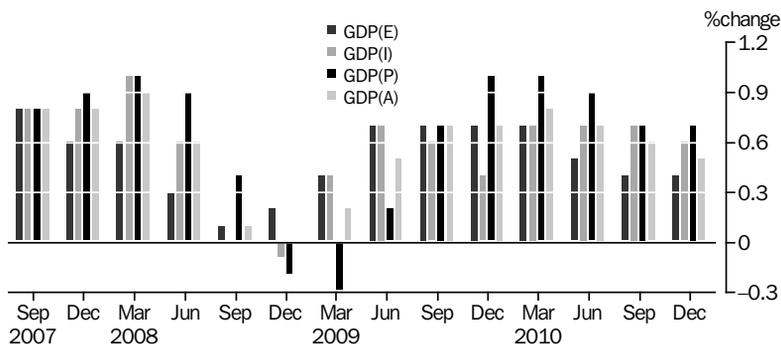
A way of filtering out the measurement error is to apply a moving average to seasonally

S30.1 PERCENTAGE CHANGES IN GDP CHAIN VOLUMES, Seasonally adjusted



Source: Australian National Accounts: National Income, Expenditure and Product, Dec 2010 (5206.0).

S30.2 PERCENTAGE CHANGES IN GDP CHAIN VOLUMES, Trend



Source: Australian National Accounts: National Income, Expenditure and Product, Dec 2010 (5206.0).

adjusted estimates to obtain a trend estimate (graph S30.2). However, the moving averages used to derive trend estimates cannot distinguish between measurement error and actual irregulars, and both types of movement are smoothed out. For example, the downturn resulting from the global financial crisis, where the main impact on GDP occurred in the December quarter 2008, is spread over a number of neighbouring quarters in the trend estimates of GDP. Another problem that leads to revisions occurs at the end of a trend series. Trend estimates are updated as more observations become available for the moving average. This is because weights of the observations at the end of series change as more observations are added.

Another way of obtaining a smoother measure of GDP is to average the three seasonally adjusted chain volume measures of GDP to obtain GDP(A). Positive and negative measurement errors in each of the independent measures of GDP are cancelled out to some extent in GDP(A). If each independent measure of GDP had the same degree of measurement error and the measurement errors were uncorrelated with each other, then the variance of the measurement error of the average would be a third of that of each individual measure. Unlike a trend estimate, only the measurement error is smoothed out in GDP(A). Also, unlike trend estimates, GDP(A) is subject to revision only when the seasonally adjusted estimates of

the independent GDP measures are revised. Thus, there is a *prima facie* case for considering whether GDP(A) is a useful additional measure of GDP.

Quality assessment and results

There are three principal criteria available to assess the short-term movements of the seasonally adjusted estimates of the three measures of GDP and their average. These are timeliness, accuracy and reliability. They are defined as follows:

- *timeliness* is measured by the length of time between the end of the reference period and the time of publication
- *accuracy* is determined by the proximity of an estimate to a notional true value and
- *reliability* is determined by the proximity of successive estimates for a particular period to the 'final' estimate for that period, where the 'final' estimate is not necessarily an accurate estimate.

Timeliness

There is often a trade-off between timeliness versus accuracy and detail. All four measures of GDP are released approximately two months after the reference period for Australia. Around half of the 34 OECD countries release their national accounts with a similar lag to Australia. The International Monetary Fund (IMF) Special Data Dissemination Standard (SDDS) requires that countries release data for GDP and major expenditure aggregates/or by productive sectors no later than 90 days after the reference quarter.

Accuracy

The accuracy of the GDP estimates cannot be assessed definitively since the true value of GDP is unknown. However, two quantitative comparisons of accuracy are available. The first is to determine which measures of GDP are least variable in terms of quarter-to-quarter movements and the second is to determine which measure of GDP is a leading indicator in economic growth and recession cycles.

Variability

A comparison of the variability of quarter-to-quarter movements is a useful quantitative comparison since low variability indicates less erratic data. If one measure of GDP is less variable than another, it does not always mean that it is better. The lower variability could have been achieved due to source data limitations, where some components may have been imputed using relatively smooth indicators. Nevertheless, with all else being equal, a smooth measure of GDP implies that it is subject to less measurement error than a more erratic measure. Table S30.3 presents results of a variability test that show the average of quarterly movements without regard to sign from September quarter 1974 to December quarter 2010.

In line with the results obtained by Aspden (1990), table S30.3 shows that GDP(A) is the smoothest measure of GDP. It has the lowest average variation in the seasonally adjusted series and equal lowest variation in the trend series. GDP(A) also has the lowest value of variation in the irregular component, being slightly ahead of GDP(P). This indicates that GDP(A) and GDP(P) quarter-to-quarter movements remain better indicators of

S30.3 MEASURES OF VARIABILITY, September quarter 1974 to December quarter 2010(a)

	<i>Average absolute percentage movement in seasonally adjusted estimate</i>	<i>Average absolute percentage change in trend(b)</i>	<i>Irregular as a proportion of previous period trend</i>
GDP(E)	1.10	0.86	0.41
GDP(I)	1.06	0.86	0.39
GDP(P)	1.01	0.89	0.28
GDP(A)	1.00	0.86	0.27

(a) Includes average percentages without regard to sign.

(b) Trend is calculated using a 7-term Henderson moving average.

Source: Australian National Accounts: National Income, Expenditure and Product, Dec 2010 (5206.0).

underlying trend than are the movements in GDP(I) and GDP(E). Aspden (1990) also examined the distribution of the magnitude of quarterly movements without regard to sign as they were in the March quarter 1990.

The earlier analysis discussed why GDP(P) should be less variable than either GDP(I) or GDP(E). The main factor noted was related to timing issues. Timing issues arise when transactions occurring in a particular quarter are inadvertently allocated to a neighbouring quarter. Timing problems are likely to be more acute for GDP(I) and GDP(E) than for GDP(P).

Timing discrepancies can occur in the compilation of GDP(E) through lags in tracing transactions through the economy. On the arrival of an imported good into Australia, it will be debited to imports and credited to wholesale stocks. Then, when it is sold to a retailer, it will be debited to wholesale stocks and credited to retail stocks. When it is sold to the final purchaser, it will be debited to retail stocks and credited to one of the expenditure aggregates (either final consumption expenditure or gross fixed capital formation). For each transaction, the credit and debit entries should have the same value and be recorded in the same quarter, otherwise a measurement error will occur. The good itself makes no contribution to GDP, but the chain of services provided in delivering it to its final purchaser does.

Similar potential timing problems occur with the compilation of GDP(P) as it is defined to be gross output less intermediate input. Timing inconsistencies in recording output and intermediate input would lead to measurement error in value added. However, the method of double deflation – deriving volume estimates of value added for an industry by subtracting a volume estimate of intermediate input from a volume estimate of gross output – is used only to derive quarterly volume estimates of gross farm value added. For all the other industries, quarterly volume estimates are derived by extrapolating value added estimates by a volume indicator. It is assumed that the gross value added grows at the same rate as the volume measure of output (gross output method), but changes in the ratio of value added to output can cause a discrepancy. Apart

from agriculture, the potential short-term timing issues are avoided, although it can be argued that the use of extrapolative methods in non-farm production can be inferior when examining longer-term movements.

The original article noted that GDP(I) had an advantage over GDP(E) as an indicator of recent short-term movements since it was less reliant on the ABS business register. There is a continuous flow of business births, deaths and re-organisations and there are inevitable lags between these events and their notification to the ABS to enable the register to be updated. While, as a proportion of GDP, the effect of this may be small, it can be significant in terms of GDP growth, particularly when the economy is in an expansion phase. However, more recent estimates of GDP(I) are more heavily dependent on the business register. Private sector compensation of employees, gross operating surplus and gross mixed income, which comprise more than 70% of GDP(I), now use indicators derived from the Quarterly Business Indicator Survey (QBIS). This survey is based on the business register, while the proportion of GDP(E) using the business register remains at about 40%. This relates mainly to estimates of capital formation and the retail component of household final consumption. The continuing advantage of GDP(I) over GDP(E) could lie in improvements to the updating of the business register since 1990.

Sampling and non-sampling errors can occur within the source data used to compile the various measures of GDP. Sampling error exists because a sample and not the entire population is being observed, while non-sampling errors relate to other issues such as question framing and accuracy of reporting by respondents.

