



**2004**

# **YEAR BOOK AUSTRALIA**



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**2004**

**YEAR BOOK  
AUSTRALIA**



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**AUSTRALIA**

Dennis Trewin  
Australian Statistician

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Cover and chapter introductions:

The painting *Janganpa Mungapunju Jukurrpa* (Native Possum Dreaming at Mungapunju) and *Janganpa Mawurrji Jukurrpa* (Native Possum Dreaming at Mawurrji) was commissioned by the Australian Bureau of Statistics. It is a collaborative work of 35 artists from the Warlukurlangu Artists Aboriginal Association of Yuendumu in the Tanami Desert, north west of Alice Springs, Northern Territory. The principal artist was Andrea Nungarrayi Martin. The eleven metre by one metre acrylic painting on canvas was completed in 2003 and hangs in the atrium of ABS House, Canberra.

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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 and detailed statistical overview of various aspects of the economy and social conditions in Australia. In addition, it contains descriptive matter dealing with Australia's government, international relations, defence, social security, geography and climate.

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.

In recent years, Year Books have had an underlying theme for the articles contained within. This 86th edition of Year Book Australia has a number of articles which address aspects of Australia's Indigenous population.

The statistics contained in this edition are the most recent available at the time of its preparation. In many cases, the ABS web site <<http://www.abs.gov.au>> and the web sites of other organisations provide access to more recent statistics. The ABS *Catalogue of Publications and Products* (1101.0) lists all current publications of the ABS.

Further information on the operations of government and non-government organisations referred to in this edition of the Year Book, including their administrative and legislative background, may be obtained from their individual web sites, the addresses of which are provided throughout and at the end of chapters of the Year Book.

ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated.

Particular thanks and appreciation are extended to those Australian Government and other organisations which have kindly supplied material for inclusion in this 2004 edition of Year Book Australia.

I also take the opportunity to extend my thanks to the many ABS staff who contributed to the preparation and production of the Year Book.

Australian Bureau of Statistics  
Canberra  
February 2004

Dennis Trewin  
Australian Statistician



# Introduction

Year Book Australia provides a comprehensive overview of the economic and social 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.

Many of the statistics are derived from the ABS, the official statistical agency which produces the Year Book. However, a great deal of the information is also contributed by other, predominantly 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 current (86th) edition is the latest in a long series of Year Books extending back to the first edition in 1908. This series provides a valuable source of information on the state of Australia at any point in this period.

In recent years, Year Books have had an underlying theme for the articles contained within. This edition of Year Book Australia has a number of articles which address aspects of Australia's Indigenous population. The Year Book also presents some historical and international perspectives on Australia.

*Year Book Australia 2004* is also available on CD-ROM. Its contents are included in *Australia Now* on the ABS web site at <<http://www.abs.gov.au>>. The Year Book is also the source for *Australia at a Glance* (1309.0).

## 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 which have appeared in previous editions is contained at the end of the Year Book. A collection of articles is included in *Australia Now* on the ABS web site.

The tables and graphs in a chapter are numbered and the text is cross-referenced, as necessary, to the table or graph 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 relatively 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 also serves as a directory to more detailed sources, with the source shown for each statistical table, graph and map. Where the ABS is the source, the title and catalogue number of the relevant publication are quoted. For other sources, the name of the organisation is shown, and the publication title where appropriate. Relevant ABS and other publications are also listed at the end of each chapter,

together with a selection of relevant web sites. A useful complementary publication is the ABS *Catalogue of Publications and Products* (1101.0) which lists all current publications and products of the ABS.

As well as the information included in this Year Book, 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.

The annual reports of government departments and agencies also provide a valuable source of more detailed information on subjects covered in the Year Book. Information may be obtained from the relevant web sites, the addresses of which are provided throughout and at the end of chapters of 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 the same year. Readers wishing to obtain or clarify the latest available statistics should contact the relevant source or access the relevant web site.

## Reference to the national government

Australia has a federal system of government comprising a national government, the governments of the six states and two territories, and local governments. In *Year Book Australia 2004* the national government is 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.

## Symbols and abbreviations

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

'000	thousand
\$	dollar
\$US	United States of America dollar
\$'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
ASGC	Australian Standard Geographical Classification
Cwlth	Commonwealth
CO <sub>2</sub> -e	carbon dioxide equivalent
e.g.	for example
etc.	etcetera
excl.	excludes/excluding
FTE	full-time equivalent
GDP	gross domestic product
Gg	gigagram
GJ	gigajoule
GL	gigalitre
Gm <sup>3</sup>	cubic gigametres
GPs	General Practitioners

Gm <sup>3</sup>	cubic gigametres
GPs	General Practitioners
GST	Goods and Services Tax
GT	giga tonne
ha	hectare
i.e.	that is
IMR	Infant mortality rates
incl.	includes/including
kg	kilogram
km	kilometre
km/h	kilometres per hour
kt	kilotonne
L	litre
m	metre
mill.	million
ML	megalitre
mm	millimetre
Mt	megatonne
Mtoe	megatonnes of oil equivalent
no.	number
n.a.	not available
n.e.c.	not elsewhere classified
n.e.i.	not elsewhere included
n.e.s.	not elsewhere specified
n.f.d.	not further defined
n.p.	not for publication
n.y.a.	not yet available
p.a.	per annum
PJ	petajoule
ppm	parts per million
SLA	Statistical Local Areas
sq km	square kilometre
t	tonne
TPES	total primary energy supply

Abbreviations are used for the following countries and Australian states and territories:

China	China (excludes SARs and Taiwan Province)
Hong Kong	Hong Kong (SAR of China)
NSW	New South Wales
Vic.	Victoria
Qld	Queensland
WA	Western Australia
SA	South Australia
Tas.	Tasmania
NT	Northern Territory
ACT	Australian Capital Territory
Aust.	Australia

Yearly periods shown, for example, as 2000, refer to the year ended 31 December 2000; those shown, for example, as 2000–01, refer to the year ended 30 June 2001. Other yearly periods are specifically indicated. The range of years shown in the table headings, for example, 1901 to 1999–2000, 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 dollars (\$) or cents (c) 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, PO Box 10, Belconnen ACT 2616.

# 1

## GEOGRAPHY AND CLIMATE

Geography is the science of the Earth's form, its physical features, climate and population, and how they relate to each other. The first part of this chapter describes Australia's land forms and topographic features and how they were formed. The second part describes the island continent's wide range of climatic conditions. The third part discusses water resources, a major factor in land form and climate which impacts on many aspects of life in Australia.

Severe drought conditions have been experienced throughout much of Australia recently, resulting in a range of social and economic problems. The section *Drought, Chapter 24, Environment* focuses on rainfall deficiencies as the primary indicator of drought during the 12-month period to June 2003. The economic impact of the drought is discussed in the article *Impact of the drought on Australian production in 2002–03, Chapter 29, National accounts*.

The bushfires which occurred at the end of 2002 and the beginning of 2003 were among the most protracted and extensive since European settlement of Australia. The 2002–03 bushfire season is examined in the section *Bushfires, Chapter 24, Environment*.

# Geography of Australia

## Position and area

Australia comprises a land area of almost 7.7 million square kilometres (table 1.1). The land lies between latitudes 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 (Wilson's Promontory, Victoria) 39° 08' south. The latitudinal distance between Cape York and

South Point is about 3,180 kilometres (km), while the latitudinal distance between Cape York and South East Cape is 3,680 km. The longitudinal distance between Steep Point and Cape Byron is about 4,000 km.

The area of Australia is almost as great as that of the United States of America (excluding Alaska), about 50% greater than Europe (excluding the former USSR) and 32 times greater than the United Kingdom. Tables 1.2 and 1.3 show the area of Australia in relation to areas of other continents and selected countries.

### 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	10.4	2 137	..	100
Victoria	227 416	3.0	2 512	..	100
Queensland	1 730 648	22.5	13 347	54	46
South Australia	983 482	12.7	5 067	..	100
Western Australia	2 529 875	33.0	20 781	37	63
Tasmania	68 401	0.9	4 882	..	100
Northern Territory	1 349 129	17.5	10 953	81	19
Australian Capital Territory	2 358	(b)	..	..	100
Jervis Bay Territory	73	(b)	57	..	100
<b>Australia</b>	<b>7 692 024</b>	<b>100.0</b>	<b>59 736</b>	<b>39</b>	<b>61</b>

(a) Includes islands. (b) Less than 0.1%.

Source: Bureau of Meteorology; Geoscience Australia 2003, *Geoscience Australia, Canberra*, viewed 19 August 2003, <<http://www.ga.gov.au>>.

### 1.2 AREA OF CONTINENTS

Continent	'000 sq km
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
<b>Total landmass</b>	<b>150 100</b>

Source: *Encyclopaedia Britannica*.

### 1.3 AREA OF SELECTED COUNTRIES

COUNTRIES (SEVEN LARGEST)		'000 sq km
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		
East Timor		14
France		547
Germany		357
Indonesia		1 904
Japan		377
Malaysia		330
New Zealand		268
Papua New Guinea		462
Philippines		299
United Kingdom		242

Source: *Encyclopaedia Britannica*.

## Landforms and their history

Australia is the lowest, flattest and, apart from Antarctica, the driest of the continents. Unlike Europe and North America, where some landscapes date back to 'only' 20,000 years ago, when great ice sheets retreated, the age of landforms in Australia is generally measured in many millions of years. This fact gives Australia a very distinctive physical geography. Map 1.4 shows the elevation of the Australian continent.

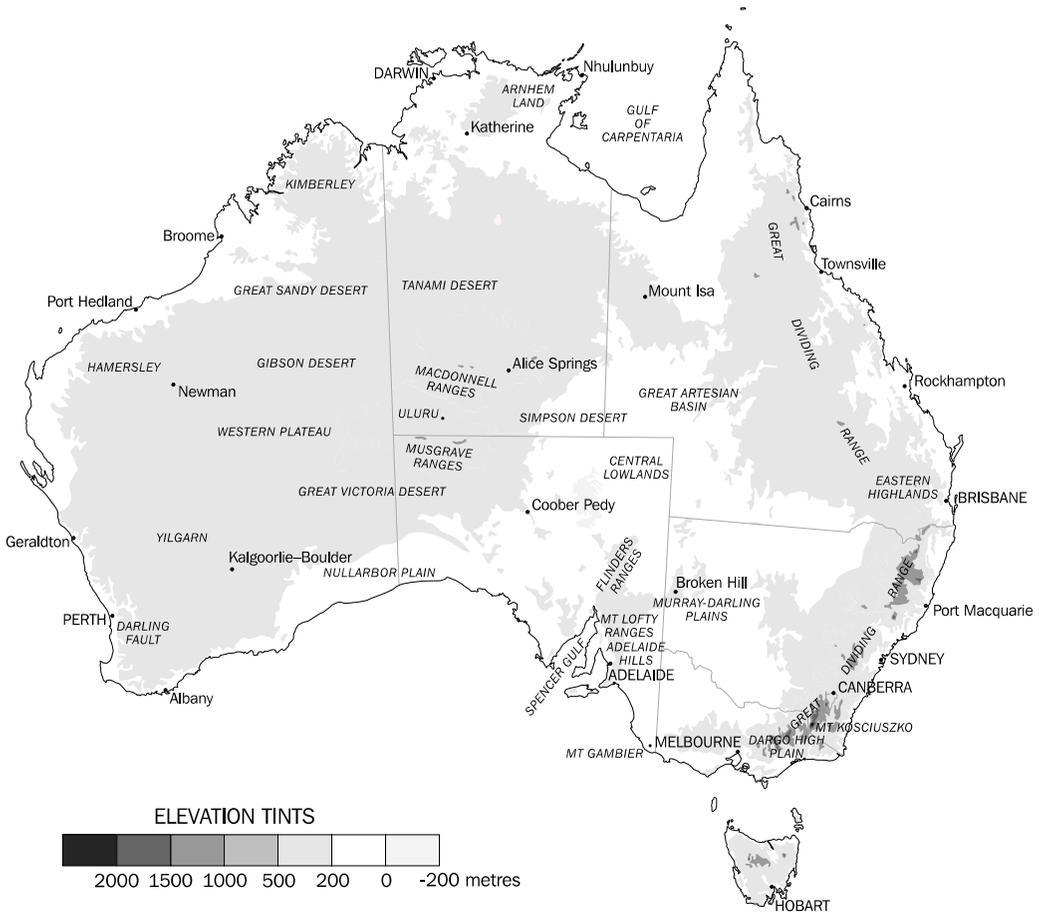
The continent can be divided into three parts:

- the Western Plateau
- the Central Lowlands
- the Eastern Highlands.

The Western Plateau consists of very old rocks (some over 3,000 million years old), and much of it has existed as a landmass for over 500 million years. Several parts have individual plateau names (e.g. Kimberley, Hamersley, Arnhem Land, Yilgarn). In the Perth area, younger rocks along a coastal strip are separated from the rest by the Darling Fault escarpment. The Nullarbor Plain is virtually an uplifted sea floor, a limestone plain of Miocene age (about 25 million years).

The Central Lowlands stretch from the Gulf of Carpentaria through the Great Artesian Basin to the Murray–Darling Plains. The Great Artesian Basin is filled with sedimentary rocks which hold water that enters in the wetter Eastern Highlands.

### 1.4 ELEVATION



Source: Australian Surveying and Land Information Group, 1996.

Much of the centre of Australia is flat, but there are numerous ranges (e.g. Macdonnells, Musgrave) and some individual mountains of which Uluru (Ayers Rock) is probably the best known. Faulting and folding in this area took place long ago. The area was worn to a plain, and the plain was uplifted and then eroded to form the modern ranges on today's plain. In looking at Uluru, one remarkable thing is not so much how it got there, but that so much has been eroded from all around to leave it there.

In the South Australian part of the Central Lowlands, fault movements are more recent, and the area can be considered as a number of blocks that have been moved up and down to form a series of ranges (Mt Lofty, Flinders Ranges) and hills (such as the Adelaide Hills), with the down-faulted blocks occupied by sea (e.g. Spencer Gulf) or lowlands including the lower Murray Plains.

The Eastern Highlands rise gently from central Australia towards a series of high plateaus, and even the highest part around Mt Kosciuszko (2,228 metres) is part of a plateau.

There are a few younger faults and folds, such as the Lake George Fault near Canberra, and the Lapstone Monocline near Sydney.

Some plateaus in the Eastern Highlands are dissected by erosion into rugged hills, and the eastern edges of plateaus tend to form high escarpments. Many of these are united to form the Great Escarpment that runs from northern Queensland to the Victorian border. Australia's highest waterfalls (Wollombi on the Macleay, Wallaman Falls on a tributary of the Herbert, Barron Falls near Cairns, and Wentworth Falls in the Blue Mountains) all occur where rivers flow over the Great Escarpment. For most of its length the Great Dividing Range (separating rivers flowing to central Australia from rivers flowing to the Pacific) runs across remarkably flat country. In eastern Victoria, however, the old plateau has been eroded into separate high plains (such as Dargo High Plain).

The present topography results from a long landscape history which can be started in the Permian, about 290 million years ago, when much of Australia was glaciated by a huge ice cap. After 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.

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 other basins). These slowly filled up and some are now sources of coal or oil. The Eastern Highlands were uplifted at about this time.

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 to a few thousand years ago in Victoria and Queensland. Australia's youngest volcano is Mt Gambier in South Australia, about 6,000 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. There have been many changes in the climate of Australia in the past, but oddly these do not seem to be due to changing latitude (associated with global-scale plate movements). Even when Australia was close to the South Pole, the climate was relatively warm and wet, and this persisted for a long time despite changes in latitude. 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 its present latitude, and the northern part was probably never arid.

Today a large part of Australia is arid or semi-arid. Sand dunes are mostly longitudinal and are aligned with dominant wind directions associated with the regular passage of high pressure cells (anticyclones). These 'highs' rotate anticlockwise and track at about 28° south in winter and 38° south in summer, resulting in predominantly south-east to easterly flows in the north and north-west to westerly flows in the south. Looking down from above, the south-east Trade Winds or 'Trades' would be those winds in the top right hand quarter of a hypothetical, stationary 'high' centred on the Australian continent.

The dunes are mostly fixed now. Stony deserts or gibber plains (covered with small stones or 'gibbers') are areas without a sand cover and occupy a larger area than the dune fields. Salt lakes occur 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. Many important finds of Aboriginal prehistory have been made in lunettes. Despite the prevalence of arid conditions today, real aridity seems to be geologically young, with no dunes or salt lakes older than a million years.

The past few million years were notable for the Quaternary ice age. There were many glacial and interglacial periods (over 20) during this time, the last glacial period occurring about 20,000 years ago. In Tasmania there is evidence of three different glaciations: the last glaciation, one sometime in the Quaternary, and one in the Tertiary. On the mainland there is evidence of only the last glaciation, and the ice then covered only 25 square kilometres, in the vicinity of Mt Kosciuszko.

The broad shape of Australia has been influenced over long periods by Earth movements associated with large tectonic processes. However, much of the detail has been carved by river erosion. A significant number of Australia's rivers, like the Diamantina River, drain inland. While they may be eroding their valleys near their highland sources, their lower courses are filling up with alluvium, and the rivers often end in salt lakes which are dry for most of the time. Other rivers reach the sea, and have dissected a broad near-coast region into plateaus, hills and valleys. Many of the features of the drainage pattern 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 the last ice age, sea level was more than 100 metres lower than it is today; the current outer reef area of the Great Barrier Reef would have been the coast at that time. The rivers tended to cut down to the lower level, especially towards the sea. When the sea level rose again, some of the lower valleys were drowned, making fine harbours — like Sydney Harbour — while others tended to fill with alluvium as the sea rose, making the typical lowland valleys around the Australian coast.

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 beaches made simply from this accumulation. In much of the east there is a characteristic

alternation of rocky headland and long beach, 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. In some areas, such as the Great Australian Bight, there is a broad continental shelf bounded by a steeper continental slope. In other areas, like south-east New South Wales around Merimbula and much of the Tasmanian coastline, the continental shelf is very narrow, sometimes coming to within 20 nautical miles of the coast. The Queensland coast is bounded by a broad plateau on which the Great Barrier Reef has grown in only the last two million years. In South Australia, the continental shelf is grooved by submarine canyons.

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

As can be inferred from the elevation and relief map (map 1.4), 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. Of the rivers of the east coast, the longest in Queensland are the Burdekin and the Fitzroy, while the Hunter is the longest coastal river of New South Wales. The longest river system in Australia is the Murray–Darling, which drains part of Queensland, the major part of New South Wales and a large part of Victoria, finally flowing into the arm of the sea known as Lake Alexandrina, on the eastern side of the South Australian coast. The length of the Murray is about 2,520 km, and the Darling and Upper Darling together are also just over 2,000 km long. The rivers of the north-west coast of Australia, for example, the Murchison, Gascoyne, Ashburton, Fortescue, De Grey, Fitzroy, Drysdale and Ord, are of considerable length. So also are those rivers in the Northern Territory, for example, the Victoria and Daly, and those on the Queensland side of the Gulf of Carpentaria, such as the Gregory, Leichhardt, Cloncurry, Gilbert and Mitchell. The rivers of Tasmania have short and rapid courses, as might be expected from the configuration of the land.

There are many lake types in Australia, the largest being drainage swamps from the internal rivers. In dry seasons these lakes finally become beds of salt and dry mud. The largest are Lake Eyre 9,500 square kilometres, Lake Torrens 5,900 square kilometres and Lake Gairdner 4,300 square kilometres.

Other lake types are glacial, most common in Tasmania; volcanic crater lakes, predominantly in Victoria and Queensland; fault angle lakes, of which Lake George near Canberra is a good example; and coastal lakes formed by marine damming of valleys.

## 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. Widely known as 'The Dry Continent', the landmass is relatively arid, with 80% having a median rainfall less than 600 millimetres (mm) per year and 50% less than 300 mm (the average is 450 mm). Seasonal fluctuations can be large, with temperatures ranging from above 50 °C to well below zero. However, extreme minimum temperatures are not as low as those recorded in other continents, due to Australia's relatively low latitude, the lack of high mountains to induce orographic cooling (which is in the order of  $-0.6$  °C per 100 metres increase in elevation) and because of the large expanse of relatively warm surrounding oceans.

Although the climate can be described as predominantly continental, the insular nature of the landmass produces modifications to the general continental pattern.

Australia experiences many of nature's more extreme phenomena, particularly droughts, floods, tropical cyclones, severe storms and bushfires.

### Climatic controls

The generally low relief of Australia is evident in the elevation and relief map (map 1.4). Compared to other continents, Australia causes little obstruction to the atmospheric systems which control the climate. A notable exception is the eastern uplands which modify the atmospheric flow, sometimes causing the 'Easterly Dip' which is evident in some surface pressure charts.

In the winter half of the year (May–October) anticyclones, or high pressure systems, pass from west to east across the continent and may remain almost stationary over the interior for several days. These anticyclones may be 4,000 km wide and, in the Southern hemisphere, rotate anticlockwise. Northern Australia is thus influenced by mild, dry south-east winds, and southern Australia experiences cool, moist westerly winds. The westerlies, and the frontal systems associated with extensive depressions (lows, sometimes called extra-tropical cyclones) travelling over the Southern Ocean, have a controlling influence on the climate of southern Australia during the winter season, causing rainy periods. Periodic north-west cloud bands in the upper levels of the atmosphere over the continent may interact with southern systems to produce rainfall episodes, particularly over eastern areas. Cold outbreaks, particularly in south-east Australia, occur when cold air of Southern Ocean origin is directed northwards by intense depressions having diameters up to 2,000 km. Cold fronts associated with the southern depressions, or with secondary depressions over the Tasman Sea, may produce strong winds and large day-to-day variations in temperature in southern areas, particularly in south-east coastal regions.