Aspden (1990) noted that the quality of the volume indicators for a number of service industries in gross value added and GDP(P) were weak. Hours worked was used as a proxy for output for some service industries. Recently there has been much greater use made of output measures from QBIS for estimating volume estimates for service industries. This has potentially improved the quality of the GDP(P) volume measure.

S30.4 GROWTH CYCLE TURNING POINTS

		LEADS(+) AND LAGS(-) IN QUARTERS COMPARED TO GDP(A)		
		GDP(E)	GDP(I)	GDP(P)
GDP(A) turning points				
Peak	Jun 1989	-	-	-
Trough	Mar 1991	-1	-	-
Peak	Dec 1999	-	-	-
Trough	Sep 2000	-	-	-
Peak	Mar 2007	-	-	1
Trough	Dec 2008	-	-	-1

Source: Australian National Accounts: National Income, Expenditure and Product, Dec 2010 (5206.0).

Leads and lags

A variable is said to lead another if it consistently changes before the other variable. Leading indicators provide information that may help predict the turning points of GDP at either the commencement or the end of a business cycle. Similarly, a lag indicator would consistently show changes in its cycle after other indicators have changed.

Aspden (1990) used two methods to examine the possibility of leads and lags:

- phase shift analysis of the GDP(E), GDP(I) and GDP(P) seasonally adjusted time series and
- growth cycle turning point analysis of movements in seasonally adjusted GDP(E), GDP(I) and GDP(P) compared with GDP(A).

In phase shift analysis, the attributes of component waves were correlated across the three independent measures of GDP in terms of their duration of wavelength, height of amplitude and their timing or phase. The results indicated that the attributes of the three independent measures coincided and there was no significant difference in most

cycles from September quarter 1974 to June quarter 1990.

From the phase shift and growth cycle turning point comparisons, it was found that the three independent measures of GDP are correlated most of the time. However, GDP(P) showed less irregular movement in the growth cycle than the other measures as also indicated by the tests of variability.

Turning point analysis on three recent economic cycles is presented in table S30.4. The results show that GDP(P) led GDP(A) by one quarter in the cycle peak of March quarter 2007, but GDP(A) led GDP(E) and GDP(P) by one quarter at the troughs in March quarter 1991 and December quarter 2008, respectively.

Reliability

A desirable property of a statistical measure is reliability, that is, a low susceptibility to revision. However, the desire for reliability needs to be qualified by the need for accuracy as well. The ABS policy has been to revise published estimates as better source data become available. However, there have been some changes to revisions policy since the introduction of supply and use tables.

S30.5 GDP, INITIAL ESTIMATES VERSUS ESTIMATES THREE YEARS LATER

	MEAN REVISION (% POINTS)				MEAN ABSOLUTE REVISION (% POINTS)				Number of sign changes
	Full: Jun 1988 to Dec 2002	Period 1: Jun 1988 to Dec 1992	Period 2: Mar 1993 to Dec 1997	Period 3: Mar 1998 to Dec 2002	Full: Jun 1988 to Dec 2002	Period 1: Jun 1988 to Dec 1992	Period 2: Mar 1993 to Dec 1997	Period 3: Mar 1998 to Dec 2002	
GDP(E)	0.09	0.05	0.10	0.10	0.60	0.89	0.44	0.50	8
GDP(I)	0.07	0.10	0.10	0.03	0.51	0.44	0.45	0.64	6
GDP(P)	0.16	0.26	0.13	0.10	0.44	0.55	0.40	0.37	6
GDP(A)	0.10	0.14	0.10	0.05	0.37	0.45	0.35	0.31	3

Source: Australian National Accounts: National Income, Expenditure and Product, Dec 2010 (5206.0).

Aspden (1990) focused on the revision characteristics of GDP(E), GDP(I) and an average of these two measures. GDP(P) and GDP(A) could not be included in this analysis because of the short time that the GDP(P) series had been available. The mean revision and mean absolute revision of quarterly percentage movements from initial to latest observations were examined for each series. The results showed that GDP(E) had both a greater mean revision and mean absolute revision than GDP(I). This was attributed to the greater reliance of GDP(E) on the business register.

An updated revisions analysis was published in *Information Paper: Quality Dimensions of the Australian National Accounts, 2007* (5216.0.55.002). This utilised quarterly data from March quarter 1988 to June quarter 2002. Table S30.5 shows mean revision and mean absolute revision for the percentage movement from initial release to three years later for all three measures of GDP and their average. The results for the mean revision support the original findings, with GDP(I) being slightly better than GDP(E). However, a notable result was that GDP(A) had the lowest mean absolute revision of all measures.

The information paper compared the correlation of the three independent measures against GDP(A) over the 75 quarters. GDP(P) was found to be the most highly correlated measure against GDP(A) with a coefficient of 0.87, while GDP(E) and GDP(I) had coefficients of 0.77 and 0.78, respectively. The GDP(E), GDP(I) and GDP(P) measures moved in the same direction in 80% of quarters. In 75% of

quarters, the disparity in growth rates between the strongest and weakest components was greater than 0.5 percentage points and in 90% of quarters, it was greater than 0.3 percentage points. If only the two most consistent components at each point in time are taken into account, the coherence improves as only 30% of quarters had a difference greater than 0.3 percentage points.

Conclusion

On the basis of variability, GDP(A) is the best performing measure. GDP(A) is marginally less irregular than GDP(P) and is appreciably less irregular than GDP(I) or GDP(E). GDP(A) encompasses all the data measures, which appear to display partially offsetting measurement errors at various times. GDP(P) is less subject to timing problems than either GDP(E) or GDP(I).

A comparison of growth-cycle turning points and phase-shift analysis reveals that there is little difference between the different measures of GDP, as growth cycles coincide in most cases and no one measure of GDP consistently leads the others.

In examining mean revisions, GDP(I) is slightly more reliable than the other measures. However, GDP(A) is superior in terms of the mean absolute revision.

The available data indicate that GDP(A) is the better indicator of short-term movements, given its low variability and high reliability. This analysis supports the use of GDP(A) as the official measure of GDP.

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INTERNATIONAL ACCOUNTS AND TRADE

This chapter presents statistics on Australia's international accounts, covering exports and imports of goods and services, international investment transactions, and levels of Australia's foreign financial assets and liabilities.

These statistics are used by economic analysts and policy advisers to monitor, evaluate and forecast developments in Australia's external trade and external sector accounts. They are used by governments, businesses, industry associations and researchers, among others, to analyse patterns of trade and assess particular types of transactions and financial claims and liabilities between Australian residents and non-residents.

The information presented in this chapter is on the same conceptual basis as the information presented in chapter 30, *National accounts*. However, estimates in the two chapters differ as they are based on information compiled at different points in time.

This chapter contains a special article, *Finance and insurance foreign affiliates*.

More detailed information on trade in particular commodities can be found in chapters 16 *Agriculture*, 17 *Forestry and fishing*, 18 *Mining*, 19 *Energy* and 20 *Manufacturing*.

Overview of the international accounts

International accounts cover the closely related and integrated balance of payments and international investment position statistics.

Diagram 31.1 presents the broad structure and relationship of these statistics.

Australia's balance of payments provides a statistical statement that systematically summarises the economic transactions between residents of Australia and non-residents (residents of other countries). Residents may be people, businesses or other organisations who have a centre of economic interest in Australia. Economic transactions cover the provision (changes in ownership) of goods, the provision of services, income, financial claims on and liabilities to the rest of the world, and transfers without anything provided in exchange (such as gifts).

Australia's international investment position is a balance sheet of the stock of foreign financial assets and liabilities of Australian residents. International investment statistics integrate the balance sheet positions at two points in time. They show increases and decreases in the levels of assets and liabilities as a result of transactions (investment flows, including reinvestment of earnings), together with changes that affect either the value of the stock (price, exchange rate) or the volume of the stock (other adjustments) of financial assets and liabilities.

Australia's national and international accounts are compiled in accordance with the conceptual framework described in the 2008 System of National Accounts. The statistical standards for the international accounts are elaborated in the International Monetary Fund's *Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6)*. The concepts of residency, transactions, valuation and time of recording are common to the national accounts, balance of payments and international investment position statistics.

Australia's international accounts statistics presented in this chapter cover both the balance of payments and the international investment position. The balance of payments accounts systematically present the economic transactions between Australia and the rest of the world, and incorporate four types of economic transactions.

The first involves the provision of real resources, that is, transactions in goods, services and primary income. The second involves the provision of financial resources, that is, financial assets and liabilities. The third covers those one-sided transactions of a current nature (described as secondary income or current transfers) that are offsets to transactions in current real or financial resources undertaken without an exchange. Current transfers are not associated with, nor do they finance, fixed assets. For example, famine relief, whether in cash or in kind, has its offset in current transfers. The fourth type is capital transfers that offset transactions undertaken, without exchange, in fixed assets or in their financing. For example, debt forgiveness and the provision of foreign aid funds to build roads are classified as capital transfers.

The first and third of these types of transactions make up the current account, while the second type makes up the financial account. The fourth type (capital transfers), together with a minor item for the acquisition and disposal of non-produced, non-financial assets (such as patents), make up the capital account.

The double-entry accounting system is used for recording balance of payments transactions. Under the conventions of the system, the compiling economy records credit entries for:

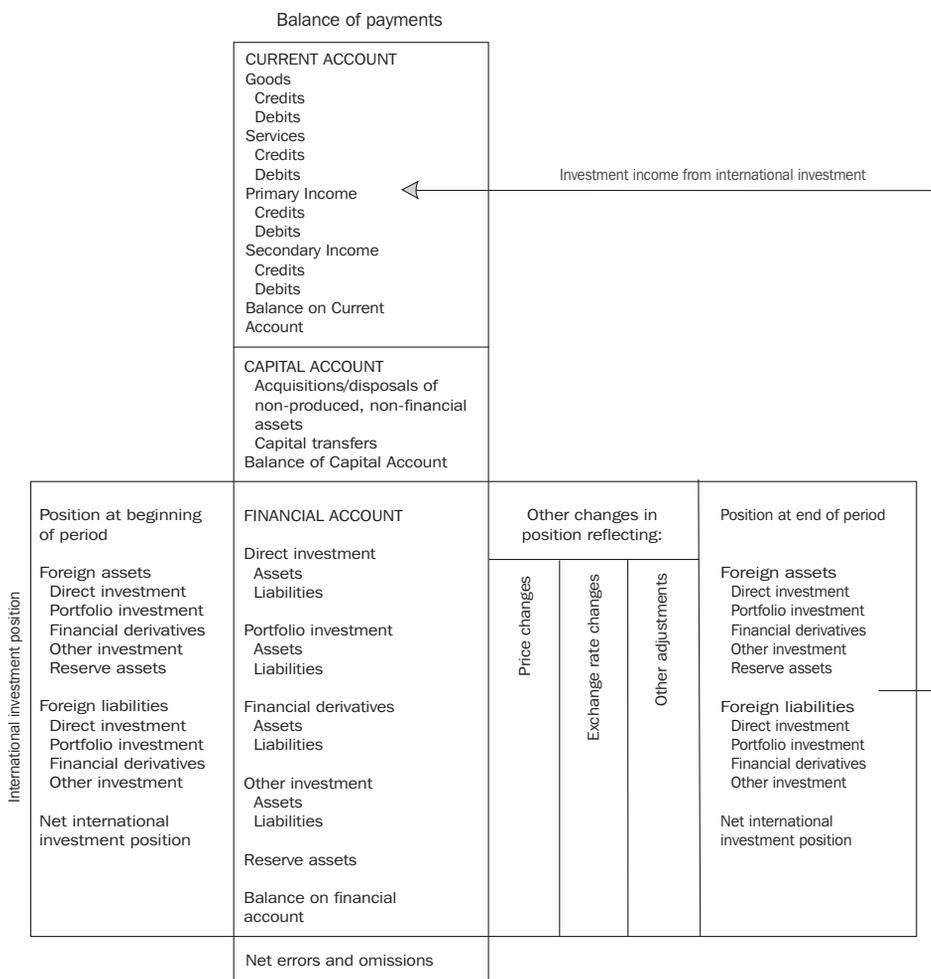
- exports of goods, provision of services, provision of the factors of production to another economy and
- financial items reflecting a reduction in the economy's external assets or an increase in external liabilities.

The compiling economy records debit entries for:

- imports of goods, acquisition of services, use of production factors provided by another economy and
- financial items reflecting an increase in assets or a decrease in liabilities.

In other words, for real or financial assets, a positive figure (credit) indicates a decrease in holdings, and a negative figure (debit) indicates an increase. For liabilities in the form of financial instruments, the rule is reversed, that is, a positive figure indicates an increase and a negative one, a decrease.

31.1 RELATIONSHIP BETWEEN THE BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION STATEMENTS



Source: *Balance of Payments and International Investment Position, Australia: Concepts, Sources and Methods (5331.0)*.

Transactions in a double-entry accounting system are reflected in pairs of equal credit and debit entries. For example, an export transaction for which payment is received through the banking system involves a credit entry for providing the good to a non-resident and a debit entry for being provided with foreign exchange assets as payment for the export. Any entries for which there is no quid pro quo are matched by special offsetting entries. Such offsetting entries are made in the categories 'current transfers' (of secondary income, when offsetting the provision of current

resources such as food for famine relief) and 'capital transfers' (of the capital account, when offsetting the provision of capital resources such as development aid to build a new dam).

In principle, the net sum of all credit and debit entries is zero. In practice, some transactions are not measured accurately (errors), while others are not measured at all (omissions). Equality between the sums of the credit and debit entries is then brought about by the inclusion of a 'net errors and omissions' item which balances the accounts.

Transactions should be valued in the balance of payments at market prices. However, for practical reasons, transactions are generally valued in the statistics at transaction prices as this basis provides the closest practical approximation to the market price principle.

Transactions recorded in the balance of payments should be recorded at the time of change of ownership. For current account transactions, this occurs when ownership of goods changes, or services are provided. Investment income is recorded on a full accrual basis, that is, when it is earned. Reinvested earnings are calculated for the earnings of the period of account. Secondary income and capital transfers should be recorded when the goods, services, cash, etc., to which they are offsets, change ownership. Those transfers, such as taxes and fines, which are imposed by one party on another, should ideally be recorded at the time of occurrence of the underlying transactions or other flows or events that give rise to the liability to pay. For financial account transactions, the time of recording is at the change of ownership of the financial claims, which by convention is the time at which transactions are entered in the books of the transactors.

In practice, the nature of the available data sources is such that the time of recording of transactions will often differ from the time of change of ownership. Where practical, timing adjustments are made for significant transactions to ensure that they are recorded in the time period in which change of ownership occurs.

As described above, international investment position statistics are the balance sheet of the levels (stock) of Australia's foreign financial assets and liabilities. While the international investment position statistics form an integral part of Australia's international accounts (diagram 31.1), they are also useful in their own right, for example, in determining the impact of foreign investment policies and the level of Australia's foreign assets and liabilities, including foreign debt. They are also useful when analysing the behaviour of financial markets.

As with the balance of payments, market price is the principal method of valuation in international investment position statistics, and financial assets and liabilities are recognised on a change of ownership basis, that is, at the time when the foreign financial asset or liability is acquired, sold, repaid or otherwise disposed of.

Components of the international accounts

The *Statistical overview* in this chapter provides details of the current, capital and financial accounts of Australia's balance of payments. Current and capital account transactions are generally recorded 'gross'. This means that, for each item in the current and capital accounts, the credit entries are recorded separately from the debit entries. For example, exports (goods credits) are shown separately from imports (goods debits). For each item in the financial account, however, debit and credit transactions are combined to produce a single result for the item, which may be either a net credit or a net debit. For example, in a given period, non-resident purchases of shares issued by companies in Australia (credit) are netted against sales of Australian shares to residents by non-residents (debit) and the net result is recorded in the financial account as either a net credit or a net debit.

The current account records transactions between Australian residents and non-residents in goods, services, primary income and secondary income. The capital account records capital transfers and the acquisition/disposal of non-produced non-financial assets. The financial account shows transactions in foreign financial assets and liabilities.

International trade in goods

In addition to the transactions in goods presented in the current account of the balance of payments, Australia compiles more detailed international merchandise trade statistics. The international merchandise trade statistics are compiled in broad agreement with the UN recommendations for the compilation of international merchandise trade statistics. More information on the concepts, sources and methods used is included in *International Merchandise Trade, Australia, Concepts, Sources and Methods* (5489.0). Various adjustments relating to coverage, timing, classification and valuation are necessary to put international merchandise trade statistics on a balance of payments basis in accordance with the *Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6)*. As a result of these adjustments, the merchandise exports and imports statistics by country and by commodity (graphs 31.7 and 31.8 and tables 31.9 and 31.10) differ from the

data shown in table 31.2, which are on a balance of payments basis. More information on the concepts, sources and methods used is included in *Balance of Payments and International Investment Position, Australia: Concepts, Sources and Methods* (5331.0).