In the summer half of the year (November–April) the anticyclones travel from west to east on a more southerly track across the southern fringes of Australia, directing easterly winds generally over the continent. Fine, warmer weather predominates in southern Australia with the passage of each anticyclone. Heat waves occur when there is an interruption to the eastward progression of the anticyclone ('blocking') and winds back northerly and later north-westerly. Northern Australia comes under the influence of summer disturbances associated with the southward intrusion of warm moist monsoonal air from north of the intertropical convergence zone, resulting in a hot rainy season. Southward dips of the monsoonal low pressure trough sometimes spawn tropical depressions, and may prolong rainy conditions over northern Australia for up to three weeks at a time.

Tropical cyclones are strong, well-organised low pressure systems of tropical origin where average surface winds are expected to reach at least gale force (speed equivalent of 63–87 km/h) — gusts can be up to 50% higher than the average. Winds associated with severe tropical cyclones reach at least hurricane force (119 km/h) — the highest wind speed recorded in Australia was 267 km/h, which occurred with Tropical Cyclone Vance

(March 1999). Tropical cyclones develop over the seas around northern Australia where sea surface temperatures exceed 26 °C in summer. Interestingly, tropical cyclones do not usually form within 5° (or so) north or south of the Equator because the Coriolis Force associated with the rotation of the Earth is close to zero in this zone and this 'twist' is important for cyclone formation. Their frequency of occurrence and the tracks they follow vary greatly from season to season. On average, about three cyclones per season directly affect the Queensland coast, and about three affect the north and north-west coasts. Tropical cyclones approaching the coast usually produce very heavy rain and high winds in coastal areas. Some cyclones move inland, losing intensity but still producing widespread heavy rainfall and, occasionally, moderate to severe damage.

The climate of eastern and northern Australia is influenced by the Southern Oscillation (SO), a see-sawing of atmospheric pressure between the northern Australian–Indonesian region and the central Pacific Ocean. This Oscillation is one of the most important causes of climatic variation after the annual seasonal cycle over eastern and northern Australia. The strength of the SO is defined by the Southern Oscillation Index, which is a measure of the difference in sea level atmospheric pressure between Tahiti in the central Pacific and Darwin in northern Australia. At one extreme of the Oscillation, the pressure is abnormally high at Darwin and abnormally low at Tahiti. Severe and widespread drought over eastern and northern Australia generally accompanies this extreme. These conditions generally commence early in the year, last for about 12 months, and have a recurrence period of two to seven years.

The above extreme is sometimes immediately preceded or followed by the opposite extreme where pressures at Darwin are abnormally low and those at Tahiti are abnormally high. In this case, rainfall is generally above average over eastern and northern Australia.

The SO is linked to sea surface temperatures (SSTs) in the Pacific Ocean. Dry extreme SO years are accompanied by above normal SSTs in the central and/or eastern equatorial Pacific and vice versa. Dry extreme years are called El Niño years (El Niño is 'baby boy' in Spanish). Wet extreme

years are called La Niña years (La Niña is 'baby girl'). Continuing research into the El Niño/La Niña phenomenon is revealing the connectivity between atmospheric circulation, SSTs, currents (surface as well as deep currents) and their interaction with the landmasses. An article following the *Geography and climate* chapter of *Year Book Australia 1998* provides further detail.

## Rainfall and other precipitation

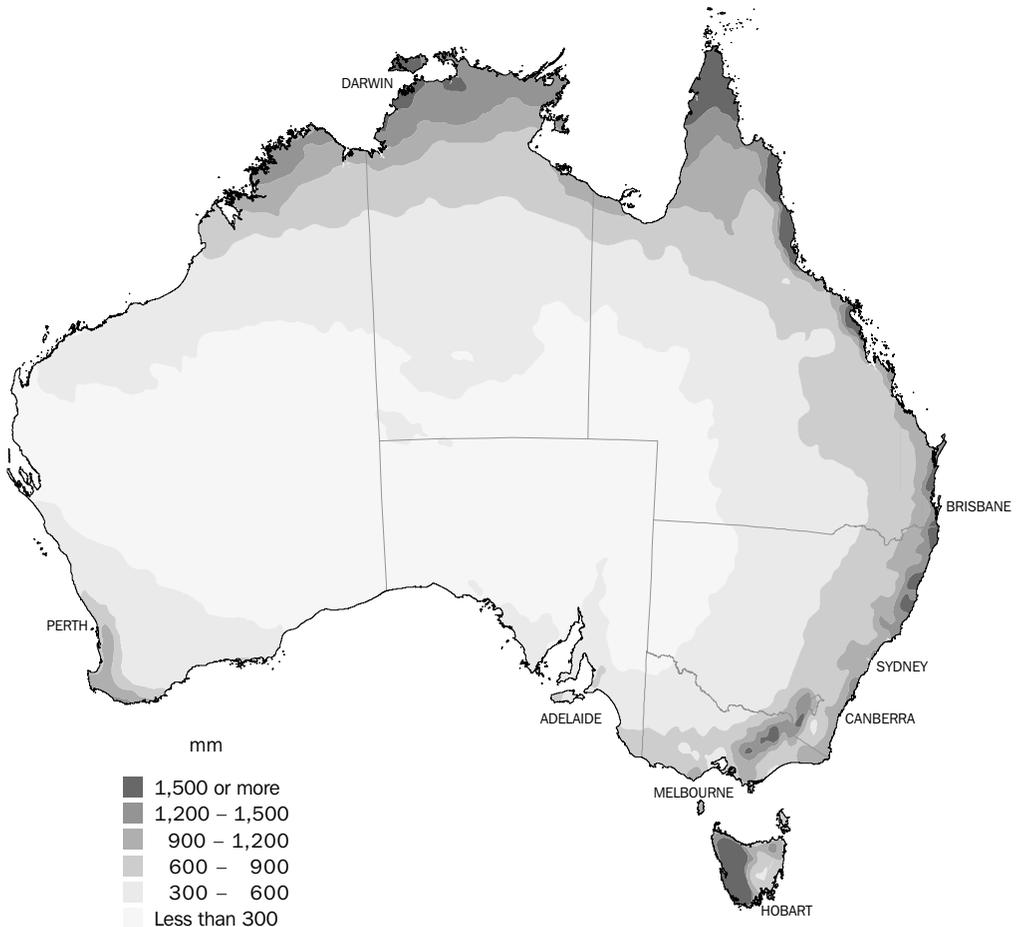
### Annual

The area of lowest rainfall is in the vicinity of Lake Eyre in South Australia, where the median annual rainfall is only about 100 mm. Another very low rainfall area is in Western Australia in the region of the Giles-Warburton Range, which has a median annual rainfall of about 150 mm. A vast region, extending from the west coast near Shark Bay across the interior of Western Australia and South Australia to south-west Queensland and north-west New South Wales, has a median annual rainfall of less than 200 mm. This region is not normally exposed to moist air masses for extended periods and rainfall is irregular, averaging only one or two days per month. However, in favourable synoptic situations, which occur infrequently over extensive parts of the region, up to 400 mm of rain may fall within a few days and cause widespread flooding.

The region with the highest median annual rainfall is the east coast of Queensland between Cairns and Cardwell, where Happy Valley has a median of 4,436 mm (43 years from 1956 to 2000) and Babinda a median of 4,092 mm (84 years from 1911 to 2000). The mountainous region of western Tasmania also has a high annual rainfall, with Lake Margaret having a median of 3,565 mm (76 years to 1987).

The Snowy Mountains area in New South Wales also has a particularly high rainfall. While there are no gauges in the wettest area, on the western slopes above 1,800 metres elevation, runoff data suggest that the median annual rainfall in parts of this region exceeds 3,000 mm. Small pockets with median annual rainfall exceeding 2,500 mm also exist in the mountainous areas of north-east Victoria and some parts of the east coastal slopes. Map 1.5 shows average annual rainfall over the Australian continent.

## 1.5 AVERAGE ANNUAL RAINFALL



Source: Bureau of Meteorology.

### Seasonal

As outlined earlier, the rainfall pattern of Australia is strongly seasonal in character, with a winter rainfall regime in the south and a summer regime in the north.

The dominance of rainfall over other climatic elements in determining the growth of specific plants in Australia has led to the development of a climatic classification based on two main parameters, median annual rainfall and the incidence of seasonal rainfall.

Evaporation and the concept of rainfall effectiveness are taken into account to some extent in this classification, by assigning higher

median annual rainfall limits to the summer zones than to the corresponding uniform and winter zones. The main features of the seasonal rainfall are:

- marked wet summer (the 'Monsoon') and dry winter of northern Australia
- wet summer and relatively dry winter of south-eastern Queensland and north-eastern New South Wales
- uniform rainfall in south-eastern Australia — much of New South Wales, parts of eastern Victoria and southern Tasmania

- marked wet winter and dry summer of south-west Western Australia and, to a lesser extent, much of the remainder of southern Australia directly influenced by westerly circulation (sometimes called a 'Mediterranean' climate)
- an arid area comprising about half the continent extending from the north-west coast of Western Australia across the interior and reaching the south coast at the head of the Great Australian Bight.

Darwin shows the rainfall distribution pattern typical of the wet summer and dry winter seen in far northern Australia, and Brisbane the wet summer/relatively dry winter typical of south-eastern Queensland. By contrast, Adelaide and Perth show the wet winter/dry summer pattern whereas Sydney, Melbourne, Canberra and Hobart show a relatively uniform pattern of rainfall throughout the year. Alice Springs shows a low rainfall pattern throughout the year typical of arid inland areas.

Table 1.6 shows the monthly rainfall for all capital cities, as well as for Alice Springs and Davis Base in Antarctica.

Precipitation at Davis Base is mainly as snow, but is measured as water after melting. The pattern reflects the very low precipitation levels on the Antarctic continent.

**1.6 MONTHLY RAINFALL AND AVERAGE TEMPERATURES, Capital cities, Alice Springs and Davis Base(a)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MEAN DAILY MAXIMUM TEMPERATURE (°C)												
Sydney	26.3	26.3	25.2	22.8	19.9	17.4	16.9	18.1	20.2	22.3	23.9	25.6
Melbourne	26.0	26.6	23.9	20.0	16.5	13.4	12.9	14.2	16.2	18.9	21.5	24.3
Brisbane	29.1	28.9	28.1	26.3	23.5	21.2	20.6	21.7	23.8	25.6	27.3	28.6
Adelaide	27.9	28.1	25.3	22.0	18.4	15.9	14.9	15.8	17.9	20.9	23.6	25.5
Perth	31.5	31.8	29.5	25.4	21.5	18.8	17.7	18.3	20.1	22.4	25.5	28.8
Hobart	22.3	22.3	20.6	18.1	15.1	12.8	12.3	13.3	15.2	17.2	18.8	20.5
Darwin	31.7	31.4	31.8	32.6	32.0	30.6	30.4	31.3	32.5	33.1	33.2	32.5
Canberra	27.7	27.0	24.4	19.8	15.3	12.1	11.2	12.9	16.0	19.2	22.4	26.0
Alice Springs	36.2	35.0	32.6	27.9	22.9	19.8	19.6	22.4	27.0	30.8	33.6	35.4
Davis Base(a)	3.0	-0.4	-5.8	-10.5	-12.8	-12.4	-14.4	-14.1	-13.3	-9.1	-2.6	2.3
MEAN DAILY MINIMUM TEMPERATURE (°C)												
Sydney	18.6	18.9	17.3	13.9	10.8	8.4	6.9	7.9	10.1	13.0	15.1	17.3
Melbourne	13.5	14.1	12.6	10.1	8.3	6.1	5.2	5.8	7.0	8.5	10.1	11.9
Brisbane	20.9	20.9	19.5	16.9	13.8	10.9	9.5	10.0	12.5	15.6	18.0	19.8
Adelaide	15.7	16.0	14.3	11.6	9.5	7.6	6.9	7.5	8.8	10.6	12.5	14.4
Perth	16.9	17.4	15.9	13.0	10.4	9.1	8.1	8.1	8.9	10.2	12.5	14.8
Hobart	11.9	12.0	10.6	8.7	6.5	4.5	4.0	4.5	5.9	7.4	9.0	10.6
Darwin	24.8	24.7	24.5	24.0	22.1	20.0	19.3	20.6	23.1	25.0	25.4	25.3
Canberra	13.0	12.9	10.7	6.6	3.2	0.9	-0.2	0.9	3.1	6.0	8.6	11.2
Alice Springs	21.4	20.7	17.5	12.6	8.4	5.3	4.1	6.1	10.2	14.8	17.9	20.2
Davis Base(a)	-1.3	-4.6	-11.0	-16.2	-19.0	-18.7	-20.5	-20.6	-20.2	-15.4	-7.8	-2.2
MEAN RAINFALL (mm)												
Sydney	100.4	110.6	121.7	106.4	98.1	123.0	69.3	80.8	62.2	72.9	82.0	74.9
Melbourne	45.7	40.7	38.7	46.6	45.6	40.6	36.9	47.2	50.7	58.6	60.1	49.1
Brisbane	157.7	171.7	138.5	90.4	98.8	71.2	62.6	42.7	34.9	94.4	96.5	126.2
Adelaide	17.8	19.0	21.8	36.1	55.6	55.1	62.7	50.6	46.8	39.9	24.8	24.3
Perth	9.1	15.3	15.3	41.1	103.9	171.2	162.2	119.5	71.0	46.8	25.4	11.2
Hobart	40.5	36.9	36.5	45.2	36.4	29.0	46.5	47.3	39.9	48.2	44.6	56.2
Darwin	425.8	354.0	321.7	101.6	21.0	1.2	1.0	5.9	15.6	72.7	139.7	249.4
Canberra	61.5	53.6	52.6	49.5	48.6	39.7	42.0	47.2	52.6	65.6	64.5	53.1
Alice Springs	38.7	43.7	33.6	18.2	19.8	14.6	14.2	10.3	8.9	21.8	25.1	36.5
Davis Base(a)	1.8	3.7	9.9	9.7	11.8	9.2	8.4	7.1	4.5	4.4	2.4	2.0

(a) Antarctica.

Source: Bureau of Meteorology 2003, Bureau of Meteorology, Melbourne, viewed 19 August 2003, <<http://www.bom.gov.au>>.

## Rainday frequency

A rainday occurs when more than 0.2 mm of rain falls in 24 hours, usually from 9 am to 9 am the next day. The frequency of raindays exceeds 150 per year in much of Tasmania (with a maximum of over 250 in western Tasmania), southern Victoria, parts of the north Queensland coast and in the extreme south-west of Western Australia. Over most of the continent the frequency is less than 50 raindays per year. The area of low rainfall with high variability, extending from the north-west coast of Western Australia through the interior of the continent, has less than 25 raindays per year. In the high rainfall areas of northern Australia, the number of raindays is about 80 per year, but heavier falls occur in this region than in southern regions.

The highest daily rainfalls for each state/territory are listed in table 1.7, and the highest annual rainfalls are listed in table 1.8.

**1.7 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
Club Terrace	285	24.6.1998
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
Roebuck Plains	568	6.1.1917
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 am to 9 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 pm on the 3rd to 3 pm on the 4th. No observation was made at 9 am on the 4th.

Source: Bureau of Meteorology.

**1.8 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

(a) State Electricity Commission.

Source: Bureau of Meteorology.

## Thunderstorms and hail

A thunderday at a given location is a calendar day on which thunder is heard at least once. The average annual number of thunderdays varies from 88 per year near Darwin to less than 10 per year over parts of the southern regions.

Convictional processes during the summer wet season cause high thunderstorm incidence in northern Australia. The generally high incidence of thunderdays (40–60 annually) over the eastern upland areas is caused mainly by orographic uplift of moist air streams.

Hail, mostly of small size (less than 10 mm diameter), occurs with winter–spring cold frontal activity in southern Australia. Summer thunderstorms, particularly over the uplands of eastern Australia, sometimes produce large hail (greater than 10 mm diameter). Large hail capable of piercing light-gauge galvanised iron occurs at irregular intervals and sometimes causes widespread damage.

## Snow

Generally, 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 these seasons. The area, depth and duration are highly variable. Light snowfalls can occur in these areas at any time of year. In some years, snow falls in the altitude range of 500–1,000 metres. Snowfalls at levels below 500 metres are occasionally experienced in southern Australia, particularly in the foothill areas of Tasmania and Victoria, but falls are usually light and short lived. In some seasons, parts of the eastern uplands above 1,000 metres from Victoria to south-eastern Queensland have been covered with snow for several weeks. On sheltered slopes around Mt Kosciuszko (2,228 metres) small areas of snow may persist through summer, but there are no permanent snowfields.

## 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 may 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. The months with the highest average temperature are January or February in the south and December in the north (except in the extreme north and north-west where it is November). The slightly lower temperatures of mid-summer in the north are due to the increase in cloud during the wet season.

Average monthly maximum and minimum temperatures for all capital cities, and also for Alice Springs and Davis Base in Antarctica, are shown in table 1.6.

Temperatures in Darwin in tropical northern Australia are relatively constant throughout the year. In other cities, there is a greater seasonal variation between summer and winter months. The seasonal variation in temperature, as well as the difference between maximum and minimum value in any month, is greater for the inland cities of Canberra and Alice Springs than it is for the coastal cities, where proximity to the ocean moderates temperature extremes.

### Average monthly maxima

In January, average maximum temperatures exceed 35 °C over a vast area of the interior and exceed 40 °C over appreciable areas of the north-west. The consistently hottest part of Australia in terms of summer maxima is around Marble Bar in Western Australia (150 km south-east of Port Hedland) where the average is 41 °C and daily maxima during summer may exceed 40 °C consecutively for several weeks at a time.

In July, a more regular latitudinal distribution of average maxima is evident. Maxima range from 30 °C near the north coast to 5 °C in the alpine areas of the south-east.

### Average monthly minima

In January, average minima range from 27 °C on the north-west coast to 5 °C in the alpine areas of the south-east. In July, average minima fall below 5 °C in areas south of the tropics (away from the coasts). Alpine areas record the lowest temperatures; the July average low is –5 °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 stations in this region have exceeded 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, and the lower moisture levels in summer compared with northern Australia.

Most other stations in mainland Australia, except those near parts of the Queensland or Northern Territory coasts or above 500 metres elevation, have extreme maxima between 43 and 48 °C. Most Tasmanian stations away from the north coast have extreme maxima between 35 and 40 °C. The lowest extreme maxima are found in northern Tasmania (e.g. 29.5 °C at Low Head) and at high elevations (e.g. 27.0 °C at Thredbo in New South Wales).

While 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, and 49.4 °C at Whyalla and 47.9 °C at Ceduna in South Australia.

Extreme maximum temperatures recorded at selected stations, including the highest recorded in each state/territory, are shown in table 1.9.

### 1.9 EXTREME MAXIMUM TEMPERATURES

Station	°C	Date
New South Wales		
Wilcannia	50.0	11.1.1939
Victoria		
Swan Hill	49.4	18.1.1908
Queensland		
Cloncurry	53.1	16.1.1889
South Australia		
Oodnadatta	50.7	2.1.1960
Western Australia		
Mardie	50.5	20.2.1998
Tasmania		
Bushy Park	40.8	26.12.1945
Hobart	40.8	4.1.1976
Northern Territory		
Finke	48.3	1 & 2.1.1960
Australian Capital Territory		
Canberra (Acton)	42.8	11.1.1939

Source: Bureau of Meteorology.

### 1.10 EXTREME MINIMUM TEMPERATURES

Station	°C	Date
New South Wales		
Charlotte Pass	-23.0	18.6.1994
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		
Booylgoo Springs	-6.7	12.7.1969
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.

### Extreme minima

The lowest temperatures in Australia have been recorded in the Snowy Mountains, New South Wales, where Charlotte Pass (elevation 1,760 metres) recorded  $-23.0^{\circ}\text{C}$  on 18 June 1994 (table 1.10). Outside the Snowy Mountains, the lowest extreme minima on the Australian mainland are found above 500 metres elevation in the tablelands and ranges of New South Wales, eastern Victoria and southern Queensland. Many stations in this region have recorded  $-10^{\circ}\text{C}$  or lower, including  $-14.6^{\circ}\text{C}$  at Gudgenby, Australian Capital Territory and  $-14.5^{\circ}\text{C}$  at Woolbrook, New South Wales. Temperatures below  $-10^{\circ}\text{C}$  have also been recorded in central Tasmania. At lower elevations, most inland places south of the tropics have extreme minima between  $-3$  and  $-7^{\circ}\text{C}$ , and such low temperatures have also occurred in favoured locations within a few kilometres of southern and eastern coasts, such as Sale, Victoria ( $-5.6^{\circ}\text{C}$ ), Bega, New South Wales ( $-8.1^{\circ}\text{C}$ ), Grove, Tasmania ( $-7.5^{\circ}\text{C}$ ) and Taree, New South Wales ( $-5.0^{\circ}\text{C}$ ).

In the tropics, extreme minima below  $0^{\circ}\text{C}$  have been recorded at many places away from the coast, as far north as Herberton, Queensland ( $-5.0^{\circ}\text{C}$ ). Some locations near tropical coasts, such as Mackay ( $-0.8^{\circ}\text{C}$ ), Townsville, Queensland ( $0.1^{\circ}\text{C}$ ) and Kalumburu Station, Northern Territory ( $0.3^{\circ}\text{C}$ ) have also recorded temperatures near  $0^{\circ}\text{C}$ . In contrast, some exposed near-coastal locations, such as Darwin, have never fallen below  $10^{\circ}\text{C}$ , and Thursday Island, in the Torres Strait, has an extreme minimum of  $16.1^{\circ}\text{C}$ .