The merchandise trade statistics are compiled from information submitted by importers and exporters to the Australian Customs and Border Protection Service. These statistics cover all movable goods which add to (imports) or subtract from (exports) Australia's stock of material resources, although some goods are excluded for conceptual or practical reasons, for example, those goods temporarily brought to Australia for subsequent forwarding to foreign destinations, and low-value imports and exports in the parcel post system.

International merchandise trade is classified by commodity, by country of origin/destination, by Australian state of production/destination, and by industry of origin.

The international standard for the classification of internationally traded goods by commodity is the Harmonized System, a World Customs Organization classification which groups goods according to their component materials, from raw materials through to processed and manufactured products.

The Harmonized System is the basis of the exports classification, the Australian Harmonized Export Commodity Classification, and the imports classification, the Combined Australian Customs Tariff Nomenclature and Statistical Classification (Customs Tariff).

The Australian Bureau of Statistics (ABS) also classifies export and import statistics according to:

- the United Nations (UN) Standard International Trade Classification (SITC Rev. 4), which groups goods according to the degree of processing they have undergone, from food and crude raw materials through to highly transformed manufactures. Commodity statistics in this section are presented according to SITC Rev. 4
- the UN classification Broad Economic Categories, which classifies international trade for the purposes of general economic analysis according to the main end use of the commodities traded.

International trade in services

International trade in services covers all services rendered by Australian residents to non-residents (exports) and by non-residents to residents (imports). Services are broadly defined as products other than tangible goods, although they also include transactions in certain goods such as those purchased by travellers.

Australia's international trade in services statistics are compiled in accordance with the International Monetary Fund's BPM6. This framework has been further elaborated in the Extended Balance of Payments Services Classification, as detailed in the UN publication *Manual on Statistics of International Trade in Services, 2010*. International trade in services statistics are compiled for services types including Transport; Travel; Construction; Telecommunications, computer and information services; Charges for the use of intellectual property n.i.e.; Other business services; Personal, cultural and recreational services; and Government goods and services. Some information is also available by partner country and state.

As international trade in services covers a diverse range of activities, a variety of data sources and methods are used to compile estimates of the different service types.

More information on the concepts, sources and methods used to produce Australia's international trade in services statistics is included in *Balance of Payments and International Investment Position, Australia: Concepts, Sources and Methods, 1998* (5331.0).

Primary income

Primary income, comprising investment income (e.g. dividends and interest) and compensation of employees (e.g. wages), covers income earned by Australian residents from non-residents (credits) or earned by non-residents from residents (debits).

Secondary income and the capital account

Secondary income covers current transfers as the offsetting entries required when resources are provided, without something of economic value being received in return. When non-residents provide resources to Australian residents, offsetting credits are required. Similarly,

when residents provide resources to non-residents, offsetting debits are required. General government current transfers (e.g. official foreign aid) are distinguished from current transfers by other sectors.

The capital account covers capital transfers (e.g. official foreign aid dedicated to infrastructure projects), with general government distinguished from other sectors, and the acquisition/disposal of non-produced, non-financial assets.

Financial account and international investment position

The initial dissection of the financial account is by functional type of capital – direct investment, portfolio investment, financial derivatives, other investment and reserve assets. Where appropriate, these components are further dissected into assets and liabilities. Within the asset and liability categories, details are presented of instruments of investment and resident sectors (for other than direct investment), and in some cases the contractual maturity of the instruments.

The primary distinction used in international investment position statistics is between foreign assets and foreign liabilities. The difference between the two represents the net international investment position (graph 31.14 and table 31.15). Foreign assets primarily represent the stock of foreign financial assets owned by Australian residents and foreign liabilities refers to the stock of financial assets in Australia owned by non-residents. The breakdown below this asset/liability presentation is by functional type of capital (table 31.17).

While many types of instruments of investment are used in financial markets, similar instruments are combined for analytical reasons and ease of reporting.

Statistical overview

Balance of payments

The balance on current account for 2010–11 was a deficit of \$33.2 billion, a decrease of \$22.8 billion (41%) on the previous year (table 31.2). The balance on goods and services was a surplus of \$20.9 billion, a turnaround of \$25.5 billion on the deficit of \$4.6 billion recorded in 2009–10. The balance on goods was a surplus of \$27.7b

and the balance on services was a deficit of \$6.8b. The net primary income deficit rose by \$3.3b (7%) with an increase in primary income credits of \$5.9b (17%) and an increase in primary income debits of \$9.2b (11%).

The deficit on capital account increased by \$0.3b (91%) to \$0.6b in 2010–11.

The financial account recorded a net inflow of investment into Australia in 2010–11 of \$34.1b. This was largely driven by net portfolio investment of \$33.8b together with net direct investment of \$24.8b. This was countered by net outflows in financial derivatives of \$11.3b, other investment of \$10.1b and reserve assets of \$3.2b.

Graph 31.3 shows the differing influences of the balance on goods and services (trade balance) and the net primary income deficit on the balance on current account. The net primary income deficit rose from \$18.5 billion in 1996–97 to \$53.6 billion in 2010–11. The underlying level of net primary income drives the level of the current account deficit, as Australia continues to service its external liabilities.

Ratios

The ratio of the current account deficit to gross domestic product (GDP) was –2.4% in 2010–11, a substantial decrease on the previous year, which was –4.3% (table 31.4).

Exchange rates

Graph 31.5 shows movements in the annual average exchange rates against the Australian dollar for the four major currencies. Values of non-financial and financial transactions as well as the values of positions of financial assets and liabilities may be expressed initially in a variety of currencies or in other standards of value. The conversion of these values into a reference unit of account is necessary for the construction of consistent and analytically meaningful accounts and is typically carried out at the point of transaction or reporting to Customs based on current trading day values.

International trade in goods and services (balance of payments basis)

Australia's international trade in goods and services (chain volume measures) for the five years to 2010–11 is shown in table 31.6.

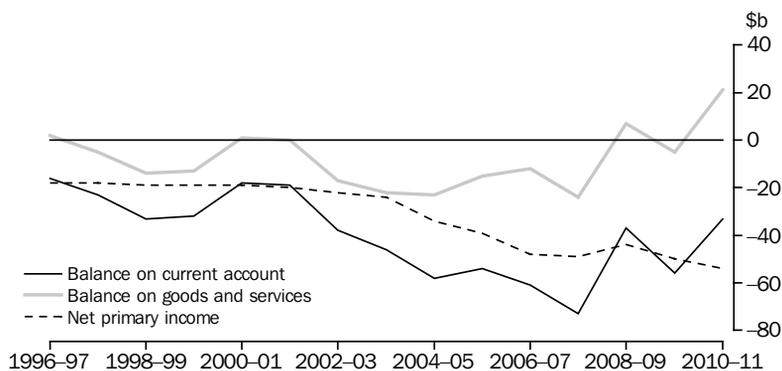
31.2 BALANCE OF PAYMENTS(a), Summary

	2006-07	2007-08	2008-09	2009-10	2010-11
	\$m	\$m	\$m	\$m	\$m
Current account	-60 543	-72 871	-37 272	-56 018	-33 229
Goods and services	-11 907	-24 353	7 353	-4 621	20 918
Credits	216 795	233 813	284 571	253 762	297 545
Debits	-228 702	-258 166	-277 218	-258 383	-276 627
Goods	-13 934	-22 227	10 733	-3 244	27 708
Credits	169 620	182 922	231 623	201 751	246 975
Debits	-183 554	-205 149	-220 890	-204 995	-219 267
Services	2 027	-2 126	-3 380	-1 377	-6 790
Credits	47 175	50 891	52 948	52 011	50 570
Debits	-45 148	-53 017	-56 328	-53 388	-57 360
Primary income	-48 393	-48 572	-44 376	-50 327	-53 613
Credits	36 926	44 528	43 364	34 285	40 184
Debits	-85 319	-93 099	-87 741	-84 612	-93 798
Secondary income	-243	54	-249	-1 070	-534
Credits	6 403	6 639	6 667	6 315	6 605
Debits	-6 646	-6 585	-6 916	-7 385	-7 139
Capital and financial account	61 153	72 000	38 139	54 763	33 503
Capital account	281	-232	-611	-291	-556
Acquisition/disposal of non-produced, non-financial assets	423	-1	-244	-4	-29
Credits	489	9	2	22	73
Debits	-66	-10	-246	-26	-102
Capital transfers	-142	-231	-367	-287	-527
Credits	0	0	0	0	0
Debits	-142	-231	-367	-287	-527
Financial account	60 872	72 232	38 750	55 054	34 059
Direct investment	11 507	29 746	17 336	20 668	24 791
Assets	-34 432	-27 103	-30 999	-19 387	-15 053
Liabilities	45 938	56 850	48 335	40 055	39 843
Portfolio investment	66 370	-5 456	48 539	70 085	33 829
Financial derivatives	2 006	-6 243	-3 491	-9 762	-11 269
Other investment	1 116	9 893	-11 738	-31 866	-10 093
Reserve assets	-20 127	44 292	-11 896	5 929	-3 199
Net errors and omissions	-611	871	-867	1 255	-273

(a) In current prices.

Source: Balance of Payments and International Investment Position, Australia (5302.0).

31.3 CURRENT ACCOUNT, Summary



Source: Balance of Payments and International Investment Position, Australia (5302.0).

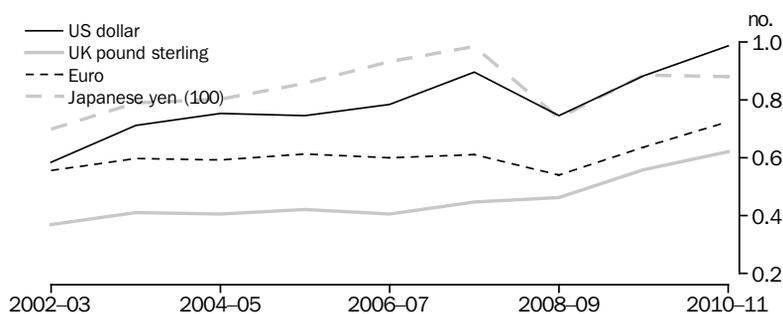
31.4 RATIOS

Financial Year	2006-07	2007-08	2008-09	2009-10	2010-11
	%	%	%	%	%
To GDP					
Current account	-5.6	-6.2	-3.0	-4.3	-2.4
Good and services	-1.1	-2.1	0.6	-0.4	1.5
Credits	20.0	19.9	22.7	19.6	21.2
Debits	-21.1	-22.0	-22.1	-20.0	-19.8
Primary income	-4.5	-4.1	-3.5	-3.9	-3.8
Net international investment position(a)	56.6	55.9	56.2	60.1	57.0
Net foreign equity(a)	6.8	4.8	6.2	7.1	8.0
Net foreign debt(a)	49.8	51.1	50.0	53.0	49.0
To goods and services credits					
Net investment income	-21.1	-20.3	-15.1	-19.2	-17.5
Net income on foreign equity	-9.7	-8.0	-4.5	-8.7	-8.8
Net income on foreign debt	-12.0	-12.3	-10.5	-10.5	-8.7

(a) These ratios are derived using levels for those series at the end of period and GDP for the year ended with that period.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

31.5 EXCHANGE RATES, Units of foreign currency per A\$(a)



(a) Exchange rates are provided by the Reserve Bank of Australia in respect of each trading day. Annual averages are derived from these rates.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

Chain volume measures of exports and imports remove the effects of price changes. They provide measures, in dollar values, which indicate changes in the actual volume of exports and imports.

Between 2009-10 and 2010-11, the chain volume measures of Australia's exports of goods and services increased by \$0.6 billion, while imports increased by \$26.9 billion (10%). In comparison, the current price value of exports, which incorporates both volume and price changes, increased by \$43.8b (17%) (table 31.2). This indicates that, on average, the prices of Australia's exports increased more rapidly than their volumes over the period.

Table 31.6 also presents various price indexes for Australia's trade in goods and services. The implicit price deflators (IPDs) are derived by dividing the current price measures (table 31.2) by the corresponding chain volume measures. These IPDs reflect not only price change, but also compositional effects from year to year.

Australia's terms of trade, which is a measure of the purchasing power of its exports over imported goods and services (derived by dividing the IPD for credits by the IPD for debits) rose by 20.6% to 120.6 in 2010-11, reflecting a 17.0% rise in the IPD for goods and services credits and a 3.0% fall in the IPD for goods and services debits.

31.6 CHAIN VOLUME MEASURES, IMPLICIT PRICE DEFLATORS AND TERMS OF TRADE(a)

Financial Year	2006–07	2007–08	2008–09	2009–10	2010–11
CHAIN VOLUME MEASURES (\$m)					
Goods and services	7 665	-15 969	-3 562	-4 621	-30 913
Goods and services credits	228 442	236 965	241 050	253 762	254 405
Goods credits	178 175	184 242	187 975	201 751	204 841
Services credits	51 136	53 651	54 023	52 011	49 564
Goods and services debits	-220 778	-252 934	-244 612	-258 383	-285 318
Goods debits	-179 086	-202 038	-195 181	-204 995	-224 250
Services debits	-41 801	-50 862	-49 296	-53 388	-61 068
IMPLICIT PRICE DEFLATORS (index)					
Goods and services credits	94.9	98.7	118.1	100	117.0
Goods credits	95.2	99.3	123.2	100	120.6
Services credits	92.3	94.9	98.0	100	102.0
Goods and services debits	103.6	102.1	113.3	100	97.0
Goods debits	102.5	101.5	113.2	100	97.8
Services debits	108.0	104.2	114.3	100	93.9
TERMS OF TRADE (index)					
Goods and services	91.6	96.7	104.2	100	120.6
Goods	92.9	97.8	108.9	100	123.3
Services	85.4	91.0	85.8	100	108.6

(a) Reference year for chain volume measures, price and terms of trade indexes is 2009–10.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

International trade in goods by commodity (merchandise trade basis)

In 2010–11, total exports of goods on a merchandise trade basis increased \$45.0 billion (22%) to \$245.7 billion. Graph 31.7 shows the top 10 commodity exports in 2010–11. The largest increases by value were Iron ore and concentrates, up \$23.3b (66%) and Coal, not agglomerated, up \$7.4b (20%).

In 2010–11, total imports of goods on a merchandise trade basis increased \$10.6 billion (5%) to \$214.2 billion. Graph 31.8 shows the top 10 commodity imports in 2010–11. The largest increase by value was Crude petroleum oils, up \$4.6b (31%) and the largest decrease was Gold, non-monetary, down \$2.3b (30%).

International trade in goods by country (merchandise trade basis)

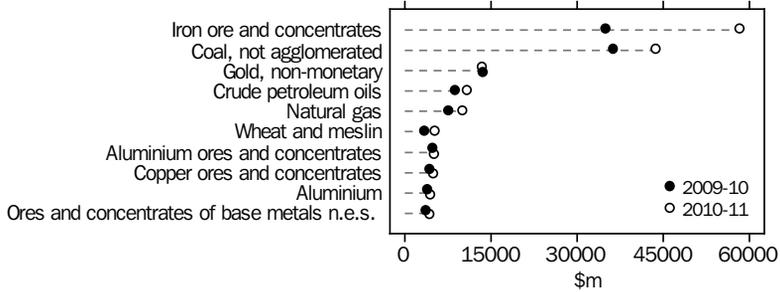
For exports, country refers to the country to which the goods were consigned at the time of export. For imports, country refers to the country of origin of the goods, that is, where the majority of processing of the goods took place. Table 31.9

shows merchandise exports to Australia's 10 main destinations and table 31.10 shows merchandise imports from the 10 main countries of origin, in 2010–11.

In 2010–11, Australia recorded a merchandise trade surplus of \$31.6 billion. The largest trade surpluses by country are as follows:

- Japan – trade surplus of \$30.3b, up \$11.0b due to a \$9.9b increase in exports and a decrease in imports. Contributing to the increase in exports were Metalliferous ores and metal scrap (up \$4.5b) and Coal, coke and briquettes (up \$2.5b).
- China (excludes SARs and Taiwan) – trade surplus of \$23.7b, up \$13.6b due to an \$18.3b increase in exports and an increase in imports. Contributing to the increase in exports were Metalliferous ores and metal scrap (up \$15.6b) and Petroleum (up \$1.1b).
- Korea, Republic of (South) – trade surplus of \$15.6b, up \$6.1b due to a \$6.1b increase in exports. Contributing to the increase in exports were Metalliferous ores and metal scrap (up \$3.6b) and Coal, coke and briquettes (up \$1.6b).