### Heat waves

Periods with a number of successive days having a temperature higher than  $40^{\circ}\text{C}$  are relatively common in summer over parts of Australia. With the exception of the north-west coast of Western Australia, however, most coastal areas rarely experience more than three successive days of such conditions. The frequency increases inland, and periods of up to 10 successive days have been recorded at many inland stations. This figure increases to more than 20 days in parts of western Queensland and north-west Western Australia. The central part of the Northern Territory and the Marble Bar–Nullagine area of Western Australia have recorded the most prolonged heat waves. Marble Bar is the only known station in the world where temperatures of more than  $37.8^{\circ}\text{C}$  ( $100$  degrees Fahrenheit) have been recorded on as many as 161 consecutive days (30 October 1923 to 7 April 1924).

Heat waves are experienced in the coastal areas from time to time. During 11–14 January 1939, for example, a severe heat wave affected south-eastern Australia: Melbourne had a record of  $45.6^{\circ}\text{C}$  on the 13th and Sydney a record of  $45.3^{\circ}\text{C}$  on the 14th. This heatwave also set record high temperatures in many other centres in New South Wales, Victoria and South Australia.

The Kimberley district of Western Australia is the consistently hottest part of Australia in terms of annual average maximum temperature. Wyndham, for example, has an annual average maximum of  $35.6^{\circ}\text{C}$ .

## Other aspects of climate

### Frost

The frequency of frost, which can cause serious losses of agricultural crops, depends on a number of factors. In coastal areas the relatively warm ocean temperatures ameliorate those on land, while distance from the Equator and elevation above sea level are major cooling influences. In addition, variations in topography can lead to local effects such as the accumulation of cold air in frost hollows. Hence frost hazard is greatest in areas which are away from the coast, are at relatively high elevations and have complex terrain which allows cold air drainage down slopes.

Parts of Australia most subject to frost are the eastern uplands from north-eastern Victoria to the western Darling Downs in southern Queensland where there may be more than 10 nights a month with readings of zero degrees Celsius (or under) for three to five months of the year. On Tasmania's Central Plateau similar conditions occur for three to six months of the year. Frosts may occur within a few kilometres of the coasts except in the Northern Territory and most of the north Queensland coasts.

Frosts may occur at any time of the year over most of Tasmania, large areas of the tablelands of New South Wales and much of inland Victoria, particularly the north-east. Frosts start in April and end in October over most of the interior of the continent, and on the highlands of Queensland as far north as the Atherton Plateau. Minimum temperatures below zero degrees Celsius can be experienced in most of the subtropical interior in June and July.

The median frost period over the continent varies from over 200 days per year in the south-eastern uplands areas south of the Hunter Valley, New South Wales, to none in northern Australia. The annual frost period generally decreases from about 100 days inland to below 50 days towards the coast in the southern regions of the continent, but there is widespread local variation. In Tasmania the frost period exceeds 300 days on the uplands and decreases to 100 days near the coast.

### Humidity

Australia is a dry continent in terms of the water vapour content or humidity of the air, and this element may be compared with evaporation to which it is related. Moisture content can be expressed by a number of parameters, of which

the most commonly known is relative humidity. This can be thought of as the relative evaporating power of the air; when the humidity is low, a wet surface, like our skin, can evaporate freely. When it is high, evaporation is retarded. People can feel this as discomfort or even stress as the body's ability to perspire (and hence cool) decreases with increasing relative humidity. The combination of high temperature and high humidity is potentially dangerous for people who are active in 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, notably towards the northern coast in the dry season (May–October).
- The coastal fringes are comparatively moist, although this is less evident along the north-west coast of Western Australia where continental effects are marked.
- In northern Australia, the highest values 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).

### Global radiation

Global (short wave) radiation includes that radiation energy reaching the ground directly from the sun and that received indirectly from the sky, scattered downwards by clouds, dust particles, etc.

A high correlation exists between daily global radiation and daily hours of sunshine. On the north-west coast around Port Hedland, Western Australia, where average daily global radiation is the highest for Australia (640 milliwatt hours), average daily sunshine is also highest, being approximately 10 hours. Sunshine is more dependent on variations in cloud coverage than is global radiation, since the latter includes diffuse radiation from the sky as well as direct radiation from the sun. An example is Darwin where, in the dry month of July, sunshine approaches twice that of the wet (cloudy) month of January, but global radiation amounts for the two months are comparable.

## Sunshine

Sunshine here refers to bright or direct sunshine. Australia receives relatively large amounts of sunshine although seasonal cloud formations have a notable effect on its spatial and temporal distribution. Cloud cover reduces both incoming solar radiation and outgoing long wave radiation, and thus affects sunshine, air temperature and other climatic elements on the Earth's surface.

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; this amount is only 40% of the total possible per year (about 4,380 hours).

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.

## Cloud

Seasonal changes in cloudiness vary with the distribution of rainfall. In the southern parts of the continent, particularly in the coastal and low-lying areas, the winter months are generally more cloudy 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 favours the physical processes resulting in this type of cloud. Particularly strong seasonal variability of cloud cover exists in northern Australia where skies are clouded during the summer wet season and mainly cloudless during the winter dry season. Cloud coverage 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 fog depends on the occurrence of favourable meteorological elements — mainly temperature, humidity, wind and cloud cover. The nature of the local terrain is important for the development of fog and there is a tendency for this phenomenon to persist in valleys and hollows. The incidence of fog may vary significantly over distances as short as one kilometre.

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. Incidence is much greater in the colder months, particularly in the eastern uplands. Fog may persist during the day, but rarely until the afternoon over the interior. 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 in the period May to August. Brisbane averages 20 days of fog per year. Darwin averages only two days per year, in the months of July and August.

## Winds

The mid-latitude anticyclones are the chief determinants of Australia's two main prevailing wind streams. In relation to the west-east axes of the anticyclones these streams are easterly to the north and westerly to the south. The cycles of development, motion and decay of low-pressure systems to the north and south of the anticyclones result in diversity of wind-flow patterns. Wind variations are greatest around the coasts where diurnal land and sea-breeze effects are important.

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. An example of this channelling is the high frequency of north-west winds at Hobart caused by the north-west to south-east orientation of the Derwent River Valley.

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 recorded in Australia have been associated with tropical cyclones. The highest recorded gust was 267 km/h at Learmonth, Western Australia on 22 March 1999 (occurring with Tropical Cyclone Vance); gusts reaching 200 km/h have been recorded on several occasions in northern Australia with cyclone visitations. The highest gusts recorded at Australian capitals were 217 km/h at Darwin and 156 km/h at Perth.

## 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 parameters such as evaporation and soil moisture are significant, even dominant in some situations.

Demands for water are very diverse, hence the actual declaration of drought conditions for an area will generally also depend on the effects of a naturally occurring water deficit on the principal local industries.

Since the 1860s there have been 10 major Australian droughts. Some of these major droughts could be described as periods consisting of a series of dry spells of various lengths, overlapping in time and space, and totalling up to about a decade. The drought periods of 1895–1903 (the so-called ‘Federation drought’), 1958–68, 1982–83 and 1991–95 were the most devastating in terms of their extent and effects on primary production. The latter drought resulted in a possible \$5b cost to Australia’s economy, and \$590m in drought relief by the Commonwealth Government. The remaining major droughts occurred in 1864–66 (and 1868), 1880–86, 1888, 1911–16, 1918–20 and 1939–45.

In this same period, several droughts of lesser severity caused significant losses over large areas of some states. They occurred in 1922–23 and 1926–29, 1933–38, 1946–49, 1951–52, 1970–72, 1976 and 1997–2000.

South-eastern Australia (New South Wales, southern Queensland, Victoria, Tasmania and the settled parts of South Australia) contains about 75% of the nation’s population, and droughts affecting this region have a markedly adverse impact on the economy. There have been nine severe droughts in south-eastern Australia since 1888, and these were encompassed within the major Australian droughts specified above, except for the severe drought in 1972. Drought definitions, and the area of coverage and length of droughts, together with related information, may be obtained from the article *Drought in Australia* in *Year Book Australia 1988*.

## Floods

Widespread flood rainfall may occur anywhere in Australia, but it has a higher incidence in the north and in the eastern coastal areas. It is most economically damaging along the shorter streams flowing from the eastern uplands eastward to the seaboard of Queensland and New South Wales. These flood rains are notably destructive in the more densely populated coastal river valleys of New South Wales — the Tweed, Richmond, Clarence, Macleay, Hunter and Nepean–Hawkesbury — all of which experience relatively frequent flooding. Although chiefly caused by summer rains, they may occur in any season.

The great Fitzroy and Burdekin river basins of Queensland receive flood rains during the summer wet seasons. Much of the run-off due to heavy rain in north Queensland west of the eastern uplands flows southward through the normally dry channels of the network of rivers draining the interior lowlands into Lake Eyre. This widespread rain may cause floods over an extensive area, but it soon seeps away or evaporates, occasionally reaching the lake in quantity. The Condamine and other northern tributaries of the Darling also carry large volumes of water from flood rains south through western New South Wales to the Murray, and flooding occurs along their courses at times.

Flood rains occur at irregular intervals in the Murray–Murrumbidgee system of New South Wales and Victoria, the coastal streams of southern Victoria and the north coast streams of Tasmania.

## Water resources

Rainfall, or the lack of it, is the most important single factor determining land use and rural production in Australia. The scarcity of both surface water and groundwater resources, together with the low rates of precipitation which restrict agriculture (quite apart from economic factors), has led to extensive programs to regulate supplies by construction of dams, reservoirs, large tanks and other storages.

The major topographical feature affecting the rainfall and drainage patterns in Australia is the absence of high mountain barriers. Australia’s topographical features encompass sloping tablelands and uplands along the east coast Main Divide, the low plain and marked depression in the interior, and the Great Western Plateau.

Only one-third of the Australian land area drains directly to the ocean, mainly on the coastal side of the Main Divide and inland with the Murray–Darling system. With the exception of the latter, most rivers draining to the ocean are comparatively short, but account for the majority of the country’s average annual discharge. Surface drainage is totally absent from some arid areas of low relief.

Australia’s large area (just under 7.7 million square kilometres) and latitudinal range (3,680 km) have resulted in climatic conditions ranging from alpine to tropical. Two-thirds of the continent are arid or semi-arid, although good rainfalls (over 800 mm annually) occur in the northern monsoonal belt

under the influence of the Australian–Asian monsoon, and along the eastern and southern highland regions under the influence of the great atmospheric depressions of the Southern Ocean. The effectiveness of the rainfall is greatly reduced by marked alternation of wet and dry seasons, unreliability from year to year, high temperatures and high potential evaporation.

The availability of water resources controls, to a large degree, the possibility and density of settlement; this in turn influences the quality of the water through production and disposal of waste. Most early settlements were established on the basis of reliable surface water supplies and, as a result, Australia's population is concentrated along the coast, mainly in the comparatively fertile, well-watered east, south-east and far south-west.

As settlement spread into the dry inland grazing country, the value of reliable supplies of underground water was realised. Observations of the disappearance of large quantities of the rainfall precipitated on the coastal ranges of eastern Australia eventually led to the discovery of the Great Artesian Basin which has become a major asset to the pastoral industry. Development, however, has not been without costs. Significant environmental degradation and deterioration in water quality are becoming evident. Table 1.12 summarises Australia's major groundwater resources.

Permanent rivers and streams flow in only a small part of the continent. The average annual discharge of Australian rivers has been recently assessed at 387,000 gegalitres, of which 100,000 gegalitres are now estimated to be exploitable on a sustained yield basis. This is small in comparison with river flows on other continents.

In addition, there is a pronounced concentration of run-off in the summer months in northern Australia, while the southern part of the continent has a distinct, if somewhat less marked, winter maximum.

Even in areas of high rainfall, large variability in flow means that, for local regional development, most streams must be regulated by surface storage. However, in many areas evaporation is so great that storage costs are high in terms of yield. Extreme floods also add greatly to the cost of water storage, because of the need for adequate spillway capacity.

Table 1.11 provides a broad comparison of rainfall and run-off by continent. Map 1.13 shows the location of Australia's Drainage Divisions, and table 1.14 summarises Australia's surface water resources by Drainage Division. The Drainage Division with the highest intensity of run-off is Tasmania with 11.8% of the total from only 0.9% of the area. Conversely, the vast area of the Western Plateau (2,450,000 square kilometres, approximately 32% of Australia) has no significant run-off at all.

### 1.11 RAINFALL AND RUN-OFF OF THE CONTINENTS

Continent	Average yearly rainfall		Run-off	
	mm	mm	%	cubic km
Africa	690	260	38	7 900
Asia	600	290	48	13 000
Australia	465	57	12	440
Europe	640	250	39	2 500
North America	660	340	52	6 900
South America	1 630	930	57	16 700

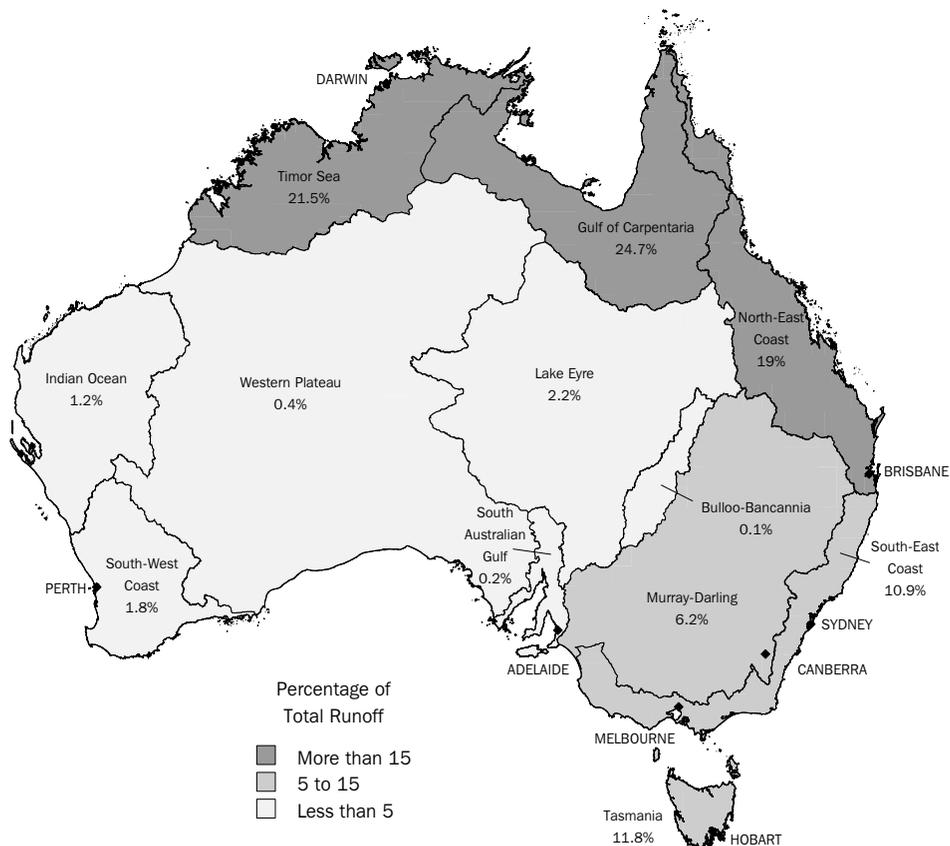
Source: O'Brien WT, McGregor A & Crawshaw B 1983, 'In-stream and Environment Issues', 'Water 2000: Consultant's Report No. 9', AGPS, Canberra.

### 1.12 MAJOR GROUNDWATER RESOURCES

State/territory	Area of aquifers sq km	Major divertible resource					Abstraction during 1983–84	
		Fresh GL	Marginal GL	Brackish GL	Saline GL	Total GL	GL	
New South Wales	595 900	881	564	431	304	2 180	242	
Victoria	103 700	469	294	69	30	862	146	
Queensland	1 174 800	1 760	683	255	144	2 840	962	
South Australia	486 100	102	647	375	86	1 210	504	
Western Australia	2 622 000	578	1 240	652	261	2 740	355	
Tasmania	7 240	47	69	8	—	124	5	
Northern Territory	236 700	994	3 380	43	10	4 420	24	
<b>Australia</b>	<b>5 226 440</b>	<b>4 831</b>	<b>6 877</b>	<b>1 833</b>	<b>835</b>	<b>14 376</b>	<b>2 238</b>	

Source: Australian Water Resources Council, 1987.

### 1.13 DRAINAGE DIVISIONS AND RUN-OFF



Source: National Land and Water Resources Audit, 2000.

### 1.14 SURFACE WATER RESOURCES

Drainage division	Area	Mean annual run-off	Mean annual run-off	Mean annual outflow	Volume diverted
	sq km	GL	%	GL	GL
North-East Coast	451 000	73 411	19.0	n.a.	3 182
South-East Coast(a)	274 000	42 390	10.9	40 591	1 825
Tasmania(b)	68 200	45 582	11.8	45 336	451
Murray-Darling(a)	1 060 000	23 850	6.2	5 750	12 051
South Australian Gulf(c)	82 300	952	0.2	797	144
South-West Coast	315 000	6 785	1.8	5 925	373
Indian Ocean	519 000	4 609	1.2	3 481	12
Timor Sea	547 000	83 320	21.5	81 461	48
Gulf of Carpentaria	641 000	95 615	24.7	24 748	52
Lake Eyre	1 170 000	8 638	2.2	n.a.	7
Bulloo-Bancannia	101 000	546	0.1	—	(d)
Western Plateau	2 450 000	1 486	0.4	n.a.	1
<b>Total</b>	<b>(e)7 680 000</b>	<b>387 184</b>	<b>100.0</b>	<b>..</b>	<b>18 147</b>

(a) South-East Coast and Murray-Darling Division. The volume diverted represents the sum of available data (NSW has not reported water use for unregulated surface water management areas). (b) Tasmanian Division. Volume diverted does not include the Hydro scheme diversions. (c) South Australian Gulf Division. Mean annual outflow includes the flow from surface water management areas Willochra Creek and Lake Torrens, which do not flow to the sea, but flow into the terminal lake, Lake Torrens. (d) Less than one gigalitre. (e) Total area differs slightly from that in table 1.1, due to improvements in mapping reflected in that table, but not in this table.

Source: National Land and Water Resources Audit, 2000.

To summarise, the mean annual run-off across Australia is 387,000 gigalitres. The portion of run-off able to be diverted for use is very low compared to that in other continents, and results from the high variability of stream flow, high rates of evaporation and the lack of storage sites on many catchments. On an Australia-wide basis, only about a quarter of the divertible resource has currently been developed for use; much of the remaining resource is available in remote regions where development is impractical and uneconomic. In areas such as the Murray–Darling Division, where water is scarce, there are few resources not yet developed, and management is focusing on greater efficiency in water use.

Water resources are assessed within a framework comprising four levels:

- The *total* water resource is the volume of water present in the environment, measured as mean annual run-off for surface water, and mean annual recharge for groundwater.
- The *divertible* resource is the portion of run-off and recharge which can be developed for use.
- The *developed* resource is the portion of the divertible resource which has been developed for use.
- Resource *utilisation* is a measure of the portion of the developed resource which is actually used.

Emphasis is given to the second level of assessment, the divertible resource, as the prime measure of the resource. The divertible resource is defined as the average annual volume of water which, using current technology, could be removed from developed or potential surface water or groundwater sources on a sustained basis, without causing adverse effects or long-term depletion of storages.

Australia's water resources are managed by a large number of resource management agencies, irrigation authorities, metropolitan water boards, local government councils and private individuals. State authorities dominate the assessment and control of water resources as, under the Commonwealth Constitution, primary responsibility for management of water rests with the individual state governments. The Commonwealth Government is responsible for matters relating to the territories, and participates indirectly through financial assistance or directly in the coordination or operation of interstate projects through bodies such as the Murray–Darling Basin Commission.

A description of the management, main storage and use of water resources across the states and territories is contained in the chapter *Water Resources* in the 1994 and earlier editions of *Year Book Australia*.

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# 2

## GOVERNMENT

*This chapter was contributed by the Department of the Parliamentary Library of the Parliament of the Commonwealth of Australia.*

Australia has a federal system of government within which there are four divisions: Commonwealth, state, territory and local government.

This chapter outlines the basic features of the Australian system of government, including:

- the constitutional basis of government
- the Sovereign
- the Governor-General
- the Commonwealth Parliament
- the Australian Government
- the Australian Public Service
- Commonwealth elections
- state government
- territory government — self-governing
- territory government — non–self governing
- local government
- the party system.

It also provides details of the ministry, and of the state and territory political leaders.

The chapter concludes with an article *The 1967 Aborigines Referendum*.

## The constitutional basis of government

Australia is a constitutional democracy based on a federal division of powers. The constitutional basis of government consists of:

- the Commonwealth Constitution, including amendments made to that Constitution
- state and territory Constitutions, including amendments
- legislation passed by the Commonwealth Parliament and the state and territory parliaments
- High Court judgments
- significant conventions of responsible government adopted from the system of government in use in the United Kingdom (the 'Westminster' system) that are in use at both the Commonwealth and state levels of government.

### Commonwealth Constitution

The national Constitution is found in the *Commonwealth of Australia Constitution Act 1900*, a British Act that became law in July 1900 and came into force on 1 January 1901.