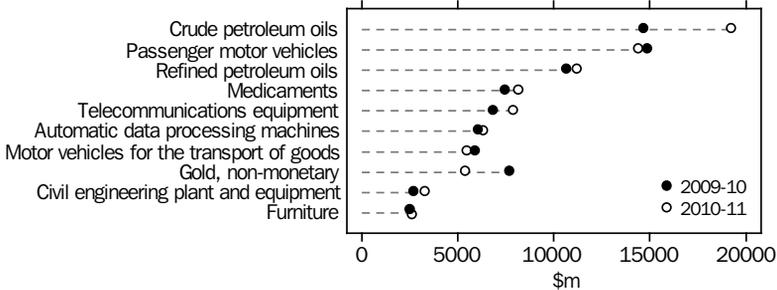
**31.7 MERCHANDISE EXPORTS OF MAJOR COMMODITIES,
By commodity group(a)**



(a) Abbreviated description used. Refer to UN Standard International Trade Classification, Revision 4 (SITC Rev 4), 3-digit code.

Source: *International Trade in Goods and Services, Australia* (5368.0).

**31.8 MERCHANDISE IMPORTS OF MAJOR COMMODITIES,
By commodity group(a)**



(a) Abbreviated description used. Refer to UN Standard International Trade Classification, Revision 4 (SITC Rev 4), 3-digit code.

Source: *International Trade in Goods and Services, Australia* (5368.0).

31.9 INTERNATIONAL MERCHANDISE EXPORTS, Top 10 countries—2010–11

	Value (FOB)(a)	Percentage share	Average annual compound
	\$m	of value (FOB)	growth over five years
		%	%
China (excludes SARs and Taiwan)	64 854	26.4	23.3
Japan	46 951	19.1	7.6
Korea, Republic of (South)	22 573	9.2	11.5
India	15 765	6.4	9.3
Taiwan	9 109	3.7	8.0
United States of America	9 066	3.7	-1.6
New Zealand	7 691	3.1	-4.0
Thailand	6 950	2.8	10.3
United Kingdom	6 604	2.7	1.5
Singapore	5 466	2.2	3.3

(a) Free-on-board.

Source: *International Trade in Goods and Services, Australia* (5368.0).

31.10 INTERNATIONAL MERCHANDISE IMPORTS, Top 10 countries—2010–11

	Value (Customs value) \$m	Percentage share of value (Customs value) %	Average annual compound growth over five years %
China (excludes SARs and Taiwan)	41 109	19.2	8.7
United States of America	23 228	10.9	-1.4
Japan	16 692	7.8	-0.8
Singapore	11 419	5.3	2.4
Germany	10 247	4.8	2.0
Thailand	9 117	4.3	4.8
Malaysia	8 815	4.1	6.0
New Zealand	7 364	3.4	5.6
Korea, Republic of (South)	6 984	3.3	3.0
United Kingdom	5 985	2.8	-4.2

Source: *International Trade in Goods and Services, Australia* (5368.0).

In 2010–11, Australia recorded a merchandise trade deficit with a number of countries, the largest of which were:

- United States of America – trade deficit of \$14.2 billion, an increase of \$1.9 billion on the previous year's deficit, with a \$0.5 billion decrease in exports and a \$1.4 billion increase in imports. Contributing to the increase in imports were Road vehicles (incl. air-cushion vehicles) (up \$0.8b) and Power generating machinery and equipment (up \$0.3b).
- Germany – trade deficit of \$8.1b, a decrease of \$0.9b on the previous year's deficit, with a \$0.5b increase in exports and \$0.5b decrease in imports. Contributing to the decrease in imports were Machinery specialised for particular industries (down \$0.4b) and Transport equipment (excl. road vehicles) (down \$0.2b).

International trade in services

Table 31.11 provides details of Australia's international trade in services, by service type.

In 2006–07, Australia recorded a surplus on its international trade in services (i.e. the value of exports was greater than the value of imports). However, between 2007–08 and 2010–11, Australia recorded annual deficits. Between 2009–10 and 2010–11, the services deficit increased \$5.4 billion (393%), with a decrease in exports of \$1.4 billion (3%) and an increase in imports of \$4.0 billion (7%). The major contributor to the decrease in services exports in 2010–11 was a decrease in Travel services, caused by a decrease in Education-related personal travel. Other

business services also decreased. These decreases were partially offset by small increases in all categories of Transport services, except Freight. There were increases in all the main categories of services imports with large contributions by Other business services, Travel services and Transport services.

Tables 31.12 and 31.13 show Australia's main trading partners for exports and imports of services in 2010–11.

In 2010–11, Australia recorded a deficit on its trade in services with its major services trading partner, the United States of America, as well as deficits for Singapore, the United Kingdom, Hong Kong (SAR of China) and Japan. A large trade surplus was recorded with China (excludes SARs and Taiwan), and a smaller surplus with New Zealand.

International investment position

Australia's net international investment position is the difference between the levels of Australia's foreign financial liabilities and the levels of its foreign financial assets. Historically, Australia has had a net liability position with the rest of the world.

Graph 31.14 shows the components of Australia's international investment position, indicating that the growth in Australia's net international liabilities between 30 June 2001 and 30 June 2011 is mostly due to a rise in Australia's net foreign debt. At 30 June 2011, Australia's net foreign liabilities of \$797.7 billion were composed of net foreign debt of \$686.2 billion and net foreign equity of \$111.4 billion.

31.11 INTERNATIONAL TRADE IN SERVICES, By service type

	2006-07	2007-08	2008-09	2009-10	2010-11
	\$m	\$m	\$m	\$m	\$m
EXPORTS					
Services	47 175	50 891	52 948	52 011	50 570
Manufacturing services on physical inputs owned by others	21	13	45	48	33
Maintenance and repair services n.i.e.(a)	90	103	86	57	49
Transport	7 891	8 510	7 342	6 189	6 339
Passenger	3 936	3 843	3 410	2 610	2 714
Freight	771	1 464	851	436	403
Other	1 995	2 263	2 127	2 188	2 253
Postal and courier services	1 189	940	954	955	969
Travel	25 161	28 250	31 086	32 918	30 968
Other	14 012	14 015	14 389	12 799	13 181
IMPORTS					
Services	-45 148	-53 017	-56 328	-53 388	-57 360
Manufacturing services on physical inputs owned by others	0	0	0	0	-1
Maintenance and repair services n.i.e.(a)	-131	-117	-193	-294	-342
Transport	-15 362	-16 427	-15 832	-13 727	-14 749
Passenger	-6 593	-6 998	-5 835	-5 118	-6 103
Freight	-8 303	-8 924	-9 388	-8 142	-8 244
Other	-298	-327	-437	-309	-288
Postal and courier services	-168	-178	-172	-158	-114
Travel	-15 934	-20 153	-22 082	-23 285	-25 374
Other	-13 721	-16 320	-18 221	-16 082	-16 894

(a) Not included elsewhere.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

31.12 SERVICES EXPORTS, Top 10 countries—2010-11

	Value	Percentage share of value	Average annual compound growth over five years
	\$m	%	%
China (excludes SARs and Taiwan)	5 662	11.2	12.2
United States of America	5 176	10.2	1.4
United Kingdom	3 992	7.9	-3.1
New Zealand	3 348	6.6	0.4
Singapore	2 823	5.6	1.5
India	2 501	4.9	12.6
Japan	1 956	3.9	-8.6
Korea, Republic of (South)	1 735	3.4	3.8
Hong Kong (SAR of China)	1 727	3.4	1.7
Malaysia	1 665	3.3	6.2

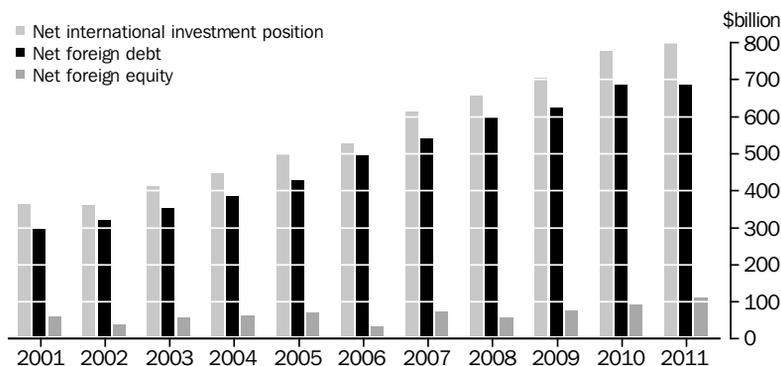
Source: *International Trade in Goods and Services, Australia (5368.0)*.

31.13 SERVICES IMPORTS, Top 10 countries—2010-11

	Value	Percentage share of value	Average annual compound growth over five years
	\$m	%	%
United States of America	-10 359	18.1	8.3
United Kingdom	-4 891	8.5	2.7
Singapore	-3 724	6.5	1.0
New Zealand	-2 713	4.7	6.3
Japan	-2 132	3.7	2.4
Indonesia	-2 065	3.6	26.2
Thailand	-2 036	3.5	14.3
Hong Kong (SAR of China)	-1 980	3.5	4.0
China (excludes SARs and Taiwan)	-1 639	2.9	7.9
Germany	-1 448	2.5	4.0

Source: *International Trade in Goods and Services, Australia (5368.0)*.

31.14 NET INTERNATIONAL INVESTMENT—30 June



Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

Table 31.15 provides a reconciliation between opening and closing levels for foreign financial assets, foreign financial liabilities and Australia's net international investment position for the past three financial years. Increases and decreases in these assets and liabilities are due to financial transactions (investment flows), price changes (share prices and interest yields), exchange rate changes and other adjustments.

Foreign debt

Australia's foreign debt liabilities include borrowing from non-residents and other non-equity liabilities to non-residents such as derivatives positions with a negative market value. Foreign debt assets include lending to non-residents and other non-equity assets such as derivatives positions with a positive market value. The majority of public sector debt assets are held by the Reserve Bank of Australia as reserve assets.

Table 31.16 shows foreign debt assets and liabilities and net foreign debt attributable to the public sector (general government plus public financial and non-financial corporations) and the private sector. At 30 June 2011, the public sector was in a net debt liability position with non-residents of \$148.9 billion. Of total private sector net foreign debt of \$537.3 billion at 30 June 2011, private financial corporations accounted for \$354.1 billion and private non-financial corporations accounted for \$183.3 billion.

Levels of foreign assets and foreign liabilities

In table 31.17, levels of investment are categorised by assets/liabilities and functional category (Direct, Portfolio, Financial derivatives, Other and Reserve assets).

Direct investment is a category of international investment that reflects the objective of obtaining a lasting interest by a resident in one economy in an enterprise in another economy, and implies a significant degree of influence by the investor in the management of the enterprise. A foreign Direct investment relationship is established when an investor, who is a resident in one economy, holds 10% or more of the ordinary shares or voting stock of an enterprise ('direct investment enterprise') in another economy. The Portfolio investment category covers investment in equity where the investor holds less than 10% of the ordinary shares or voting stock of an enterprise and investment in debt securities. The remaining categories are Financial derivatives, Other investment and Reserve assets (in the case of foreign assets).

The 2010–11 net international investment position increased by \$19.8 billion over 2009–10 (table 31.15). The level of foreign liabilities rose \$66.3 billion (table 31.17), while the level of foreign assets rose \$46.5 billion.

31.15 INTERNATIONAL INVESTMENT POSITION

	CHANGES IN POSITION REFLECTING					
	<i>Position at beginning of period</i>	<i>Transactions</i>	<i>Price changes</i>	<i>Exchange rate changes</i>	<i>Other adjustments</i>	<i>Position at end of period</i>
	\$m	\$m	\$m	\$m	\$m	\$m
NET INTERNATIONAL INVESTMENT POSITION						
Total						
2008-09	657 553	38 750	-17 618	29 397	-4 512	703 571
2009-10	703 571	55 054	15 169	5 498	-1 428	777 864
2010-11	777 864	34 059	-47 286	34 763	-1 749	797 651
Equity						
2008-09	56 601	65 739	4 170	-41 856	-6 721	77 932
2009-10	77 932	-10 718	18 937	9 322	-3 694	91 780
2010-11	91 780	-4 754	-50 492	77 875	-2 991	111 418
Debt						
2008-09	600 952	-26 989	-21 788	71 253	2 211	625 639
2009-10	625 639	65 772	-3 768	-3 823	2 265	686 084
2010-11	686 084	38 813	3 205	-43 113	1 243	686 233
FOREIGN ASSETS						
Total						
2008-09	-1 083 291	-58 573	130 759	-73 031	-5 094	-1 089 230
2009-10	-1 089 230	-94 554	-38 212	28 192	-3 495	-1 197 299
2010-11	-1 197 299	-72 021	-81 263	112 544	-5 746	-1 243 783
Equity						
2008-09	-580 845	-18 365	131 501	-41 856	-3 313	-512 879
2009-10	-512 879	-58 842	-12 763	9 322	-3 887	-579 050
2010-11	-579 050	-55 645	-66 207	77 875	-4 196	-627 223
Debt						
2008-09	-502 445	-40 209	-742	-31 175	-1 781	-576 352
2009-10	-576 352	-35 712	-25 449	18 871	393	-618 249
2010-11	-618 249	-16 376	-15 056	34 669	-1 549	-616 560
FOREIGN LIABILITIES						
Total						
2008-09	1 740 844	97 323	-148 376	102 428	581	1 792 801
2009-10	1 792 801	149 608	53 381	-22 694	2 067	1 975 163
2010-11	1 975 163	106 080	33 976	-77 782	3 997	2 041 435
Equity						
2008-09	637 446	84 104	-127 331	—	-3 409	590 811
2009-10	590 811	48 124	31 700	—	194	670 829
2010-11	670 829	50 891	15 715	—	1 205	738 641
Debt						
2008-09	1 103 398	13 220	-21 046	102 428	3 991	1 201 990
2009-10	1 201 990	101 484	21 680	-22 694	1 874	1 304 334
2010-11	1 304 334	55 189	18 261	-77 782	2 791	1 302 794

— nil or rounded to zero (including null cells)

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

31.16 LEVELS OF FOREIGN DEBT—30 June

	2007	2008	2009	2010	2011
	\$m	\$m	\$m	\$m	\$m
Foreign debt assets	-462 538	-502 445	-576 352	-618 249	-616 560
Public sector	-97 831	-57 685	-80 920	-84 512	-85 371
Private sector	-364 706	-444 760	-495 432	-533 738	-531 189
Foreign debt liabilities	1 002 298	1 103 398	1 201 990	1 304 334	1 302 794
Public sector	82 212	90 295	119 904	197 878	234 281
Private sector	920 086	1 013 103	1 082 086	1 106 456	1 068 513
Net foreign debt	539 760	600 952	625 639	686 084	686 233
Public sector	-15 619	32 610	38 985	113 366	148 910
Private sector	555 379	568 342	586 654	572 718	537 323

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

31.17 LEVELS OF FOREIGN ASSETS AND FOREIGN LIABILITIES—30 June

	2007	2008	2009	2010	2011
	\$m	\$m	\$m	\$m	\$m
Levels of foreign assets	-1 049 815	-1 083 291	-1 089 230	-1 197 299	-1 243 783
Direct investment	-374 270	-372 818	-356 784	-379 549	-387 930
Portfolio investment	-398 884	-409 094	-361 762	-448 623	-482 597
Financial derivatives	-55 567	-99 370	-101 869	-98 256	-90 084
Other investment	-141 411	-166 152	-216 504	-227 134	-242 042
Reserve assets	-79 682	-35 856	-52 311	-43 737	-41 130
Levels of foreign liabilities	1 663 001	1 740 844	1 792 801	1 975 163	2 041 435
Direct investment	400 662	439 514	446 298	491 988	515 642
Portfolio investment	1 001 863	972 558	966 449	1 119 958	1163 112
Financial derivatives	66 623	104 713	101 026	98 690	88 555
Other investment	193 852	224 058	279 028	264 526	274 125

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

Finance and insurance foreign affiliates

The ABS captures Australia's economic interaction with the rest of the world by measuring trade flows, income flows, financial flows and investment positions through Balance of Payments and International Investment Position statistics. However, these do not cover all aspects of Australian presence in overseas markets, for example the activities of affiliates of Australian resident enterprises domiciled outside of Australia's economic territory. To partially address this information gap, the ABS conducted a survey with the financial support of the Department of Foreign Affairs and Trade (DFAT). The results of this survey have been published in a new ABS publication, *Australian Outward Finance and Insurance Foreign Affiliate Trade, 2009–10* (5485.0).