Amendment of the written Commonwealth Constitution is by Act of Parliament followed by public referendum. Any proposed law for the alteration of the Constitution must be passed by an absolute majority of each House of Parliament (except in circumstances specified in section 128 of the Constitution which permits a referendum to proceed if passed by only one chamber). It must also be submitted to a referendum of the electors in each state and territory. An amendment must be approved by a majority of the voters in a majority of the states and by a majority of all voters.

Since 1901, 44 proposals have been submitted to referenda. The consent of the electors has been given in regard to 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
- 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 (for state and territory government, see later sections).

## The Sovereign

Since 7 February 1952, the Australian Sovereign has been Queen Elizabeth the Second.

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.

### Powers 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
- appoint and summon executive councillors, who hold office during the Governor-General's pleasure
- appoint ministers of state for the Commonwealth of Australia.

In addition, the Governor-General, as the Queen's representative, is Commander-in-Chief of the Defence Forces. 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 of the Australian territories.

In all such matters the Governor-General acts on the advice of the Prime Minister.

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 Constitution and the Letters Patent provide for the Queen to 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.

### Holders of office

His Excellency Major General Michael Jeffery AC CVO MC (Retd) has been Governor-General since 11 August 2003.

Those persons who have held the office of Governor-General from the inception of the Commonwealth of Australia until 1988 are pictured in *Year Book Australia 1988*. Pictures of all holders of the office can be found in the *Government* section of *Australia Now* on the ABS web site <<http://www.abs.gov.au>>.

## The Commonwealth Parliament

Commonwealth legislative power is vested in the Commonwealth Parliament, comprising the House of Representatives (currently 150 members) and the Senate (76 members).

### The 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 one of the most powerful upper houses in the world.

Australia having a federal system means that the powers of the Commonwealth Parliament are limited to areas of national importance. Among the powers granted by the Constitution are trade and commerce, taxation, postal services, foreign relations, defence, immigration, naturalisation, quarantine, currency and coinage, weights and measures, copyright, patents and trade marks. High Court decisions and Commonwealth–state agreements 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.

## The 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
- to provide a forum for the alternative 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. The Prime Minister always sits in the House of Representatives.

The Hon. JW Howard, MP (Liberal Party of Australia) has been Prime Minister since 11 March 1996.

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. Most Bills 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; private members' legislation is rare.

The *representation of the people* is an important role of members of the House of Representatives and senators. Looking after 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. During the 1990s, Parliament averaged 64 sitting days per year.

The *scrutiny* function is seen most obviously in the formal periods of Question Time, in both houses, that are a part of each day's sitting. Question Time is the best-known part of parliamentary proceedings, and is attended by many of the visiting public. Less well-known is the activity of a range of parliamentary committees which are established in order that Parliament's legislative, inquiry and scrutiny functions can be carried out more 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.

In Westminster system 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.

The Hon. SF Crean, MP (Australian Labor Party) has been Leader of the Opposition since 22 November 2001.

## The Australian Government

### Prime Minister

After an election, the Governor-General sends for the leader of the party, or coalition, which 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 incoming Prime Minister then goes about the process of finding members of his or her parliamentary party or coalition to serve as ministers in the Government.

The office of Prime Minister is not recognised by the Constitution, being a conventional part of the governmental arrangements.

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
- chairing Cabinet meetings.

### Ministers

It is customary for all ministers to be either a member of the House of Representatives or a Senator. If a minister is not an MP, it is obligatory for that minister to become an MP within three months of his/her appointment. Reshuffles of the ministry may occur at any time between elections. Ministers are invariably members of the same party or coalition as the Prime Minister.

The 58 ministries since Federation are listed in table 2.1.

In most cases, new governments are formed after general elections have been held to determine the composition of the House of Representatives. 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.

### Cabinet

In practice, government policy is determined by the most senior ministers meeting in a body known as Cabinet. Such meetings are chaired by the Prime Minister. The Governor-General does not attend such meetings. Cabinet is not a body that is recognised by the Constitution, being a conventional part of the governmental arrangements. Despite this, Cabinet effectively controls not only the legislative program, but also the departments of state. In effect, therefore, Cabinet is the dominant political and administrative element in Australia's national government. Ministers not included in Cabinet are referred to collectively as the Outer Ministry.

Particulars of the Third Howard Ministry, comprising Cabinet ministers and the Outer Ministry, are shown in table 2.2.

## 2.1 MINISTRIES SINCE 1901

Number of Ministry	Ministry	Period of office	Party
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	Hughes	17 February 1917 to 8 January 1918	Nationalist
14	Hughes	10 January 1918 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	Lyons	6 January 1932 to 7 November 1938	United Australia Party
18	Lyons	7 November 1938 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	Menzies	14 March 1940 to 28 October 1940	United Australia Party-Country Party
22	Menzies	28 October 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	Curtin	7 October 1941 to 21 September 1943	Australian Labor Party
25	Curtin	21 September 1943 to 6 July 1945	Australian Labor Party
26	Forde	6 July 1945 to 13 July 1945	Australian Labor Party
27	Chifley	13 July 1945 to 1 November 1946	Australian Labor Party
28	Chifley	1 November 1946 to 19 December 1949	Australian Labor Party
29	Menzies	19 December 1949 to 11 May 1951	Liberal-Country Party
30	Menzies	11 May 1951 to 11 January 1956	Liberal-Country Party
31	Menzies	11 January 1956 to 10 December 1958	Liberal-Country Party
32	Menzies	10 December 1958 to 18 December 1963	Liberal-Country Party
33	Menzies	18 December 1963 to 26 January 1966	Liberal-Country Party
34	Holt	26 January 1966 to 14 December 1966	Liberal-Country Party
35	Holt	14 December 1966 to 19 December 1967	Liberal-Country Party
36	McEwen	19 December 1967 to 10 January 1968	Liberal-Country Party
37	Gorton	10 January 1968 to 28 February 1968	Liberal-Country Party
38	Gorton	28 February 1968 to 12 November 1969	Liberal-Country Party
39	Gorton	12 November 1969 to 10 March 1971	Liberal-Country Party
40	McMahon	10 March 1971 to 5 December 1972	Liberal-Country Party
41	Whitlam	5 December 1972 to 19 December 1972	Australian Labor Party
42	Whitlam	19 December 1972 to 12 June 1974	Australian Labor Party
43	Whitlam	12 June 1974 to 11 November 1975	Australian Labor Party
44	Fraser	11 November 1975 to 22 December 1975	Liberal-Country Party
45	Fraser	22 December 1975 to 20 December 1977	Liberal-Country Party
46	Fraser	20 December 1977 to 3 November 1980	Liberal-Country Party
47	Fraser	3 November 1980 to 7 May 1982	Liberal-Country Party
48	Fraser	7 May 1982 to 11 March 1983	Liberal-Country Party
49	Hawke	11 March 1983 to 13 December 1984	Australian Labor Party
50	Hawke	13 December 1984 to 24 July 1987	Australian Labor Party
51	Hawke	24 July 1987 to 4 April 1990	Australian Labor Party
52	Hawke	4 April 1990 to 20 December 1991	Australian Labor Party
53	Keating	20 December 1991 to 27 December 1991	Australian Labor Party
54	Keating	27 December 1991 to 24 March 1993	Australian Labor Party
55	Keating	24 March 1993 to 11 March 1996	Australian Labor Party
56	Howard	11 March 1996 to 21 October 1998	Liberal-National Party of Australia
57	Howard	21 October 1998 to 26 November 2001	Liberal-National Party of Australia
58	Howard	26 November 2001	Liberal-National Party of Australia

Source: Department of the Parliamentary Library.

## 2.2 THIRD HOWARD MINISTRY — November 2003

### CABINET MINISTERS

Prime Minister	The Hon. John Howard, MP
Minister for Transport and Regional Services (Deputy Prime Minister)	The Hon. John Anderson, MP
Treasurer	The Hon. Peter Costello, MP
Minister for Trade	The Hon. Mark Vaile, MP
Minister for Foreign Affairs	The Hon. Alexander Downer, MP
Minister for Defence (Leader of the Government in the Senate)	Senator the Hon. Robert Hill
Minister for Finance and Administration (Deputy Leader of the Government in the Senate)	Senator the Hon. Nick Minchin, MP
Minister for Health and Ageing (Leader of the House)	The Hon. Tony Abbott, MP
Attorney-General	The Hon. Philip Ruddock, MP
Minister for the Environment and Heritage (Vice-President of the Executive Council)	The Hon. Dr David Kemp, MP
Minister for Communications, Information Technology and the Arts	The Hon. Daryl Williams, AM, QC, MP
Minister for Agriculture, Fisheries and Forestry	The Hon. Warren Truss, MP
Minister for Immigration and Multicultural and Indigenous Affairs and Minister Assisting the Prime Minister for Reconciliation	Senator the Hon. Amanda Vanstone
Minister for Education, Science and Training	The Hon. Dr Brendan Nelson, MP
Minister for Family and Community Services and Minister Assisting the Prime Minister for the Status of Women	Senator the Hon. Kay Patterson
Minister for Industry, Tourism and Resources	The Hon. Ian Macfarlane, MP
Minister for Employment and Workplace Relations and Minister Assisting the Prime Minister for the Public Service	The Hon. Kevin Andrews, MP

### OUTER MINISTRY

Minister for Local Government, Territories and Roads (Manager of Government Business in the Senate)	Senator the Hon. Ian Campbell
Minister for Revenue and Assistant Treasurer	Senator the Hon. Helen Coonan
Minister for Veterans' Affairs	The Hon. Danna Vale, MP
Special Minister of State	Senator the Hon. Eric Abetz
Minister for Ageing	The Hon. Julie Bishop, MP
Minister for Justice and Customs	Senator the Hon. Chris Ellison
Minister for the Arts and Sports	Senator the Hon. Rod Kemp
Minister for Fisheries, Forestry and Conservation	Senator the Hon. Ian Macdonald
Minister for Citizenship and Multicultural Affairs and Minister Assisting the Prime Minister	The Hon. Gary Hardgrave, MP
Minister for Science (Deputy Leader of the House)	The Hon. Peter McGauran, MP
Minister for Children and Youth Affairs	The Hon. Larry Anthony, MP
Minister for Small Business and Tourism	The Hon. Joe Hockey, MP
Minister for Employment Services and Minister Assisting the Minister for Defence	The Hon. Mal Brough, MP
Parliamentary Secretary to the Prime Minister	The Hon. Jackie Kelly, MP
Parliamentary Secretary to the Minister for Transport and Regional Services and Parliamentary Secretary to the Minister for Trade	The Hon. De-Anne Kelly MP
Parliamentary Secretary to the Treasurer	The Hon. Ross Cameron, MP
Parliamentary Secretary to the Minister for Foreign Affairs	The Hon. Chris Gallus, MP
Parliamentary Secretary to the Minister for Defence	The Hon. Fran Bailey, MP
Parliamentary Secretary to the Minister for Finance and Administration	The Hon. Peter Slipper, MP
Parliamentary Secretary to the Minister for Health and Ageing	The Hon. Trish Worth, MP
Parliamentary Secretary to the Minister for the Environment and Heritage	The Hon. Dr Sharman Stone, MP
Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry	Senator the Hon. Judith Troeth
Parliamentary Secretary to the Minister for Family and Community Services	The Hon. Christopher Pyne, MP
Parliamentary Secretary to the Minister for Industry, Tourism and Resources	The Hon. Warren Entsch, MP

Source: *Department of the Parliamentary Library.*

## The Australian Public Service (APS)

The APS provides policy advice to the Australian Government and facilitates the delivery of programs to the community. The APS is part of the broader public sector, which includes parliamentary departments and staff, Government-owned companies, statutory authorities, a separate public service for each of the states and territories, and local government employees. As at August 2002, some 1.5 million Australians, 16.9% of the employed work force, worked in the public sector; there were nearly 123,500 employees in the APS at 30 June 2002 (graph 2.3). Over the past 15 years, a number of functions, such as that provided by the former Commonwealth Employment Service, have been moved out of the APS. The 'unadjusted' line in graph 2.3 shows the actual size of the APS over the period 1987–2002. The 'adjusted' line shows the number of APS employees adjusted for changes in APS coverage that have occurred during that period.

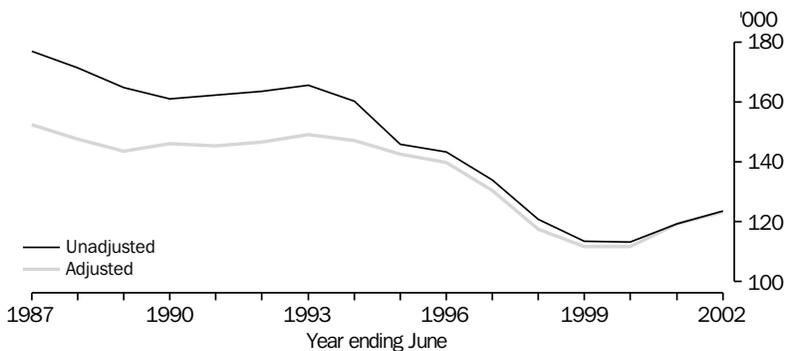
There are currently 18 departments in the APS. Each department is managed by a chief executive officer, or secretary, who is responsible to the relevant minister for the efficient, effective and ethical use of resources. The minister, in turn, takes political responsibility for the actions of the department. Each department administers particular legislation that is specified in Administrative Arrangements. The management of financial and human resources is governed by Commonwealth legislation such as the *Financial Management and Accountability Act 1997* and the *Public Service Act 1999*. Public servants are required to uphold the values and standards of

behaviour specified in the *Public Service Act 1999*. These include responsiveness to the Government, high ethical standards, accountability, impartiality, merit in employment, integrity, courtesy, lawfulness, confidentiality and the proper use of resources. As well as answering to the relevant minister, the APS is accountable to the Australian community through a variety of mechanisms including parliamentary committees, administrative law, the Ombudsman and the Auditor-General.

Over the last two decades, the APS has undergone substantial change, both in its internal management processes and in its methods of service delivery. Examples of management changes include the introduction of accrual budgeting in the 1999–2000 Budget, an emphasis on reaching performance targets, the costing of government 'outputs', the imposition of capital use charges, the devolution of responsibility to departments and more flexible employment practices. Examples of changes to service delivery include the trend towards providing information and other services on the Internet, increased contracting of service delivery to the private sector and the establishment of customer service charters.

Public resources are harnessed by the public sector to give practical effect to government policies. Traditionally, this process has been known as public administration. Increasingly, it is known as public management, reflecting the growing expectation that public sector managers will take responsibility for achieving results, as well as the increasing emphasis on efficiency.

**2.3 SIZE OF THE AUSTRALIAN PUBLIC SERVICE**



Source: Australian Public Service Commission, APS Employment Database, <<http://www.apsc.gov.au>>.

# Commonwealth elections

## Franchise

Any Australian citizen aged 18 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 an electorate for a period of one month before enrolment is necessary to enable a qualified person to enrol. 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, though elections may be called earlier. Senators have fixed terms of six years. Normally half the Senate retires every three years, and elections for the Senate are usually held at the same time as elections for the House of Representatives, though they need not be.

At times of disagreement between the House of Representatives and the Senate, both houses may be dissolved and an election called for both houses. Six of the forty Commonwealth elections have been double dissolution elections.

Table 2.4 shows the number and terms of all parliaments since Federation.

## Electorates

For the purpose of House of Representatives elections each state or territory is divided into single-member electorates corresponding in number to the number of members to which the state or territory is entitled. In Senate elections the whole state or territory constitutes a single electorate.

Redistributions of House of Representatives electorates must be held in each state and territory at least every seven years, though a change in the population of a state or territory may see them held more frequently. A redistribution must take into account current and projected enrolments, community of economic, social and regional interests, means of communication and travel, physical features and area, and existing electorate boundaries. Within each state and territory the electorates must, as far as possible, be equal in numbers of electors. There is usually a variation in size of electorates from one state or territory to another.

## 2.4 COMMONWEALTH PARLIAMENTS

Number of Parliament	Date of opening	Date of dissolution
1	9 May 1901	23 November 1903
2	2 March 1904	5 November 1906
3	20 February 1907	19 February 1910
4	1 July 1910	23 April 1913
5	9 July 1913	30 July 1914(a)
6	8 October 1914	26 March 1917
7	14 June 1917	3 November 1919
8	26 February 1920	6 November 1922
9	28 February 1923	3 October 1925
10	13 January 1926	9 October 1928
11	6 February 1929	16 September 1929
12	20 November 1929	27 November 1931
13	17 February 1932	7 August 1934
14	23 October 1934	21 September 1937
15	30 November 1937	27 August 1940
16	20 November 1940	7 July 1943
17	23 September 1943	16 August 1946
18	6 November 1946	1 October 1949
19	22 February 1950	19 March 1951(a)
20	12 June 1951	21 April 1954
21	4 August 1954	4 November 1955
22	15 February 1956	14 October 1958
23	17 February 1959	2 November 1961
24	20 February 1962	1 November 1963
25	25 February 1964	31 October 1966
26	21 February 1967	29 September 1969
27	25 November 1969	2 November 1972
28	27 February 1973	11 April 1974(a)
29	9 July 1974	11 November 1975(a)
30	17 February 1976	8 November 1977
31	21 February 1978	19 September 1980
32	25 November 1980	4 February 1983(a)
33	21 April 1983	26 October 1984
34	21 February 1985	5 June 1987(a)
35	14 September 1987	19 February 1990
36	8 May 1990	8 February 1993
37	4 May 1993	29 January 1996
38	30 April 1996	31 August 1998
39	10 November 1998	8 October 2001
40	12 February 2002	..

(a) A dissolution of both the Senate and the House of Representatives.

Source: *Department of the Parliamentary Library.*

The Electoral Commissioner determines the representation entitlements of the states and territories during the 13th month after the first meeting of a new House of Representatives. Determinations are based on the latest population statistics as provided by the Australian Statistician. The representation entitlements of the states and territories following the 2003 determination are shown in table 2.5, which also shows the total size of the House of Representatives at the time of the next election. Tasmania has a constitutional entitlement to five members of the House of Representatives based on it being a state at the time of Federation in 1901. The Australian Capital Territory and the Northern Territory have gained representation since 1901, and current legislation provides a minimum representation of one member of the House of Representatives for each.

For the next election, which must be held by 16 April 2005, Queensland will gain an extra member, while South Australia and the Northern Territory will each lose a member. The House of Representatives will therefore number 149 members.

## 2001 election

The House of Representatives was dissolved on 8 October 2001 and an election called for 10 November 2001, for the House of Representatives and half the Senate. At that election the Liberal–National Party coalition was returned to office.

The number of electors enrolled for the 2001 election is shown in table 2.6.

The state of the parties in the Commonwealth Parliament at November 2002 is shown in table 2.7.

First preference votes cast for the major political parties in each state and territory at the 2001 election for each house of the Commonwealth Parliament are shown in tables 2.8 and 2.9.

## 2.5 REPRESENTATION ENTITLEMENTS, 2003 Determination

State/territory	Seats	Change from 1999
New South Wales	50	—
Victoria	37	—
Queensland	28	+1
Western Australia	15	—
South Australia	11	-1
Tasmania	5	—
Australian Capital Territory	2	—
Northern Territory	1	-1
<b>Total</b>	<b>149</b>	<b>-1</b>

Source: Department of the Parliamentary Library.

## 2.6 COMMONWEALTH PARLIAMENTARY ELECTION OF 10 NOVEMBER 2001, Electors Enrolled

State/territory	
New South Wales	4 227 937
Victoria	3 234 874
Queensland	2 336 698
South Australia	1 039 025
Western Australia	1 206 422
Tasmania	331 675
Northern Territory	111 022
Australian Capital Territory	221 184
<b>Australia</b>	<b>12 708 837</b>

Source: Department of the Parliamentary Library.

## 2.7 STATE OF THE PARTIES, Commonwealth Parliament — November 2003

<b>House of Representatives</b>	
Liberal Party	68
Australian Labor Party	64
National Party	13
Country Liberal Party	1
Independent	3
The Greens	1
<i>Total</i>	150
<b>Senate</b>	
Liberal Party	31
Australian Labor Party	28
National Party	3
Australian Democrats	7
The Greens	2
Country Liberal Party	1
One Nation	1
Independent	3
<i>Total</i>	76

Source: Department of the Parliamentary Library.

## 2.8 COMMONWEALTH PARLIAMENTARY ELECTIONS, House of Representatives votes — 10 Nov 2001

	NSW	Vic.	Qld	SA	
First preference votes					
Liberal Party	1 272 208	1 154 493	767 959	430 441	
National Party	349 372	91 048	192 454	..	
Country Liberal Party	..	..	..	..	
Australian Labor Party	1 380 822	1 230 764	730 914	316 362	
Australian Democrats	160 706	184 564	90 679	98 849	
The Greens	180 079	174 396	73 467	34 141	
Pauline Hanson's One Nation	180 813	37 812	148 932	44 574	
Others	264 460	81 938	101 847	13 340	
<i>Formal votes</i>	3 788 460	2 955 015	2 106 252	937 707	
Informal votes	217 169	122 575	106 995	55 040	
<i>Total votes recorded</i>	4 005 629	3 077 590	2 213 247	992 747	
	<b>WA</b>	<b>Tas.</b>	<b>NT</b>	<b>ACT</b>	<b>Aust.</b>
First preference votes					
Liberal Party	449 036	114 283	..	65 651	4 254 071
National Party	11 052	..	..	..	643 926
Country Liberal Party	..	..	36 961	..	36 961
Australian Labor Party	402 927	145 305	39 111	95 215	4 341 420
Australian Democrats	50 581	13 785	4 795	16 266	620 225
The Greens	64 939	24 052	3 665	14 335	569 074
Pauline Hanson's One Nation	67 992	8 847	3 486	5 576	498 032
Others	38 268	1 746	3 143	5 623	510 365
<i>Formal votes</i>	1 084 795	308 018	91 161	202 666	11 474 074
Informal votes	56 134	10 856	4 436	7 386	580 591
<i>Total votes recorded</i>	1 140 929	318 874	95 597	210 052	12 054 665

Source: Department of the Parliamentary Library.