The survey included finance and insurance foreign affiliates of enterprises located in Australia that had a majority Australian ownership (over 50% or, in a small number

of cases, almost 50% ownership in host economies with restrictions preventing 50% foreign ownership). Of the 1,245 finance and insurance affiliates, the majority (1,201) were part of an enterprise group located in Australia, which was Australian-owned, while the minority (44) were part of an enterprise group located in Australia but foreign-owned.

The main findings for 2009–10 include:

- Australian resident enterprises had 1,245 finance and insurance foreign affiliates (table S31.1) which:
 - employed 75,919 staff
 - recorded \$28.9 billion in sales of services, of which 97% was finance and insurance services
 - recorded 92% of their sales of finance and insurance services to local residents in the host country of the foreign affiliate, indicating that the foreign affiliates were

S31.1 SUMMARY CHARACTERISTICS OF AUSTRALIA'S FINANCE AND INSURANCE FOREIGN AFFILIATES ABROAD—2009–10

	AT THE END OF PERIOD			DURING PERIOD				
	Number of foreign affiliates no.	Value of Australian equity in foreign affiliates \$m	Employment by foreign affiliates no.	Wages and salaries of foreign affiliates \$m	Sales of services by foreign affiliates \$m	Purchases of services by foreign affiliates \$m	Profit of foreign affiliates(c) \$m	Gross value added(d) of foreign affiliates \$m
By industry(a)								
Finance	429	52 908	53 034	4 083	8 701	6 398	4 712	14 628
Insurance and superannuation funds	297	12 864	18 494	1 712	17 864	13 639	1 500	5 662
Auxiliary finance and insurance services	519	5 321	4 391	873	2 295	1 272	253	878
By country group(b)								
Americas	439	11 997	9 590	1 714	7 261	5 586	99	3 769
Asia-Pacific	423	30 447	51 513	3 480	14 129	9 553	5 308	14 086
Europe(b)	383	28 650	14 816	1 474	7 470	6 171	1 058	3 314
By ownership								
Australian owned parent	1 201	68 119	68 984	6 428	24 801	19 154	5 696	19 433
Foreign owned parent	44	2 974	6 935	240	4 059	2 155	769	1 735
Total	1 245	71 093	75 919	6 668	28 861	21 309	6 465	21 168

(a) Industry statistics according to the Subdivision level of the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (1292.0).

(b) Geographic regions have been grouped according to the Standard Australian Classification of Countries (SACC) (1269.0) groupings. Values for Africa are relatively low and cannot be published for confidentiality reasons. They have been included with Europe.

(c) Profit is on a before tax basis.

(d) Gross value added is the value of output at basic prices minus the value of intermediate consumption at purchasers' prices

Source: *Australian Outward Finance and Insurance Foreign Affiliate Trade, 2009–10* (5485.0).

primarily established to service the markets where they were domiciled.

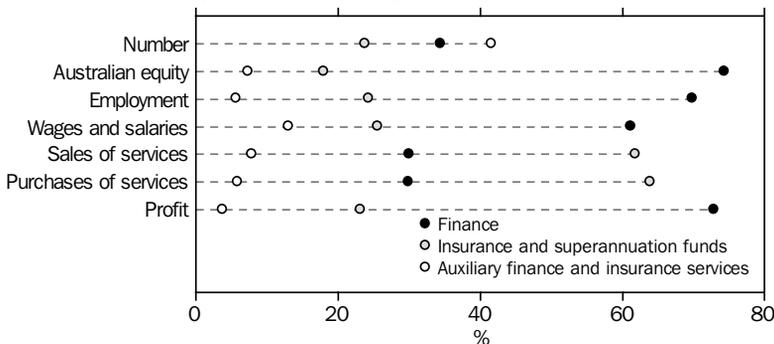
- Foreign affiliates domiciled in New Zealand, the United Kingdom and the United States of America accounted for the majority of the following key measures for Australian finance and insurance outward foreign affiliates (graph S31.3):
 - number of foreign affiliates (54%)
 - employment (69%), and wages and salaries (76%)
 - sales of services (72%)
 - purchases of services (80%).
- Foreign affiliates in the Insurance and superannuation funds industry had the highest sales of services (\$17.9b), while those in the Finance industry were the

majority employer, with 53,034 staff and \$4.1 billion in wages and salaries (table S31.1).

Graph S31.2 shows the percentage contribution of each of the three industries to key measures. There were 92% of sales of services from finance and insurance foreign affiliates attributed to local residents in their host countries. This indicates that they were primarily established to service the markets where they were domiciled.

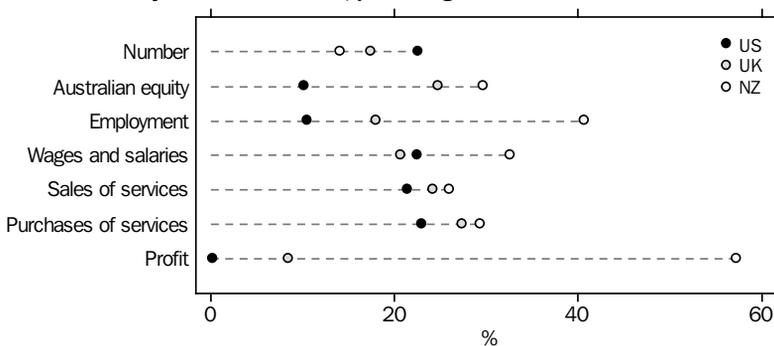
Of the 1,245 finance and insurance foreign affiliates, 439 were in the Americas region, 423 were in the Asia-Pacific region and 383 were in Europe and Africa. Foreign affiliates domiciled in New Zealand, the United Kingdom and the United States of America collectively accounted for 76% of the wages and salaries of finance and insurance foreign affiliates and 72% of their sales of services (graph S31.3).

S31.2 KEY MEASURES OF FINANCE AND INSURANCE FOREIGN AFFILIATES, By industry, percentage of total—2009–10



Source: Australian Outward Finance and Insurance Foreign Affiliate Trade, 2009–10 (5485.0).

S31.3 KEY MEASURES OF FINANCE AND INSURANCE FOREIGN AFFILIATES, By selected countries, percentage of total—2009–10



Source: Australian Outward Finance and Insurance Foreign Affiliate Trade, 2009–10 (5485.0).

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Articles in previous issues

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Acknowledgements

ABS publications, including *Year Book Australia*, draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued co-operation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905* (Cwlth).

The ABS thanks the following people and organisations for their contribution to *Year Book Australia 2012*:

Sheridan Roberts (Editor)
Derek Byars (Data specialist)
Michael Harrington (Indexer)

Ms Paula Kelly, State Library of Victoria
Ms Sue McKerracher, The Library Agency
Dr Killian Mullan, Australian Institute of Family Studies
Dr Galina Daraganova, Australian Institute of Family Studies
Ms Vanessa Pine, Australian Year of the Farmer
Ms Diana Forrester, Professional Public Relations
Ms Melina Morrison, Social Business Australia
Dr Blair Trewin, Bureau of Meteorology

Australian government departments, agencies and organisations:

Abacus – Australian Mutuals
Alfalfa House
AusAID
Australian Bureau of Agricultural and Resource Economics and Sciences
Australian Customs and Border Protection Service
Australian Institute of Aboriginal and Torres Strait Islander Studies
Australian Institute of Family Studies
Australian Institute of Health and Welfare
Australian Taxation Office
Australian Year of the Farmer Secretariat
bankmecu
Biological Farmers of Australia
Boomalli Aboriginal Artists Cooperative
Bureau of Meteorology
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Department of Health and Ageing
Department of Human Services, Victoria
Department of Immigration and Citizenship
Department of Infrastructure and Transport
Department of Parliamentary Services – Parliamentary Library
Department of Regional Australia, Local Government, Arts and Sport
Department of Resources, Energy and Tourism
Department of Sustainability, Environment, Water, Population and Communities
Department of Veterans' Affairs
Fitzroy and Carlton Community Credit Co-operative Ltd
Geoscience Australia
Hepburn Community Wind Park Co-operative Ltd
International Year of Co-operatives – Social Business Australia
Macquarie University
Murray Goulburn Co-operative
Norco Co-operative Limited
NSW Fair Trading (NSW Government, Department of Finance and Services)
Nungera Co-operative Society
Plumbers' Supplies Co-operative
Regional Development Australia – Mid North Coast NSW
Reserve Bank of Australia
State Library of Victoria
Terang Co-op
The Community Mutual Group
The Hospitals Contribution Fund (HCF)
The University of Sydney
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