## 2.9 COMMONWEALTH PARLIAMENTARY ELECTIONS, Senate votes — 10 Nov 2001

	NSW	Vic.	Qld	SA	
First preference votes					
Liberal-National Party	1 620 235	1 155 854	..	..	
Liberal Party	..	..	750 416	440 431	
National Party	..	..	196 845	..	
Country Liberal Party	..	..	..	..	
Australian Labor Party	1 299 488	1 073 667	682 239	321 422	
Australian Democrats	240 867	228 272	143 942	121 989	
The Greens	216 522	71 605	215 400	44 055	
Pauline Hanson's One Nation	169 139	174 817	71 102	33 385	
Christian Democratic Party	72 697	17 162	22 703	..	
Others	260 495	196 890	67 430	5 733	
<i>Formal votes</i>	3 879 443	2 918 267	2 150 077	967 015	
Informal votes	142 281	173 592	65 450	30 556	
<i>Total votes recorded</i>	4 021 724	3 091 859	2 215 527	997 571	
	<b>WA</b>	<b>Tas.</b>	<b>NT</b>	<b>ACT</b>	<b>Aust.</b>
First preference votes					
Liberal-National Party	..	..	..	..	2 776 089
Liberal Party	443 597	119 720	..	70 475	1 824 639
National Party	26 015	..	..	..	222 860
Country Liberal Party	..	..	40 680	..	40 680
Australian Labor Party	377 547	113 709	36 500	86 331	3 990 903
Australian Democrats	64 773	14 273	6 796	22 072	842 984
The Greens	77 757	10 169	4 353	4 485	644 346
Pauline Hanson's One Nation	64 736	42 568	3 978	14 825	574 550
Christian Democratic Party	13 809	..	..	3 602	129 973
Others	37 295	8 223	755	3 684	580 505
<i>Formal votes</i>	1 105 529	308 662	93 062	205 474	11 627 529
Informal votes	41 025	10 493	2 640	4 924	470 961
<i>Total votes recorded</i>	1 146 554	319 155	95 702	210 398	12 098 490

Source: Department of the Parliamentary Library.

## State government

Each state experienced a period as a self-governing colony prior to the achievement of Federation. Under the constitutional arrangements that came into existence in 1901 significant powers were retained by the states, and these have been extended to the major territory governments.

### State governors

The governor is the representative of the Sovereign, appointed by the Sovereign on the advice of the relevant state 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 *Commonwealth Australia Act 1986*, 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 due to the Crown in right of their state.

State governors act on the advice of the Premier of the state.

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 November 2003 are shown in table 2.10.

### State parliaments

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, headed by an opposition leader.

Tables 2.11 and 2.12 set out the state premiers and opposition leaders at November 2003.

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 all upper houses is Legislative Council.

The members of the parliaments of each state are elected by the residents of that state using either the alternative vote (preferential voting) or the single transferable vote variant of proportional representation.

The state of the parties in each of the state and territory parliaments is set out in table 2.13.

The extent of state legislative powers is defined by the Commonwealth and state Constitutions, and includes education, police, public health, public transport, agriculture, roads and the overseeing of local government.

#### 2.10 GOVERNORS OF THE STATES — November 2003

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New South Wales	Her Excellency the Professor Marie Bashir, AC
Victoria	John Landy, AC, MBE
Queensland	Her Excellency Ms Quentin Bryce, AC
Western Australia	His Excellency Lieutenant General John Murray Sanderson, AC, AM
South Australia	Her Excellency Mrs Marjorie Jackson Nelson, AC, MBE
Tasmania	His Excellency the Honourable Richard William Butler, AC

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Source: *Department of the Parliamentary Library.*

#### 2.11 PREMIERS, States — November 2003

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New South Wales	The Hon. RJ Carr, MP (ALP)
Victoria	The Hon. SP Bracks, MP (ALP)
Queensland	The Hon. P Beattie, MP (ALP)
Western Australia	The Hon. GI Gallop, MP (ALP)
South Australia	The Hon. M Rann, MP (ALP)
Tasmania	The Hon. JA Bacon, MP (ALP)

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Source: *Department of the Parliamentary Library.*

#### 2.12 OPPOSITION LEADERS, States — November 2003

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New South Wales	JG Brogden, MP (LP)
Victoria	RKB Doyle, MP (LP)
Queensland	LJ Springborg, MP (NP)
Western Australia	The Hon. CJ Barnett, MP (LP)
South Australia	Hon. RG Kerin, MP (LP)
Tasmania	MT Hidding, MP (LP)

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Source: *Department of the Parliamentary Library.*

**2.13 STATE OF THE PARTIES, States and territories — November 2003**

	Seats
<b>NEW SOUTH WALES</b>	
Legislative Assembly	
Australian Labor Party	55
Liberal Party	20
National Party	12
Independent	6
<i>Total</i>	93
Legislative Council	
Australian Labor Party	18
Liberal Party	9
National Party	4
Christian Democratic Party	3
The Greens	2
Australian Democrats	1
One Nation Party	1
Others	4
<i>Total</i>	42
<b>VICTORIA</b>	
Legislative Assembly	
Australian Labor Party	62
Liberal Party	17
National Party	7
Independent	2
<i>Total</i>	88
Legislative Council	
Liberal Party	25
Australian Labor Party	15
National Party	4
<i>Total</i>	44
<b>QUEENSLAND</b>	
Legislative Assembly	
Australian Labor Party	66
National Party	11
Liberal Party	3
One Nation Party	2
Independent	7
<i>Total</i>	89
<b>SOUTH AUSTRALIA</b>	
House of Assembly	
Australian Labor Party	22
Liberal Party	20
National Party	1
Independent	1
The Greens	3
<i>Total</i>	47
Legislative Council	
Liberal Party	9
Australian Labor Party	7
Australian Democrats	3
Independent	3
<i>Total</i>	22

...continued

**2.13 STATE OF THE PARTIES, States and territories — November 2003 — continued**

	Seats
<b>WESTERN AUSTRALIA</b>	
Legislative Assembly	
Australian Labor Party	32
Liberal Party	16
National Party	5
Independent	4
<i>Total</i>	57
Legislative Council	
Australian Labor Party	13
Liberal Party	12
The Greens	5
One Nation	3
National Party	1
<i>Total</i>	34
<b>TASMANIA</b>	
House of Assembly	
Australian Labor Party	14
Liberal Party	7
The Greens	4
<i>Total</i>	25
Legislative Council	
Australian Labor Party	5
Independent	10
<i>Total</i>	15
<b>NORTHERN TERRITORY</b>	
Legislative Assembly	
Australian Labor Party	13
Country Liberal Party	10
Independent	2
<i>Total</i>	25
<b>AUSTRALIAN CAPITAL TERRITORY</b>	
Legislative Assembly	
Australian Labor Party	8
Liberal Party	6
Australian Democrats	1
The Greens	1
Independent	1
<i>Total</i>	17

Source: Department of the Parliamentary Library.

## Territory government

### Self-governing

The Australian Capital Territory and the Northern Territory are self-governing polities with powers almost matching those of the original 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 controls its own treasury and raises revenue under its own system of laws. Generally, Commonwealth laws do not apply to Norfolk Island unless expressed to do so, but where any Norfolk Island legislation is in conflict with

ordinances made by the Governor-General, such legislation is deemed null and void. Norfolk Islanders may enrol for Commonwealth elections in the electoral division they nominate, with some exceptions.

The Northern Territory and Norfolk Island both have an administrator of the territory, appointed by the Governor-General (table 2.14). The Australian Capital Territory has neither administrator nor governor. Each territory has an elected Legislative Assembly, with a wide range of powers.

Each territory has a government headed by a chief minister (table 2.15). The Northern Territory and the Australian Capital Territory have an opposition headed by an opposition leader (table 2.16).

### Non-self governing

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 in each of Jervis Bay Territory, the Cocos (Keeling) Islands and Christmas Island are provided with an extensive range of government services. Each of the Cocos (Keeling) Islands and Christmas Island has an elected local government, and residents may vote in Commonwealth parliamentary elections in the electoral division of Northern Territory. Residents of Jervis Bay are enrolled in the electoral division of Fraser (Australian Capital Territory).

#### 2.14 ADMINISTRATORS, Territories — November 2003

Northern Territory	The Hon. Edward Joseph (Ted) Egan, AM
Norfolk Island	GEJ Tambling

Source: Department of the Parliamentary Library.

#### 2.15 CHIEF MINISTERS, Territories — November 2003

Northern Territory	The Hon. CM Martin, MLA (ALP)
Australian Capital Territory	The Hon. J Stanhope, MLA (ALP)
Norfolk Island	GR Gardner

Source: Department of the Parliamentary Library.

#### 2.16 OPPOSITION LEADERS, Territories — November 2003

Northern Territory	The Hon. DG Burke, MLA (CLP)
Australian Capital Territory	BM Smyth, MLA (LP)

Source: Department of the Parliamentary Library.

### Local government

Local government has a limited constitutional position in Australia, being organised under state or territory legislation upon broadly similar lines across Australia. The main variation is the existence of various councils in the Northern Territory that are based on rural Aboriginal communities. There are no local councils in the Australian Capital Territory, where the territory government has direct responsibility for local services. Local government in Australia is unlike that in many other political systems, for it provides an unusually narrow range of services.

Each state and the Northern Territory has a number of local government areas, known variously as cities, towns, municipalities, boroughs, shires or districts. The generic local body is the council. In July 2003 there were 719 local councils. Most 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 local 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 services across most of Brisbane; by contrast, many small rural councils provide a relatively small number of services. Among the local responsibilities are the management of health, sanitary and garbage services, road, street and bridge construction, water supply and sewerage, museums, fire brigades, harbour services and local libraries. The scope of local government duties differs a great deal around the nation, for 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 in Australia as statutory authorities. The provision of household water, for instance, is typically undertaken by a statutory authority operating under state legislation.

## 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 parliament were won by candidates from just three major groups, one of which was the Australian Labor Party. The outline of the modern system can be seen as early as 1909 when a fusion of the major non-Labor parties formed the first Liberal Party. This was confirmed in the election in the following year, which saw the election dominated by the Liberal and Australian Labor parties. In 1919 the Country Party won a significant number of seats, and by 1923 it was participating in a coalition government. Since that time the Australian party system has been dominated by the contest between Labor and a coalition of the Liberal and National (formerly Country) parties. Many minor parties have contested House of Representatives elections, but have not seriously threatened the dominance of the three major parties.

Since 1949 the use of proportional representation for Senate elections has given minor parties a realistic chance of winning Senate seats, and the major parties have rarely controlled the upper house since the election of 1964.

### Parties and Parliament

The idea that Parliament 'controls' ministers, as well as government policy and the departments and statutory bodies which implement these policies, is a concept which had more relevance in the 19th century than it does today. Stable majority party government in the 20th century is perhaps the main reason for the decline in absolute parliamentary control as well as for the decline in the influence of Parliament relative to that of the Executive.

The impact of parties can be seen clearly in the operations of each house of Parliament, particularly in the legislative process. Many questions and queries may be raised in the House of Representatives, and amendments are often moved. However, because governments enjoy a majority in the House, questions may be avoided, amendments cannot be forced, and whether or not the Opposition's views are accepted depends on the wishes of the government of the day.

It is a different story in the Senate, where no government has enjoyed a majority since 1981. If the Government wants legislation to be passed by the Senate it often has to agree to amendments proposed by the Opposition and minor parties. It is for this reason that the Senate is far more active than the House of Representatives in sending proposed legislation to committees.

## National anthem and colours of Australia

A national song poll was held on 21 May 1977. Voting was preferential and, after the distribution of preferences, 'Advance Australia Fair' became the national song of Australia.

His Excellency, the Governor-General of the Commonwealth of Australia, issued the following Proclamation on 19 April 1984:

I, SIR NINIAN MARTIN STEPHEN,  
Governor-General of the Commonwealth of  
Australia, acting with the advice of the Federal  
Executive Council, hereby declare:

(a) that the anthem 'God Save The Queen' shall henceforth be known as the Royal Anthem and be used in the presence of Her Majesty The Queen or a member of the Royal Family;

(b) that the National Anthem shall consist of the tune known as 'Advance Australia Fair' with the following words:

*Australians all let us rejoice,  
For we are young and free,  
We've golden soil and wealth for toil;  
Our home is girt by sea;  
Our land abounds in nature's gifts  
Of beauty rich and rare,  
In history's page, let every stage  
Advance Australia Fair.  
In joyful strains then let us sing,  
Advance Australia Fair.*

*Beneath our radiant Southern Cross  
We'll toil with hearts and hands;  
To make this Commonwealth of ours  
Renowned of all the lands;  
For those who've come across the seas  
We've boundless plains to share;  
With courage let us all combine  
To Advance Australia Fair.  
In joyful strains then let us sing,  
Advance Australia Fair.*

(c) that the Vice-Regal Salute to be used in the presence of His Excellency the Governor-General shall consist of the first four bars and the last four bars of the tune known as ‘Advance Australia Fair’;

(d) that the National Anthem shall be used on all official and ceremonial occasions, other than occasions on which either the Royal Anthem or the Vice-Regal Salute is used; and

(e) that green and gold (Pantone Matching System numbers 116C and 348C as used for printing on paper) shall be the national colours of Australia for use on all occasions on which such colours are customarily used.

## Reference notes

The Australian Constitution is reproduced in *Year Book Australia* from time to time, the latest being the 1998 edition.

In *Year Book Australia 1924* the names are given of each ministry up to the Bruce–Page Ministry together with the names of the successive holders of portfolios therein. *Year Book Australia 1953* contains a list which covers the period between

9 February 1923, the date on which the Bruce–Page Ministry assumed power, and 31 July 1951, showing the names of all persons who held office in each ministry during that period. 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.

For further details of referendums see *Year Book Australia 1966*, pages 66–68, *Year Book Australia 1974*, pages 90–91, *Year Book Australia 1977–78*, pages 72–73 and *Year Book Australia 1986*, pages 55–56.

Particulars of voting at Senate elections and elections for the House of Representatives up to 1998 appear in earlier issues of *Year Book Australia*. Full details are contained in the *Election Statistics* issued by the Electoral Commissioner following each election.

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### Web sites

- Adam Carr's election archive, <<http://www.adam-carr.net/>>
- Australian Electoral Commission, <<http://www.aec.gov.au>>
- Australian politics and government, <<http://www.australianpolitics.com.au/>>
- Parliament of Australia, <<http://www.aph.gov.au>>
- Department of the Parliamentary Library, <<http://www.aph.gov.au/library>>
- House of Representatives, <<http://www.aph.gov.au/house/index.htm>>
- Parliamentary Education Office, <<http://www.peo.gov.au>>
- Politics resources guides, <<http://www.aph.gov.au/library/intguide/pol/index.htm>>
- Senate, <<http://www.aph.gov.au/Senate/index.htm>>

# The 1967 Aborigines Referendum

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## The Constitution

The original Australian Constitution made two references to Australia's Indigenous persons in sections 51 (xxvi) and 127:

51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to: -

(xxvi.) The people of any race, other than the aboriginal people in any State, for whom it is deemed necessary to make special laws

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

The reasons for these provisions were threefold. On a practical level there was a concern that to include Aboriginal people in a census might distort the number of House of Representatives seats to be allocated to the different states. A second factor was the widely-held belief that Aboriginal people were 'dying out' and, hence, would soon cease to be a factor in questions of representation. Finally, many believed that indigenous people were not intellectually worthy of a place in the political system. Shortly after the new Constitution came in to force, the general view in the new national Parliament was that expressed by a Western Australian Senator who stated that there was a need to 'take some steps to prevent any aboriginal ... from acquiring the vote'. A Tasmanian Member of Parliament (MP) dismissed the need to include indigenous people in a national census: 'There is no scientific evidence that he is a human being at all'.<sup>1</sup>

## The 1944 referendum

Although there was no dispute among the Constitution-writers about these sections, in time they were criticised, both as a slur against Aboriginal people, as well as an hindrance to policy-making and the administration of Aboriginal affairs.<sup>2</sup> The Commonwealth Parliament could make laws concerning Aboriginal people in the Northern Territory and the Australian Capital Territory but not in the six states, and the key question came to be whether the Commonwealth should have the power to be involved directly in this area of administration across the nation. Despite the 1929 Royal Commission into the Constitution stating that 'on the whole the States are better equipped for controlling aborigines than are the Commonwealth', a dissenting report stated that the national Parliament 'should accept responsibility for their well-being'.<sup>3</sup> Gradually people came to the view that significant change in the living conditions of Aboriginal people might come only when the Commonwealth Government moved into the field.<sup>4</sup> Until this occurred, Commonwealth Governments might display sympathy but could also hide behind the constitutional barrier posed by s. 51 (xxvi):

In focusing on the obvious, and irrelevant, difficulties of the constitutional arrangements, the Commonwealth politicians could avoid any need to address the problems associated with discrimination and neglect....<sup>5</sup>

By the 1940s there was enough concern about this constitutional barrier for the Curtin Labor Government to include 'the people of the aboriginal race' in the list of fourteen powers that the Commonwealth sought to take over during the war. Speaking at a constitutional convention in 1942, Commonwealth Attorney-General Evatt noted that: 'Strong representations have been made that the Commonwealth should undertake this responsibility [of making laws for Aboriginal people]'.<sup>6</sup> The Curtin Labor Government duly put the 'fourteen points' to the people in the form of a constitutional referendum to alter the Constitution. Curiously, the powers were only to be exercised for the duration of the war and five years thereafter, and any laws made under this arrangement would cease to operate at the same time, on the grounds that Commonwealth takeover was simply aimed at facilitating post-war reconstruction.<sup>7</sup> Unfortunately for supporters of a change to s. 51 (xxvi), voters were required to indicate support or opposition to the entire list of fourteen powers, rather than separately for each. As many of the fourteen were politically controversial, it was no surprise that the relatively non-controversial power to make laws for Aboriginal people was defeated in the rush of voters to reject the controversial sections. It has been claimed that this rejection further indicated the ignorance of white Australians about indigenous people; Hasluck may be closer to the mark in his judgment that people's dislike of central government imposed wartime controls was probably 'a very powerful influence on the voters' who rejected the idea of the Commonwealth gaining any more power.<sup>8</sup> Indigenous persons had over 20 years to wait before the Commonwealth moved again on this matter.

## Changing times

Despite the 1944 failure, there was a gradual increase in pressure to do something to rectify the parlous state of Aboriginal welfare across the country, though the two major parties had quite different views as to which governments should be responsible in this policy-making area.

The Menzies Coalition Government was not prepared to disturb state powers, preferring to focus on the need to protect the political and

administrative balance between Commonwealth and state governments. In 1950, the Minister for the Interior stated that while the Commonwealth was alive to its responsibilities in the area of Aboriginal welfare, it preferred 'to co-operate with and help the States, and it hopes that in the future the States will take more interest in the welfare of their aborigines'.<sup>9</sup> By contrast, the Australian Labor Party (ALP) chose to push for the Commonwealth taking the major policy-making role. If a constitutional amendment was not a possibility, the ALP asked if there was a way of by-passing the constitutional barrier. Gordon Bryant MP, later a Minister for Aboriginal Affairs, wondered if use could be made of either s. 51 (xxxvii) or s. 96 of the Constitution. The former gave the states the means of ceding particular powers to the Commonwealth, while under the latter the Commonwealth had the power to make grants to the states for specific purposes.<sup>10</sup> The ALP was keener to push the constitutional possibilities than were its opponents, as stated in 1957 by Evatt, by now Leader of the Opposition:

My view is — and I am sure I speak for the political and industrial Labour movement — that the only thing to be done with the Australian aboriginal, full-blood or otherwise, is to give him the benefit of the same laws as apply to every other Australian.<sup>11</sup>

Bryant was one of a number of Labor spokespeople who also drew attention to the fact that Aboriginal people did not receive an equal share of social welfare benefits, something he believed could only be remedied if the Commonwealth were to be given more responsibility in this policy-making area.<sup>12</sup>

By the early 1960s, the Commonwealth and the states had begun to show a greater sensitivity to criticism of paternalistic legislation and administrative practices. The publicity given to the push in the United States of America for greater civil rights for American blacks found a resonance in Australia, as critics began to focus their attention on the relative absence of Aboriginal civil rights.<sup>13</sup> It is also clear that governments came to be sensitive to the poor image abroad that Australia had gained in relation to its treatment of the original population of the island continent.<sup>14</sup>

There were signs that this heightened political sensitivity was beginning to affect conservative party attitudes. The Commonwealth gave the vote to Aboriginal people in 1962. Queensland and Western Australia did the same in 1965, the last of the states to do so.<sup>15</sup> South Australia's *Aboriginal Affairs Act 1962* was an early example of a state slowly moving to remove paternalistic impositions from Aboriginal life, and it was in the 1960s that the government policy of assimilating Indigenous persons into mainstream Australian society began to be broken down.<sup>16</sup> In 1965, the South Australian Aboriginal Affairs Board expressed a 'strong bias' towards policies of integration that would encourage Aboriginal people to maintain their own cultural mores, for such a policy 'recognises the right of a person to decide his own future and enables him to make the transition stages at his own pace'.<sup>17</sup> During 1965–67, South Australia also passed important pieces of legislation that were designed to further improve the position of Indigenous persons, most notably the *Prohibition of Discrimination Act 1966* which prohibited discrimination by reason of race or colour of skin. As important as such changes were, the symbolic target remained the Constitution, and Indigenous groups such as the Federal Council for the Advancement of Aborigines and Torres Strait Islanders (FCAATSI) and the Aboriginal–Australian Fellowship spearheaded a popular drive to delete the offensive clauses. FCAATSI's persistence and hard work was particularly important in pushing politicians towards taking action.<sup>18</sup>

On 1 March 1967 the Holt Liberal–Country Government introduced legislation to amend the Constitution, a process that would involve a referendum. The proposed amendment sought to amend s. 51 (xxvi) and to delete s. 127. Parliament prescribes the manner in which constitutional referenda are held. Each elector receives a pamphlet containing arguments in favour and arguments against any proposal upon which the elector is voting. Normally, these arguments must be no more than two thousand words in length, and must be authorised by a majority of those parliamentary members who voted for or against the proposed law. Such arguments as are produced must be submitted to each voter, 'not later than 14 days before the voting day for the referendum'. Australian voters duly received the official YES case for the 'Aborigines' amendment, but there was no preparation of

an opposing NO case, a clear indication of how support for such a change was spread across the political spectrum.

The Aborigines referendum was to be held at the same time as a referendum to remove the requirement in s. 24 of the Constitution that the House of Representatives must be about twice the size of the Senate — the so-called 'nexus'. This was a far more controversial proposal, and it was commonly held that the Government had decided to hold the two referenda on the same day in the hope that people voting YES for the Aborigines would also be happy to approve the removal of the 'nexus'. If this was the plan, it failed quite spectacularly.

### The referendum campaign

The campaign for the referendum showed the large amount of support the Aboriginal cause had gained.<sup>19</sup> On face of it, the granting of a concurrent power to the Commonwealth to make laws for Aboriginal people wherever they lived, as well as the plan to include Aboriginal people in the national census were not of great moment. Because of this, the tactic of the campaigners was to focus on the emotional rather than the technical aspects of the change, talking in terms of morality — seeking to 'stir the people's hearts and minds'.<sup>20</sup> The campaigners were concerned about the impact of what one of them called 'a perverted allegiance to state rights', that had so influenced the defeat of so many constitutional referenda.<sup>21</sup> However, even in the minefield of relations between the Commonwealth and state governments, the normal bitternesses were momentarily set aside. The Country Party Premier of Queensland was able to agree with the Labor Premier of Tasmania that this slight change to the balance of federal power was necessary for the betterment of the Indigenous residents of Australia.<sup>22</sup> The deputy leader of the ALP, Gough Whitlam, referred to 'purging this stain from our constitution',<sup>23</sup> while a regional newspaper editorialised that the offending sections of the Constitution were 'obsolete and unjustifiable in this present age'.<sup>24</sup> In Armidale, the Anglican and Catholic bishops put out a joint statement that an affirmative vote in the referendum would remove 'any suggestion of race prejudice and will demonstrate our real concern for the dark people who are fellow-citizens'.<sup>25</sup>

No longer, it seemed, were Aboriginal people to be regarded as lesser beings, for they now were to enjoy the same status as all other members of Australian society. The official YES case picked up the emotional aspect of the popular campaign. It stated that 'the purposes of these proposed amendments' were to remove 'any ground for the belief that ... the Constitution discriminates in some ways against people of the Aboriginal race...'. With regard to the s. 51 change, the official case stated that the first thing that would be achieved was that it would 'remove words from our Constitution that many people think are discriminatory against the Aboriginal people'. As far as the s. 127 deletion was concerned, the fact that Aboriginal people were not counted in the national census meant that:

Our personal sense of justice, our commonsense, and our international reputation in a world in which racial issues are being highlighted every day, require that we get rid of this out-moded provision.<sup>26</sup>

Most of the media was firmly in favour of the YES campaign, giving much space to supporters, reporting injustices suffered by particular Aboriginal people, and running enthusiastic editorials:

We've taken his lands, decimated his tribes, degraded his women, taken away his dignity and forced him to live in squalor.

This is our chance to make some sort of amends. We still have a long way to go. But at least we can make a start at treating him as an equal.<sup>27</sup>

Radio and television were also important, and the words on a record sent by the Aboriginal Rights 'Vote Yes' Committee to every commercial radio station received air play:

Vote 'Yes' for Aborigines, they want to be Australians too,

Vote 'Yes' to give them rights and freedoms just like me and you,

Vote 'Yes' for Aborigines, all parties say they think you should,

Vote 'Yes' and show the world the true Australian brotherhood.<sup>28</sup>

## Opposition to the change

Goodall has noted that relations on the 'frontlines of interaction between Aboriginal people and their colonisers' continued to be

tense, and there were hints that not all non-Indigenous were enamoured of the referendum.<sup>29</sup> There was unrest in Alice Springs, for example, over the fact that Territorians were unable to vote on an issue of such direct relevance to Territory residents.<sup>30</sup> Others focused on a concern that this type of change would weaken the state governments and, hence, the Australian federal system. In this case the *West Australian* supported the abolition of s. 127, but thought the change to s. 51 could lead to the Commonwealth 'meddling' in states' affairs. The newspaper believed the use of the grants power (s. 96) was better than altering the Constitution.<sup>31</sup> The final category of objection suggested that the gaining of this power by the Commonwealth might be used to discriminate against Aboriginal people.<sup>32</sup> One correspondent to a city newspaper referred to the 'wide provision' in the Constitution that 'the Aborigines who link us with the prehistoric past have remained free in their nomadic state'.<sup>33</sup>

## The result

The two referenda were held on 27 May 1967. *Constitution Alteration (Parliament) 1967*, which sought to remove the 'nexus' from the Constitution was defeated by a wide margin. Barely 40% of voters supported the change, and all states rejected the proposal.

*Constitution Alteration (Aboriginals) 1967* sought to give the Commonwealth Parliament power to do two things:

- make laws with respect to Aboriginal people wherever they lived in Australia
- include Aboriginal people in national censuses.

Voters were asked:

Do you approve the proposed law for the alteration of the Constitution entitled 'An Act to alter the Constitution so as to omit certain words relating to the people of the Aboriginal race in any state so that Aborigines are to be counted in reckoning the population'?

The results of the referendum are summarised in the following table (S2.1). A YES vote majority was achieved in each of the six states and an overall majority of more than 4,650,000 voters were in favour of the proposed change to the Constitution.

## S2.1 THE 1967 ABORIGINES REFERENDUM

State	Number on electoral rolls no.	Ballot papers issued no.	YES vote		NO vote		Informal votes no.
			no.	%(a)	no.	%(a)	
New South Wales	2 315 828	2 166 507	1 949 036	91.5	182 010	8.5	35 461
Victoria	1 734 476	1 630 594	1 525 026	94.7	85 611	5.3	19 957
Queensland	904 808	848 728	748 612	89.2	90 587	10.8	9 529
South Australia	590 275	560 844	473 440	86.3	75 383	13.7	12 021
Western Australia	437 609	405 666	319 823	80.9	75 282	19.1	10 561
Tasmania	199 589	189 245	167 176	90.2	18 134	9.8	3 935
<b>Total</b>	<b>6 182 585</b>	<b>5 801 584</b>	<b>5 183 113</b>	<b>90.8</b>	<b>527 007</b>	<b>9.2</b>	<b>91 464</b>

(a) As a proportion of total valid (formal) votes cast.

Source: Department of the Parliamentary Library, 'Parliamentary Handbook of the Commonwealth of Australia', 29th ed., 2002, p. 563.

The referendum result was remarkable. Almost 91% of voters approved the constitutional change. Prior to this the highest vote (83%) had occurred in the first referendum in 1906, which had made a minor change to the terms of senators. The 1967 result remains the largest affirmative vote of all 44 constitutional referenda held. The Victorian, New South Wales and Tasmanian votes in 1967 have been the only three occasions when a state has voted over 90% in a constitutional referendum. The passage of the constitutional amendment was therefore a resounding success for the activists who had fought to have this important and highly symbolic change made to the Australian Constitution.

Commentators have praised the voters: the *Age* newspaper believed Australians had felt it was time to treat Aboriginal people 'with greater respect and humanity',<sup>34</sup> a former head of the Commonwealth Treasury, HC Coombs, spoke of it revealing an 'astonishing unanimity' among voters over the need to give the Commonwealth this power,<sup>35</sup> Stevens has praised it as a 'national expression of goodwill',<sup>36</sup> while Summers has claimed that 'it showed that voters accepted the need for greater efforts in Aboriginal welfare'.<sup>37</sup> Horne believed he could see in it a confirmation of what Australians could achieve:

The vote was more one of sentiment than of policy, but it was a measure of the potential of ordinary Australians that it was so huge ... The Australian people, by their vote, seemed to show a sense of conscience.<sup>38</sup>

### The NO vote

Despite the sweeping success of the referendum campaign, the vote showed that there had been some voters who were not prepared to support this change — in fact over half a million of them. A reluctance to support the change appears to have been most marked in communities which held the largest numbers of Aboriginal people. For instance, the three states with the highest proportion of Aboriginal residents were also the states that recorded the highest negative votes. Although only one Victorian voter in twenty was opposed, nearly one voter in five in Western Australia cast a NO vote. All Western Australian electorates returned NO votes exceeding 15%. Furthermore, with most Aboriginal people living outside of the major cities, it was significant that there was a marked difference between rural and urban votes. Forty-eight rural electorates returned a 13.2% NO vote, compared with 7.5% in seventy-four urban electorates. The settlement of Georgetown in the North Queensland electorate of Leichhardt actually cast a NO majority (62.9%). Many Australians were therefore prepared to accept the Aboriginal claim to equal treatment by government (and especially from the Commonwealth), but the greatest proportion of these came from the urban areas on the eastern seaboard. Residents of rural areas or the outlying states were less prepared to do so. Prejudice thus seems to have been important in explaining many of the negative votes.<sup>39</sup>

## The consequences of the referendum

### The impact upon government

There was some initial disappointment among those who had fought the referendum battle that the Commonwealth Government did not immediately act to push itself into the thick of policy-making in regard to Aboriginal people. The Coalition Government did move to establish the Office of Aboriginal Affairs, an advisory body that was given funds to ascertain the most urgent needs of Indigenous persons, and the first Minister for Aboriginal Affairs, WC Wentworth was appointed in February 1968, though the minister had no department under his control at this time.

The change of government in 1972 saw the Commonwealth moving squarely into this area of administration on the grounds that the 1967 vote justified such action. Prime Minister Whitlam defended his government's activity in the area of land rights, for instance, by referring to:

the will of the Australian people, expressed overwhelmingly in the Referendum of 1967, giving this Parliament, the national Parliament, the opportunity and the responsibility to see that Aborigines have a right to land.<sup>40</sup>

The Department of Aboriginal Affairs was established under the direct control of the Minister for Aboriginal Affairs (with Gordon Bryant as the first minister to head the department). This gave Aboriginal people their first direct path to national decision-makers. Many projects were begun in what was an intense burst of Commonwealth activity. The Whitlam Government (ALP, 1972–75) and the Fraser Government (LP–CP, 1975–83) involved themselves in a great many areas of Aboriginal affairs policy-making with a rapidly increasing provision of government funds. This changed relationship between the Commonwealth Government and Indigenous persons could also be seen in relation to the law, where there was a marked improvement in the protection of Aboriginal rights. The Aboriginal interest eventually had much to show for having had the Commonwealth Government move into the policy-making arena.

A recent judgement is that the referendum was 'vitaly necessary to the process of change', especially as it:

bestowed upon the Whitlam and subsequent governments the moral authority required to expand the Commonwealth's role in Aboriginal affairs and implement a major programme of reform.<sup>41</sup>

A former Minister for Aboriginal Affairs has noted that whatever the failings of policy-making since 1967, the position of Aboriginal people in relation to government is undoubtedly stronger than it was at the time of the referendum.<sup>42</sup> It has also been difficult for succeeding governments to do other than continue Commonwealth government activity in this policy-making area.

### The impact upon Australian politics

In the years prior to 1967, Aboriginal affairs policy-making did not divide the major parties, and, as we have seen, a general sympathy for Aboriginal people within the parties played an important part in ensuring the high YES vote in the referendum. This soon changed. Aboriginal expectations that governments would soon begin to act to alleviate their problems meant that the parties began to develop policies that began to produce argument and disputation.

Coalition inaction after 1967 caused unhappiness among Indigenous persons, and the ALP soon moved to make their policies a matter of difference between them and their opponents. In 1971, the party's expanded policy spoke of a Labor Commonwealth Government assuming 'the ultimate responsibility for Aborigines and Islanders accorded it by the referendum of 1967', it referred to Aboriginal people receiving 'the standard rate of wages for the job', and it spoke of land rights, which would 'carry with them full rights to minerals in those lands'. In regard to the Northern Territory, the policy spoke of granting 'special representation' for Aboriginal people in the Territory's Legislative Council.<sup>43</sup>

Such policies were likely to generate opposition, and it soon came in the form of disputation over such matters as the rejection of the long-term, Australia-wide government policy of assimilation, the emergence of the ideal of self-determination for Aboriginal people, and especially the call for land rights. Interests such as farmers and miners became vocal in their opposition to many policies for Indigenous betterment, and only three years after the referendum a Country Party Coalition minister was stating that it was 'wholly wrong to encourage Aboriginals to think that because their ancestors have had a long association with a particular piece of land, Aboriginals of the present day have the right to demand ownership of it...' <sup>44</sup> From such a perspective, the referendum came to be seen as a regrettable event. Some politicians, such as Pauline Hanson MP (One Nation), have claimed that the significance of the referendum had not been appreciated by voters: '...if Australians knew today what had been foreshadowed for them they would have thought twice about casting that vote'. <sup>45</sup> Others have focused on social problems experienced by Aboriginal people and have suggested that the passage of the referendum was directly linked to this, as asserted by another MP in 2001:

We shouldn't have allowed them the equal rights we gave them in 1967. Its like a re-run of the Garden of Eden story. We tempted them with everything and what happened? The person who had not been consuming alcohol suddenly was allowed it. That was wrong, we did nothing to ease people into a drug that has had very deleterious effects both in terms of sexual violence and in terms of health effects. We needed to introduce it to them gradually and train them into it. <sup>46</sup>

From a very different perspective, Attwood and Markus have noted that for many observers to talk of the referendum is to be reminded of opportunities lost. At the 20th anniversary of the referendum an editorial spoke of the years since 1967 as, 'a history of failure: failure to honour promises, failure to show concern and, above all, a failure to deliver'. <sup>47</sup> On balance, however, since 1967 Aboriginal people have been a part of the Australian polity who cannot be ignored.

## The impact upon Aboriginal people

The referendum has come to mean more than just the entry of the Commonwealth Government into policy-making or the counting of Indigenous persons in the national census. Above all else, there has been a marked tendency to see the referendum as a 'turning point' that has brought many benefits, both symbolic and real, to Aboriginal people. This idea of the referendum as a 'marker of change', <sup>48</sup> has come to permeate the way a great many Aboriginal people see the 1967 vote.

Many Indigenous persons therefore look back at 27 May 1967 as an occasion to honour and celebrate. Interestingly, the referendum has assumed an important place in peoples' consciousness that has transcended what it actually did to the Constitution: 'the passing of time has seen the precise terms of the referendum disappear from historical consciousness, only to be replaced by myths...' <sup>49</sup> It has been widely noted that although Aboriginal people had the vote by 1967 and although the referendum had nothing to do with citizenship, many people now believe that both the vote and Australian citizenship were gained by virtue of the passage of the referendum. The referendum campaign emphasised the emotional side of the battle, and what was used for emotional purposes has become entrenched in the public mind, seemingly impervious to a statement of the facts. This can be seen in the most unexpected places. A parliament web site has said that following the referendum, 'Aborigines gained full citizenship rights', <sup>50</sup> the Jessie Street Trust has referred to 'the success of the 1967 Referendum which gave indigenous people citizenship', <sup>51</sup> the Walgett Aboriginal Medical Service has claimed that the referendum was the occasion when 'Aboriginals become Australian Citizens, and for the first time had the right to vote', <sup>52</sup> while the New South Wales 2002 Year 10 examination topic included 'The 1967 Referendum on citizenship for Aboriginals'. <sup>53</sup>

But the myths have their place. For some people, in fact, this event was a coming of age for Aboriginal people as full citizens. In the words of an Indigenous man who was twenty-one at the time of the referendum: ‘... the Referendum achieved being able to say that I am who I am, and being proud of who I am’. A former chair of the Aboriginal and Torres Strait Islander Commission has stated that many Aboriginal people saw the vote as ‘powerfully symbolic’ — or as Patrick Dodson has put it, the race power was re-written ‘so that Aboriginal people be treated in a fair, just and honourable way’ by white Australians.<sup>54</sup> For the historian, Henry Reynolds, the referendum should be seen as ‘a symbolic event enshrined in history’, which stands alongside the equal pay decision (1965), the *Aboriginal Land Rights (Northern Territory) Act* (1976), the Mabo judgment (1992) and the Wik case (1996) as one of the major milestones of Indigenous peoples’ relationship with the Australian nation-state.<sup>55</sup>

At the 30th anniversary of the referendum, an Indigenous Australian summed up the referendum for him and for many like him:

It was a great morale booster for Aboriginal and Torres Strait Islander people around the country.

The Referendum was also part of a world-wide awakening on civil rights, and as such Aboriginal people were becoming aware of their own worth and place in Australian society.

For me, it reinforced by political struggles and those of people I knew.

I see the Referendum and its results as a major point in Aboriginal and Australian history.<sup>56</sup>

## Endnotes

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- 6 *Convention of Representatives of the Commonwealth and State Parliaments on Proposed Alteration of the Commonwealth Constitution. Held at Canberra, 25th November to 2nd December, 1942, Record of Proceedings*, Canberra, p. 178.
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- 12 Bryant, op. cit., p. 1223.
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- 15 Despite the post-1967 referendum perception of many people that it was the referendum itself which gave Aborigines the vote. This is so lasting a belief that a book celebrating the 30th anniversary of the referendum was entitled: *The 1967 Referendum, or when Aborigines didn't get the vote* (see n. 41 below).
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- 19 Bandler, *Turning the Tide*, pp. 61–111.
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- 21 Bandler, *Turning the Tide*, p. 104. Twenty-five constitutional amendment referenda had been held to that date, most of which involved an increase in Commonwealth Government power—as did this case. Only four of the twenty-five had been ratified. See Scott Bennett, 'The Politics of Constitutional Amendment', Department of the Parliamentary Library, *Research Paper*, no. 11, 2002–03, pp. 27–8 <<http://www.aph.gov.au/library/pubs/rp/2002-03/03RP11.htm>>.
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- 23 *Maryborough Chronicle*, 24 May 1967.
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- 51 Jessie Street Trust Annual Lunch 11 April 1997, <<http://www.isis.aust.com/afnt/jessie.htm>>.
- 52 <[http://www.walgettams.com.au/Hist\\_Aboriginal.htm](http://www.walgettams.com.au/Hist_Aboriginal.htm)>.
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## INTERNATIONAL RELATIONS

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Australia's international relations are driven by its core national interests — the security and prosperity of Australia and its people. Australia's international relations are also shaped by globalisation. Economic globalisation provides opportunities for internationally competitive economies, such as Australia's, but also brings challenges for political and economic management.

Australia is a middle ranking power with broad global interests. Its history, geography, culture, strategic circumstances and economy combine in a distinctive way to make an active foreign and trade policy essential. Australia's values, its record of constructive international engagement, its cultural diversity and the size, strength, and internationalisation of its economy underpin its participation in world affairs.

Australia has important links with all regions of the world. The countries which engage Australia's interests most substantially are those which influence its strategic and economic environment. Australia also aligns itself creatively with countries and groups of countries with which it shares specific interests.

Australia therefore pursues bilateral, regional and multilateral policies which are mutually supportive in advancing its national interests. In addition to maintaining and developing strong bilateral relationships, Australia advances its international interests by actively participating in regional and global institutions and forums.

Security issues have assumed even greater prominence. Australia has been at the forefront of international efforts to forge effective counter-terrorism cooperation, especially in the region, and to prevent the deployment and spread of weapons of mass destruction. Securing access to overseas markets and investment is crucial for Australia's prosperity. Australia is pursuing improved market access through the new round of multilateral trade negotiations in the World Trade Organization. At the same time, other endeavours achieve practical results for Australian businesses. They include the free trade agreement negotiations with the United States of America and other bilateral and regional efforts.

In 2003, the Government published Australia's second foreign and trade policy White Paper, *Advancing the National Interest*. The paper provides a comprehensive assessment of Australia's place in the world. It articulates how Australia can best use its considerable credentials and attributes to advance its national interests in an increasingly globalised and fluid international environment.

## **Australia's credentials and place in the international system**

Australia is well-equipped by its strengths to engage successfully internationally. These include its values, its make-up as a society, its robust political institutions, its open economy and its diverse international links. The values which Australia brings to its international engagement are those of a liberal democracy. These have been shaped by national experience and given vigour through cultural diversity and commitment to tolerance. They include the rule of law, freedom of the press and the accountability of the government to an elected parliament.

Australia has a modern industrial economy with a competitive and dynamic private sector, and a sophisticated manufacturing and services base. The Australian economy has been performing strongly, despite economic downturn and slower growth in some of its leading export markets. Over the past five years, Australia has been the fifth fastest growing economy in the Organisation for Economic Co-operation and Development, outperforming the United States of America, Canada and most countries in the European Union (EU).

Australia has a strong skills base, high quality education and training institutions, advanced physical infrastructure, and high rates of information technology use. Strong civil institutions underpin a free society and encourage free enterprise. Australia's cultural diversity gives Australian society the strength and capacity to adapt rapidly to new opportunities. It is also a rich source of language and other skills which help Australia to do business in a global economy.

The close relationship between international and domestic issues means that consultation within Australia assists the development of effective international policies. This is an important part of efforts to advance Australia's interests overseas.

## **Australia's bilateral relationships**

Australia is a Western country located in the Asia-Pacific region, with close ties and affinities with North America and Europe, and a history of active engagement throughout Asia.

As a nation with global interests, Australia has important links with all regions of the world. The countries which engage Australia's interests most

substantially are those which influence its strategic and economic environment. Australia seeks to make the most of its bilateral relationships, regardless of geography, and develops functional affinities with countries and groups of countries with which it shares specific interests. An advance in any one relationship need not be at the expense of others.

### **United States of America**

The United States of America is Australia's most important economic partner and closest security ally. It is the world's largest economy, leading trading nation, leading military power, and primary source of technological innovation. The relationship complements and reinforces Australia's practical commitment to the Asia-Pacific region, where the United States of America's engagement is fundamental to the region's security and prosperity. The bilateral relationship is underpinned by a program of high-level visits and consultations. The Australian Prime Minister visited the United States of America twice in 2003, and the President of the United States of America also visited Australia.

Australia's strategic alliance with the United States of America is formalised in the ANZUS Treaty, concluded in 1951. Australia and the United States of America cooperate closely in a range of areas to promote their own security and to contribute to broader regional and global security. The ANZUS Treaty was invoked by Australia for the first time in response to the terrorist attacks of 11 September 2001.

The shared strategic interests and values of Australia and the United States of America are complemented by dynamic trade and investment links. The United States of America is Australia's largest trading partner in terms of goods and services. A bilateral Free Trade Agreement (FTA) is under negotiation. This presents a unique opportunity to improve access to the United States of America market for Australian exporters and more closely integrate the economies of Australia and the United States of America. People-to-people ties, including educational and cultural links, are extensive and wide-ranging.

### **Japan**

Japan is the world's second largest economy and, as such, plays a primary economic and political role in our immediate region. Australia conducts close dialogue with Japan on a wide range of economic, political and strategic issues. This wide-ranging contact has enabled the

strengthening and deepening of a bilateral relationship founded on many shared interests. Japan is Australia's second largest individual trading partner, accounting for 14% by value of the total goods and services trade. It is a substantial investor in Australia and its second largest source of in-bound tourism behind New Zealand.

Like Australia, Japan supports the long-term strategic engagement of the United States of America in the Asia-Pacific region. It also has a bilateral alliance with the United States of America. Japan shares our interest in advancing Asia-Pacific Economic Cooperation (APEC) as a primary vehicle for regional economic cooperation. During the Australian Prime Minister's visit to Japan in July 2003, the Australian and Japanese Prime Ministers signed the Australia–Japan Trade and Economic Framework. The Framework includes a commitment by the two countries to work towards trade and investment liberalisation on a comprehensive basis through various avenues.

## **China**

China's importance to Australia has grown along with China's increasing economic, political and strategic engagement with the Asia-Pacific region and the global economy. China's relations with the countries of the Asia-Pacific region, particularly Japan and the United States of America, play a vital role in shaping the security context for the region. Australia encourages and supports Chinese participation in organisations which promote dialogue and cooperation on regional security issues. The bilateral relationship has matured and broadened to encompass dialogue and exchanges across a range of interests, further strengthened by a strong program of recent high-level visits in both directions.

Over the last decade, China has moved from being the tenth to the third largest partner in trade in goods and services with Australia, and the trade and investment relationship is expanding. Underpinning economic ties is Australia's long-term strategic energy partnership with China, including Australia's successful bid for the \$25b, 25-year contract to supply liquefied natural gas to China's Guangdong Province. Australia and China have agreed to negotiate a framework agreement which will explore opportunities to broaden and deepen the economic relationship.

Within the parameters of the one-China policy, Australia also pursues important economic and trade interests with Taiwan, its tenth largest trading partner in goods and services.

## **Indonesia**

As one of Australia's nearest neighbours, Indonesia has long been one of its most important bilateral relationships, encompassing political ties, trade and investment, people-to-people links and cultural exchanges. The breadth of the relationship is one of its strongest attributes, with strong education and tourist links supporting an increased understanding of both countries. Australia also maintains a large-scale bilateral program of economic, technical and humanitarian assistance to Indonesia. Indonesia is Australia's ninth largest trading partner in goods and services.

Productive, high-level head-of-government and ministerial contact in recent years has helped Australia and Indonesia work together on regional challenges. The cooperation with Indonesia to investigate the October 2002 Bali bombings is a clear indication of both nations' commitment to cooperative, mutually-beneficial engagement and to combating terrorism. Australia and Indonesia have also co-hosted regional conferences on people-smuggling and on money laundering and terrorist financing.

## **Korean Peninsula**

Relations between Australia and the Republic of Korea (ROK) have become increasingly complementary and productive in recent years, reflecting a growing commonality of interests, shared emphasis on the importance of the Asia-Pacific region and mutual recognition of the benefits of close cooperation. The ROK is Australia's sixth largest trading partner in goods and services and third largest export market.

Australia is active in support of attempts to resolve tensions on the Korean Peninsula, particularly after a series of escalatory steps by the Democratic People's Republic of Korea (DPRK) over its nuclear weapons program. Australia has been in close contact with key players (China, the DPRK, Japan, the ROK and the United States of America) to bring about a resolution. In January 2003, a delegation of senior Australian officials visited Pyongyang and registered firmly Australia's and the international community's deep concern about the DPRK's nuclear brinkmanship. Australia resumed diplomatic relations with the DPRK in May 2000 and the DPRK opened an embassy in

Canberra in May 2002. The embassy has been a valuable channel to continue dialogue with the DPRK.

## **Association of South East Asian Nations (ASEAN)**

ASEAN is the key regional political institution in South-East Asia and has been instrumental in promoting regional political harmony and stability for over 30 years. Australia values greatly its close relationship with ASEAN as a grouping, and with its member states (Brunei Darussalam, Burma, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam). Australia cooperates with ASEAN countries on a range of issues including terrorism and transnational crime. Trade, investment, education, development cooperation and people-to-people links are strong. The Closer Economic Partnership between ASEAN and Australia and New Zealand aims to reduce and remove impediments to trade and investment and lower business costs. Australia is also involved in the ASEAN Regional Forum, which promotes regional security dialogue and confidence building, as well as the ASEAN Post-Ministerial Conference. Australia's trade with South-East Asia accounted for 14% of total trade in goods and services.

## **East Timor**

As the world's newest nation and a close neighbour, East Timor is important to Australia. Australia worked closely with the United Nations (UN) and the East Timorese people in support of East Timor's stable transition to independence in May 2002, and continues to play a leading role in the UN post-independence mission in East Timor. Australia and East Timor signed the Timor Sea Treaty which provides an equitable basis for development of oil and gas resources in the Timor Sea. The Treaty will promote stability and economic development for East Timor. Australia is also one of East Timor's largest aid donors.

## **New Zealand**

Australia and New Zealand have traditionally been natural allies, with migration, trade and defence ties helping to shape the relationship. People-to-people links are strong; more than a million Australians and New Zealanders crossed the Tasman Sea in 2002, as tourists, for business purposes, or to visit family members. The Australia New Zealand Closer Economic Relations (CER) Trade Agreement, which creates a free-trade area between the two countries, celebrated its 20th anniversary in 2003. Since the

inauguration of the CER, two-way trade with New Zealand has greatly expanded. Australia is New Zealand's principal trading partner and the trans-Tasman trading relationship is Australia's fifth largest. At a government-to-government level, the bilateral relationship is more extensive than with any other country. The respective prime ministers hold formal talks frequently; foreign ministers meet biannually; and talks between treasurers and defence ministers are held annually.

## **The South Pacific**

Australia has a strong interest in the stability and economic viability of the island states of the Pacific. These countries face significant development challenges and, in some cases, political instability. Australia is the largest donor of development assistance to the South Pacific and is a major trade and investment partner for these countries. Australia supports local efforts to advance development and, where necessary, restore stability, in cooperation with other countries and institutions that have a long-term interest in the region.

Following a request for help from the Solomon Islands' Government in 2003, Australia is overseeing the implementation of a strengthened assistance program to achieve progress in addressing severe security and economic problems. This package is a unique initiative involving contributions from a number of South Pacific governments and the deployment of police, military and civilian personnel.

Australia pursues a close, constructive and friendly bilateral relationship with Papua New Guinea aimed at promoting political stability, effective governance and economic self-reliance there. The Australian-led Peace Monitoring Group in Bougainville wound up in 2003, but Australia continues to support the peace process in the province by leading and providing civilian personnel to the smaller Bougainville Transition Team.

## **Europe**

Australia's ties with the countries of Europe and the EU are extensive, covering economic engagement and security cooperation, and are underpinned by strong people-to-people links. The EU is an increasingly influential force in international affairs, with its membership set to increase from 15 to 25 countries in May 2004. Among EU members are some of the world's largest economies, including Germany, the United

Kingdom, France and Italy. The EU carries enormous economic weight. Considered as a single entity, the EU accounts for 19% of Australia's total trade in goods and services. In 2003, Australia and the EU adopted a five-year action plan, which provides a practical framework for cooperation across the bilateral relationship.

Australia has a particularly important relationship with the United Kingdom, based on vibrant trade and investment links, close alignment of security interests and shared values and history. In 2002, the United Kingdom was Australia's fourth largest trading partner in goods and services. It is also the second largest single country investor in Australia and the second largest destination for outward investment from Australia.

The key central and eastern European markets for Australia are Russia, Poland, Hungary, the Czech Republic and Romania, while the smaller transition economies (Slovenia, the Slovak Republic and Bulgaria) also offer trade opportunities for Australia. Australia's relations with these and other regional European countries have developed steadily in recent years, and will continue to do so as many of them prepare to become members of the EU.

## **South Asia**

India is growing in political, strategic and economic importance in global and regional affairs and is an increasingly important dialogue partner for Australia. Trade, investment and education links are expanding steadily. Long-standing tensions between India and Pakistan pose a significant threat to peace and security in the region. Australia contributed to international diplomatic efforts to prevent armed conflict between India and Pakistan in 2002. Tensions have since eased and Australia has joined others in the international community calling on India and Pakistan to work towards a negotiated settlement of their differences.

Following its participation in the US-led international intervention in Afghanistan against the Taliban regime and the associated al-Qaeda terrorist network, Australia is contributing to humanitarian and reconstruction assistance for Afghanistan.

## **Canada and Latin America**

Australia's relationship with Canada is mature, productive and broadly based. The two countries have been trading for more than 100 years and established formal diplomatic links over 60 years.

In addition to the active trade and investment relationship, Australia and Canada cooperate closely on international security, trade and environmental issues.

The size and diversity of the markets in the Latin American region offer significant opportunities for Australian exporters and investors, and trade and investment has expanded in recent years. Australia also pursues productive relationships with Latin American countries on a range of international political, trade liberalisation and economic issues.

## **The Middle East and Africa**

The Middle East is an area of strategic importance whose security issues engage the rest of the world, including Australia. Australia participated in the international coalition to disarm Saddam Hussein and liberate the people of Iraq, and is contributing to efforts to meet the humanitarian and longer-term reconstruction needs of the Iraqi people. Australia also has growing commercial interests in the Middle East, a significant destination for Australian agriculture, services and manufactured exports. The Middle East has been the fastest growing regional market for Australian exports over the past decade.

Australia's most significant relationship in Africa is with South Africa, which is an important market for Australia's commercial interests and provides a base for trade with all the countries of the Southern African Development Community. Australia is a strong supporter of the International Monetary Fund/World Bank Heavily Indebted Poor Countries initiative as the most credible way to provide sustainable debt relief, especially in Africa. Australia also engages with African states through our membership of the Commonwealth and the UN.

## **Australia's security interests**

The security environment for Australia, both regionally and beyond, is fluid and uncertain. The key components of Australia's security strategy are maintaining a strong national defence capability, the security alliance with the United States of America, developing bilateral defence and security relationships with countries throughout the Asia-Pacific region, and strengthening multilateral security links in the region, especially the ASEAN Regional Forum (ARF). Australia is closely engaged in international counter-terrorism efforts — an imperative reinforced by the Bali bombings in October 2002. Australia has concluded several

bilateral agreements and arrangements promoting closer cooperation on counter-terrorism within its region.

Regular bilateral security dialogues with key countries in the Asia-Pacific region, and with key partners beyond the region, provide an opportunity to share views on a wide range of regional and global security issues, promote transparency and reinforce Australia's commitment to working cooperatively with regional countries on security issues. The ARF is an important means of encouraging a sense of strategic community in the region. It complements bilateral links when dealing with global and regional security issues and has a role in encouraging regional support for international regimes against the proliferation of weapons of mass destruction.

Australia continues to play an active role in strengthening the international regimes to prevent the proliferation of nuclear, chemical and biological weapons and of missiles. Australia also pursues conventional arms control and disarmament initiatives. An important Australian objective is to ensure that these regimes are implemented effectively in our region. Australia also works bilaterally and through various forums to combat transnational crime.

## **Australia's economic interests**

Australia's economic wellbeing and growth depend on a competitive domestic economy and access to foreign markets and investment. Trade policy, industry policy and microeconomic reform all work to provide Australian business with the competitive foundations and opportunities to thrive in an increasingly globalised marketplace. Australia's trade policy combines mutually reinforcing multilateral, regional and bilateral efforts to advance its commercial interests. Strategies focus on reducing barriers and developing markets for Australian exports, services and investment.

As with Australia's security interests, Australia's economic interests are most closely engaged in the Asia-Pacific region. In 2002, 70% of Australia's exports of goods and services went to member economies of the APEC forum. APEC members accounted for 47% of Australian foreign direct investment at June 2002.

For a major trading nation like Australia, the World Trade Organization (WTO) is of particular significance. It is the chief forum for global trade

liberalisation and, through its rules and disciplines, provides a predictable and more transparent environment for trans-border business. It also provides an important means of resolving trade disputes. Australia chairs the Cairns Group of WTO member countries seeking fair trade in agricultural products.

The key multilateral trade objective for Australia is the successful conclusion of the new round of WTO trade negotiations, launched in Doha in November 2001. The Doha Declaration gives specific commitment to negotiations on a wide range of issues, including services, industrial products, intellectual property, WTO rules (including anti-dumping), dispute settlement and some trade and environment issues. The round offers Australia potentially a substantial improvement in access to global markets — particularly in agriculture, services and industrial products — and secure trading conditions. Australia was disappointed that the fifth WTO ministerial conference in Mexico in September 2003 did not take the necessary decisions to advance the negotiations. Australia remains committed to achieving a substantial market access outcome and is actively encouraging all other WTO members to continue to engage constructively in the negotiations.

Engaging in the region, Australia is committed to achieving APEC's goals of free and open trade and investment. The implementation of these goals will bring considerable long-term benefits for Australia and the region. APEC's 'three pillars' — trade and investment liberalisation, business facilitation, and economic and technical cooperation — form the basis of its work. APEC also supports multilateral trade negotiations in the WTO, and emphasises private sector participation in its activities.

Leaders from the 21 APEC member economies meet annually to develop strategies for promoting growth and economic development in the Asia-Pacific region. They also hold informal discussions on current regional and international issues. Ministers, government officials and all sectors of business and industry also cooperate to reduce the barriers to trade and investment.

Australia has indicated it is prepared to consider concluding with important trading partners bilateral FTAs which would complement its multilateral efforts and deliver early benefits in the form of improved access to markets for Australian exporters and enhanced conditions for trade and investment. In 2003, Australia concluded an FTA

with Singapore and negotiations for FTAs are currently underway with the United States of America and Thailand. Australia's regional economic presence is further enhanced by key agreements: the Australia-Japan Trade and Economic Framework (signed in 2003), the CER Agreement (agreed in 1983), and the ASEAN Free Trade Area — CER Closer Economic Partnership (concluded in 2003). Efforts are also underway to strengthen the trade relationships with China and other countries in the East Asian region.

## **Australia's engagement with the United Nations (UN) system**

Australia was a founding member of the UN in 1945 and has been actively engaged in the organisation since then. Australia pursues important national interests in the UN system, with its participation focused on achieving practical, constructive and realistic outcomes for the betterment of both present and future Australians. The principal body, the General Assembly and its committees, is complemented by specialised agencies like the World Health Organization, and affiliated organisations, such as the International Atomic Energy Agency. Under the UN Charter the Security Council has primary responsibility for maintaining international peace and security.

Australia places high priority on the UN's efforts to promote multilateral cooperation in core areas: international security and disarmament; the development of international legal instruments and norms; the provision of humanitarian assistance; and protection of the environment and sustainable development. Priorities over the past year have included strengthening multilateral cooperation on anti-terrorism and the establishment of the International Criminal Court.

Australia is actively involved in negotiations on the Draft Declaration on the Rights of Indigenous Peoples and supports the work of the Permanent Forum on Indigenous Issues as the pre-eminent UN body dedicated to coordinating and promoting UN efforts relating to indigenous issues.

Reform of the UN is an important objective for Australia. The aim is to ensure that the UN system can respond effectively to changing circumstances and deliver better outcomes more efficiently for member states and their people.

## **The Commonwealth**

Australia also values the Commonwealth, an association of 54 countries dedicated to promoting political principles of importance to Australia: democracy, good governance and the rule of law. Australia is one of the largest financial contributors to the Commonwealth and participates actively in its affairs, including taking a leading role in the Commonwealth's response to the situation in Zimbabwe. Australia hosted the CHOGM (Commonwealth Heads of Government Meeting) in 2002 and the Australian Prime Minister subsequently completed his term as the Commonwealth Chairman-in-Office at the end of 2003. Australia (represented by the Foreign Minister) participates in the Commonwealth Ministerial Action Group.

## **Australia's human rights policy**

Australia takes an active and constructive approach to improving human rights standards and systems internationally, including through targeting development cooperation programs; supporting the establishment of national human rights institutions and good governance; encouraging multilateral, regional and bilateral discussion of human rights issues; and working to develop and strengthen the effectiveness of regional and international human rights institutions and instruments. Australia was elected to serve on the UN Commission on Human Rights for a three-year term from 2003 and served in 2003 a one-year term as Vice-Chair of the Commission. In addition to working through multilateral forums, Australia promotes human rights through bilateral dialogues with individual countries. Australia holds regular bilateral discussions with China, Vietnam and Iran.

## **The role of DFAT in Australia's international relations**

The Department of Foreign Affairs and Trade (DFAT) is the principal source of advice to the Australian Government on foreign and trade policy issues and is the agency primarily responsible for implementing the Government's foreign and trade policies.

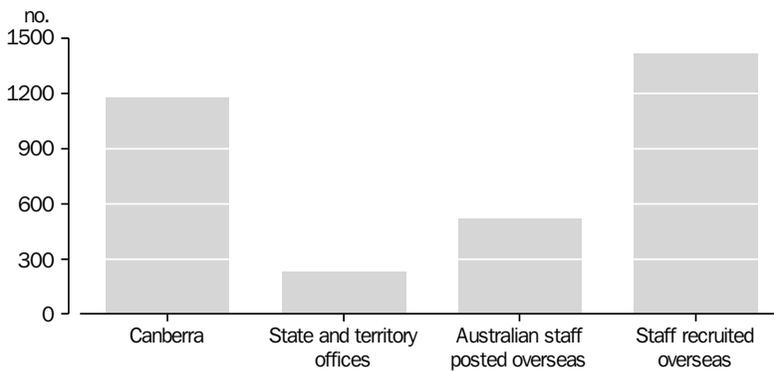
Its aim is to advance the interests of Australia and Australians internationally. The department's staff in Canberra, in state and territory offices in Australia, and Australian diplomatic missions around the world, work towards the achievement of four primary outcomes:

- Australia's national interests protected and advanced through contributions to international security, national economic and trade performance, and global cooperation
- Australians informed about and provided access to consular and passport services in Australia and overseas
- public understanding in Australia and overseas of Australia's foreign and trade policy and a positive image of Australia internationally
- efficient management of the Australian Government overseas owned estate.

## Location and number of DFAT staff

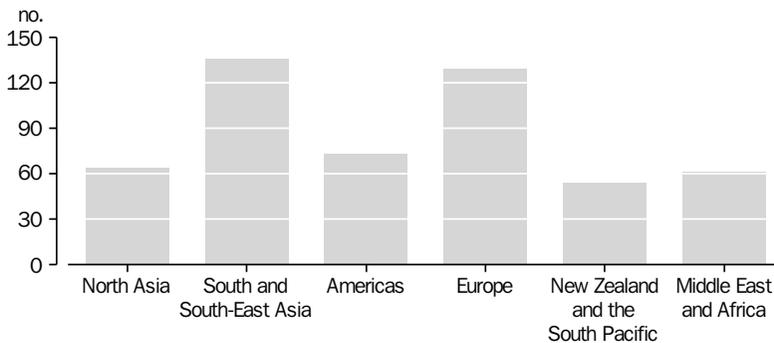
Graph 3.1 shows the location of DFAT staff. Graph 3.2 shows the number of Australia-based DFAT staff overseas by region.

**3.1 LOCATION OF DFAT STAFF — 30 June 2003**



Source: Department of Foreign Affairs and Trade.

**3.2 LOCATION OF AUSTRALIA-BASED DFAT STAFF POSTED OVERSEAS — 30 June 2003**



Source: Department of Foreign Affairs and Trade.

## Services to the Australian community

DFAT provides consular and passport services to Australians travelling overseas and their families in Australia through its network of overseas missions and honorary consulates, the 24-hour Consular Emergency Centre in Canberra and consular cooperation arrangements with other countries. The services the department provides include: assisting Australians who are hospitalised, imprisoned or require welfare assistance overseas; helping family members when Australian travellers die or go missing; and coordinating evacuations from international trouble spots. Overseas, this support is provided through Australia's consular network, which comprises 165 points of consular service worldwide.

The department also provides timely and comprehensive travel advice to Australians overseas and those who are planning to travel. These advisories ensure Australians are well-informed and well-prepared for travel overseas and assist travellers to avoid dangers and difficulties. They provide up-to-date information about the security environment in a particular country, including in relation to possible terrorist threats or problems with law and order. They also provide advice on a range of practical issues like visa requirements, health and medical issues and cultural or religious differences.

The department provides secure travel documents to eligible Australians in accordance with the provisions of the *Passports Act 1938* (Cwlth) and other relevant legislation. Passport services are provided through passport offices located in Australia's major cities and diplomatic and consular missions overseas. International security concerns impact on passport issuing processes and DFAT places a strong emphasis on identity verification and fraud prevention.

## Public information services

DFAT provides a range of information services on foreign and trade policy to the Australian public and media, including through briefings and public presentations, and the production of public affairs material such as brochures, reports and publications. It also promotes an accurate, positive and contemporary image of Australia internationally focusing on technical capabilities, record of innovation, achievements in science and

industry, and cultural diversity. Officials from the department provide regular media briefings on issues of the day.

Detailed information about Australia's foreign and trade policy can be obtained from the DFAT web site, <<http://www.dfat.gov.au>>. The department also produces hard copy publications on many foreign and trade policy issues, which are available from the department. Further information and links are listed in the Bibliography.

## The Australian Overseas Aid Program

The Australian Overseas Aid Program aims to advance the national interest by assisting developing countries to reduce poverty and achieve sustainable development. Australian aid provides practical, well-targeted development assistance to the Asia-Pacific region and responds selectively to needs in South Asia, Africa and the Middle East. The aid program also responds to international emergency and humanitarian crises. Recent world events, and a tight fiscal environment within Australia, reinforce these priorities and demand a flexible aid program that can respond quickly and effectively to emerging challenges confronting Australia's developing country partners.

Within the Asia-Pacific region, many countries are facing significant challenges to their stability and security. Conflict and instability impact directly on countries' development prospects. The aid program can, and does, provide a 'peace dividend' to encourage the cessation of hostilities and the start of constructive development. The aid program is an integral part of Australia's engagement with the Asia-Pacific region and a practical demonstration of a commitment to helping build regional stability and prosperity.

In 2003–04, the Australian Government is providing an estimated \$1.894b as Official Development Assistance (ODA), an increase of \$79m over the 2002–03 figure of \$1.815b. Details of ODA to partner countries in 2003–04 are set out in table 3.3. The ratio of Australia's ODA to gross national income for 2003–04 is estimated at 0.25%, placing Australia above the donor average which, in the latest year available (2002), is 0.23%.

Further information and publications on the Australian Government's aid program can be obtained from the web site of the Australian Agency for International Development, <<http://www.ausaid.gov.au>>.

### 3.3 AUSTRALIAN OFFICIAL DEVELOPMENT ASSISTANCE — 2003–04(a)

	\$m
Papua New Guinea and Pacific	
Papua New Guinea	333.6
Solomon Islands	37.4
Vanuatu	22.7
Fiji	20.0
Samoa	16.3
Tonga	11.7
Kiribati	11.4
Tuvalu	3.8
Regional Pacific and other	52.5
Total	509.4
East Asia	
Indonesia	151.7
Vietnam	72.1
Philippines	62.4
China	50.7
Cambodia	44.4
East Timor	42.5
Laos	20.4
Thailand	15.1
Regional East Asia and other	31.7
Total	491.1
South Asia, Africa and rest of world	
Bangladesh	32.3
India	22.6
Sri Lanka	16.2
Nepal	7.4
Pakistan	5.2
Regional South Asia and other	28.5
Africa	61.4
Middle East	37.8
Rest of world	70.8
Total	282.1
Other Government Department (OGD)(b)	137.1
Core contributions to multilateral organisations, other ODA(c)	449.3
Reconciliation of expenses to cash(d)	24.8
<b>Total ODA (cash)</b>	<b>1 893.8</b>

(a) Budget estimates for 2003–04. (b) OGD includes ODA eligible expenditure by government departments which has not been allocated to a particular country or region.

(c) Includes core contributions and cash payments to multilaterals that cannot be attributed to a particular country. (d) Includes accrual adjustments for non-ODA eligible (Administered and Departmental) expenditure.

Source: AusAID.

### The Australian Agency for International Development (AusAID)

AusAID manages Australia's overseas aid program on behalf of the Australian Government. Actual delivery of the aid program is outsourced. In 2003–04, AusAID will be well advanced in moving

more towards in-country activity management to enhance decision-making at the local level and promote more dialogue with partner governments.

### Key themes of the aid program

Five guiding themes shape Australia's efforts to assist developing countries to reduce poverty and achieve sustainable development. These themes provide a lens through which aid is programmed and implemented:

- *Governance*: promoting democratic and accountable government and effective public administration
- *Globalisation*: assisting developing countries to access and maximise the benefits from trade and new information technologies
- *Human Capital*: supporting stability and government legitimacy through improved basic services
- *Security*: strengthening regional security by enhancing partner governments' capacity to prevent conflict, enhance stability and manage trans-boundary challenges
- *Sustainable Resource Management*: promoting sustainable approaches to the management of the environment and the use of scarce natural resources.

Country and regional strategies are developed in consultation with partner governments. They are the primary means through which the guiding themes are translated into programs on the ground. Strategies take account of partner government priorities, Australia's strengths, and the activities of other donors.

### Country programs

#### Papua New Guinea

Papua New Guinea is the largest aid program Australia has with any one country. The aid program focuses on Papua New Guinea's long-term development needs. Principal objectives include enhancing the quality of governance, particularly with respect to the management of public expenditure; encouraging broad-based sustainable growth; and addressing the underlying causes of conflict and instability.

The main initiative in the Papua New Guinea governance program in 2003–04 is AusAID's participation with the World Bank and Asian Development Bank in the Government of Papua New Guinea's Public Expenditure and Rationalisation Review. The aid program also supports service delivery in the areas of health, education, and water and sanitation. Assistance for law and justice reform with an emphasis on local ownership and providing ongoing assistance to support Papua New Guinea's response to the HIV/AIDS epidemic are also key priorities. Australia's assistance is also helping Bougainville's shift to an autonomous province and supports long-term development goals of stability and economic growth.

### **The Pacific region**

Pacific Island Countries (PICs) are notable for their cultural, physical and political diversity. Their remoteness from global markets, narrow economic and natural resource bases, and vulnerability to natural disasters constitute a daunting challenge in maintaining positive development paths in a dynamic global environment. The serious effects of recent political instability and internal conflict, particularly in Melanesian countries, are making the task of poverty reduction and sustainable development even more difficult.

Australia maintains a close relationship with PICs and is committed to long-term engagement to assist with their national development efforts. Australia is one of the region's major donors and our goal is to assist PICs achieve the maximum possible degree of self-reliance. To achieve this, a new Pacific strategy for 2003–06 will focus on assistance on economic reform and strengthening governance, support for law and justice, democratic institutions and conflict resolution, and service provision, including in regional and provincial areas.

In the Pacific, Australia has bilateral aid programs with the Solomon Islands, Vanuatu, Fiji, Samoa, Tonga, Kiribati and Tuvalu. Australia also provides technical assistance and other aid, including commodities and scholarships to other Pacific states including Marshall Islands, Cook Islands, Tokelau and Nauru.

Australia places a high priority on regional peace, stability and security in the Pacific. Functioning law and justice systems are important given the vulnerability of some countries within the region

to illicit commercial ventures and trans-national crime, including money laundering, people smuggling and terrorism.

Achieving a return to stability in Solomon Islands is a key focus for Australia in 2003–04. The aid program is playing a central role in Australia's strengthened assistance to Solomon Islands and is expected to increase significantly. The expanded aid program will build on ongoing activities which, since 2000, have been addressing the country's most critical problems. Priorities include: strengthening law and justice; improving economic management; maintaining access to basic services, especially health; and supporting peace building and community and civil society development.

The aid program in the Pacific will also reflect the increased focus on regional stability through bilateral law and justice activities in Vanuatu, Fiji, Samoa, Tonga and Nauru. A priority is to improve the functioning of legal, justice and accountability institutions such as police forces, attorney-general and courts. Bilateral assistance will be provided for customs, immigration, border control and electoral activities in selected countries.

Pacific regional organisations play an important role in allowing their island members to benefit from economies of scale in accessing technical and capacity building assistance. Australia is a key contributor to the Pacific Islands Forum Secretariat, the South Pacific Regional Environment Program, the University of the South Pacific, the Forum Fisheries Agency, the Secretariat of the Pacific Community, the South Pacific Geoscience Commission and the Fiji School of Medicine.

### **East Asia**

Achieving economic growth and poverty reduction remains a key challenge for many East Asian countries in 2003–04. Key factors will be the health of the world economy, security and the demand for regional exports. Australia promotes economic growth and aims to secure a more conducive environment for development and poverty reduction for partner countries in East Asia. In 2003–04, the aid program will work with regional partners to improve governance, promote trade and investment, and counter trans-national threats such as disease, drugs, illegal people movements and terrorism.

In East Asia, Australia has bilateral programs with Indonesia, Vietnam, the Philippines, China, Cambodia, East Timor, Thailand, Laos and Burma. The aid program in Indonesia is Australia's second largest. Over the period 2003–04, Australian aid to Indonesia is focusing on improving economic and public sector management; strengthening the institutions and practices of democracy; enhancing security and stability; and increasing the accessibility and quality of basic social services. In East Timor, Australia is making major investments in building the Government's capacity in planning, finance, fisheries and the marine environment. Australia also works closely with other donors to support East Timor's post-independence National Development Plan. In Vietnam, Australia is building capacity in trade policy and development, providing better access to clean water and sanitation, and strengthening provincial government service delivery. In the Philippines, the aid program will focus on strengthening the delivery of basic education, health and local government services, and continue to support multilateral peace building, conflict resolution and recovery efforts in the southern Philippines island of Mindanao. In China, Australia will commence a new program of governance assistance and also focus on water-related projects in flood management, improved agricultural productivity and HIV/AIDS prevention.

Working with effective non-government organisations (NGOs) and UN agencies, Australian assistance to Burma is addressing the dire humanitarian crisis, particularly the health emergency that continues to engulf the country.

The Asia regional program promotes good governance, trade and economic integration and solutions to security-related challenges that cut across national boundaries. Support is focused on prevention of HIV/AIDS, customs, e-commerce, trade facilitation, food quality and counter terrorism measures.

### **South Asia**

South Asia contains nearly half of the world's most impoverished people. Australian bilateral assistance is provided in Bangladesh, India, Sri Lanka, Nepal and Pakistan. Australian aid in the region over the period 2003–07 will move towards delivering aid through more flexible and less resource intensive mechanisms, predominantly via

international organisations, the Australian Development Scholarships Program, NGOs and regional mechanisms.

Australian programs continue to assist South Asian countries in their efforts to promote good governance and improve basic service delivery at the state and community level. The aid program also supports South Asia regional programs in microfinance, arsenic reduction, trade facilitation, and reforms of water and sanitation policies and practices. Australia is assisting in reconstruction efforts in Afghanistan, particularly in the eradication of land mines and the rebuilding of governance institutions.

### **Africa and the Middle East**

The international community has mounted a concerted effort to assist Africa in its enormous challenge of achieving economic growth and poverty reduction. Australian assistance is increasingly channelled through international organisations and NGOs with well-established expertise in Africa. Addressing communicable diseases, particularly the HIV/AIDS epidemic remains a high priority.

In the Middle East, Australia responds to urgent humanitarian needs, and the rebuilding of livelihoods. Assistance to the Palestinian territories will be delivered primarily through multilateral agencies and NGOs. Australia will provide practical assistance to peace and recovery in Iraq, particularly in agriculture, food security, water and health.

### **Global programs**

#### **Emergency, humanitarian and refugee aid**

Australia's emergency, humanitarian and refugee programs lessen the adverse impact of conflict and natural disasters on vulnerable populations, supporting the promotion of peace and security.

Increased funding in 2003–04 for humanitarian, emergency and refugee programs will enhance the aid program's ability to respond quickly, flexibly and effectively to humanitarian needs resulting from disasters and conflict. While humanitarian crises within Australia's immediate region are a priority for assistance, other significant demands are likely to include further humanitarian relief and reconstruction assistance to Iraq, post-conflict support for Afghanistan and food needs following severe drought in southern Africa.

## **Multilateral and international organisations**

Australia's support for multilateral and international organisations complements and reinforces Australia's bilateral aid efforts. Australia supports a range of development banks and in 2003–04 will continue to work with the Asian Development Bank (ADB) and the World Bank to progress their reform agendas and ensure their ongoing engagement in the Asia-Pacific region. Cooperation at both a policy and a program level between the multilateral development banks and Australia helps to increase the impact of our aid. In Papua New Guinea, the World Bank, ADB, and Australia are developing a coherent joint strategy for future engagement. Australia is also working closely with the World Bank on information and communication technologies, most prominently through the \$200m Virtual Colombo Plan.

Australian aid also supports the efforts to address global environmental concerns, including climate change, biodiversity loss, degradation of international waters, ozone depletion, and persistent organic pollutants. In 2003–04, Australia will contribute to the Montreal Protocol Multilateral Fund to assist in these efforts.

The aid program monitors UN effectiveness, formalises strategic partnerships and strengthens engagement with UN organisations to enhance aid outcomes in the Asia-Pacific region. The World Food Program and UNICEF remain important partners for Australian assistance.

## **Non-government organisation (NGOs) and volunteer programs**

NGOs play an important complementary role in delivering a high quality aid program. The Australian aid program works with NGOs on improving program delivery, enhancing administration and accountability as well as supporting improvements in project design, management and evaluation.

Australia continues to foster community involvement in the aid program through support for volunteers. Funding for the Australian Youth Ambassadors for Development program has increased from \$6.2m in 2002–03 to \$7m in 2003–04.

## **Australian Centre for International Agricultural Research (ACIAR)**

ACIAR is a statutory authority within the Foreign Affairs and Trade portfolio. As part of Australia's aid program it assists Australian and developing country researchers, institutions and international research centres to develop solutions to agricultural problems in order to improve livelihoods through sustainable increases in agricultural productivity and enhanced natural resources management to the benefit of developing countries and Australia. Government appropriation for ACIAR in 2002–03 was \$46.3m. The Centre focuses its research funding on the Asia-Pacific region and also supports international agricultural research centres.

In 2002–03, ACIAR funded 221 research projects. The Centre also supported 54 Fellowships allowing students from developing countries to study for postgraduate qualifications in Australia. Sixteen training courses were held for scientists involved in ACIAR-supported research. Twenty scientific publications, including monographs, proceedings of workshops and technical reports were published.

Further information can be obtained from the ACIAR web site, <<http://www.aciar.gov.au>>. The site allows visitors to search for project information by country, or by research discipline and to find out about ACIAR activities.

## **The network of Australian diplomatic and consular missions overseas**

DFAT manages an extensive network of Australian diplomatic and consular missions abroad (tables 3.4–3.6), supporting Australia's international interests and providing consular and passport services. The department's central office is in Canberra and it also maintains offices in all of the state capitals and in Darwin, as well as Newcastle and Thursday Island.

**3.4 AUSTRALIAN EMBASSIES, HIGH COMMISSIONS, CONSULATES AND MULTILATERAL MISSIONS  
MANAGED BY DFAT(a) — 30 June 2003**

Country of location	City	Post type
Argentina	Buenos Aires	Embassy
Austria	Vienna	Embassy/Permanent Mission to the United Nations
Bangladesh	Dhaka	High Commission
Barbados	Bridgetown	High Commission
Belgium	Brussels	Embassy/Mission to the European Union
Brazil	Brasilia	Embassy
Brunei Darussalam	Bandar Seri Begawan	High Commission
Burma	Rangoon	Embassy
Cambodia	Phnom Penh	Embassy
Canada	Ottawa	High Commission
Chile	Santiago	Embassy
China, People's Republic of	Beijing	Embassy
	Guangzhou	Consulate-General
	Hong Kong SAR	Consulate-General
	Shanghai	Consulate-General
Croatia	Zagreb	Embassy
Cyprus	Nicosia	High Commission
Denmark	Copenhagen	Embassy
East Timor	Dili	Embassy
Egypt	Cairo	Embassy
Federated States of Micronesia	Pohnpei	Embassy
Fiji	Suva	High Commission
France	Paris(b)	Embassy
	Paris	Delegation to the OECD
Germany	Berlin	Embassy
Greece	Athens	Embassy
Hungary	Budapest	Embassy
India	New Delhi	High Commission
Indonesia	Jakarta	Embassy
	Bali (Denpasar)	Consulate-General
Iran	Tehran	Embassy
Ireland	Dublin	Embassy
Israel	Tel Aviv	Embassy
Italy	Rome	Embassy
Japan	Tokyo	Embassy
Jordan	Amman	Embassy
Kenya	Nairobi	High Commission
Kiribati	Tarawa	High Commission
Korea, Republic of	Seoul	Embassy
Laos	Vientiane	Embassy
Lebanon	Beirut	Embassy
Malaysia	Kuala Lumpur	High Commission
Malta	Valletta	High Commission
Mauritius	Port Louis	High Commission
Mexico	Mexico City	Embassy
Nepal	Kathmandu	Embassy
Netherlands	The Hague	Embassy
New Caledonia	Noumea	Consulate-General
New Zealand	Wellington	High Commission
Nigeria	Lagos(c)	High Commission
Pakistan	Islamabad	High Commission
Papua New Guinea	Port Moresby	High Commission
Philippines	Manila	Embassy
Poland	Warsaw	Embassy
Portugal	Lisbon	Embassy
Russia	Moscow	Embassy
Samoa	Apia	High Commission

For footnotes see end of table.

...continued

### 3.4 AUSTRALIAN EMBASSIES, HIGH COMMISSIONS, CONSULATES AND MULTILATERAL MISSIONS MANAGED BY DFAT(a) — 30 June 2003 — *continued*

Country of location	City	Post type
Saudi Arabia	Riyadh	Embassy
Serbia and Montenegro(d)	Belgrade	Embassy
Singapore	Singapore	High Commission
Solomon Islands	Honiara	High Commission
South Africa	Pretoria	High Commission
Spain	Madrid	Embassy
Sri Lanka	Colombo	High Commission
Sweden	Stockholm	Embassy
Switzerland	Geneva	Permanent Mission to the United Nations
	Geneva	Permanent Mission to the WTO/Consulate-General
Thailand	Bangkok	Embassy
Tonga	Nuku'alofa	High Commission
Turkey	Ankara	Embassy
United Arab Emirates	Abu Dhabi	Embassy
United Kingdom	London	High Commission
United States of America	Washington DC	Embassy
	Chicago	Consulate-General
	Honolulu	Consulate-General
	Los Angeles	Consulate-General
	New York	Consulate-General
	New York	Permanent Mission to the United Nations
Vanuatu	Port Vila	High Commission
Vatican City	Vatican City(e)	Embassy
Venezuela	Caracas	Embassy
Vietnam	Hanoi	Embassy
	Ho Chi Minh City	Consulate-General
Zimbabwe	Harare	High Commission

(a) In Baghdad, the Australian Government maintains the Australian Representative Office. The Office facilitates our contribution to Iraq's rehabilitation, liaises with the Coalition Provisional Authority and key Iraqis, pursues other Australian interests, including in the commercial sphere and provides limited consular services to Australian citizens in Iraq. In Nauru, the department maintains an Australian Administrative Centre to facilitate mutual cooperation on processing applications from asylum seekers. In Ramallah, the Australian Government maintains the Australian Representative Office. The Office manages dealings with the Palestinian Authority in the West Bank and Gaza and has responsibility for Australia's development assistance program for the Palestinians. In Taipei, the Australian Chamber of Commerce and Industry maintains the Australian Commerce and Industry Office, the staff of which includes staff seconded from the Department of Foreign Affairs and Trade, Austrade, the Department of Education, Science and Training and the Department of Immigration and Multicultural and Indigenous Affairs. (b) The permanent delegation to UNESCO is located within the embassy in Paris. (c) The high commission moved to Abuja on 8 September 2003. (d) The Federal Republic of Yugoslavia (FRY) was officially dissolved on 4 February 2003 after the establishment of the state of Serbia and Montenegro. (e) Embassy to the Holy See.

Source: *Department of Foreign Affairs and Trade.*

### 3.5 CONSULATES MANAGED BY AUSTRADE — 30 June 2003

Country of location	City	Post type
Brazil	Sao Paulo	Consulate-General
Canada	Toronto	Consulate-General
Germany	Frankfurt	Consulate-General
India	Mumbai	Consulate-General
Italy	Milan	Consulate-General
Japan	Fukuoka	Consulate-General
	Nagoya	Consulate
	Osaka	Consulate-General
	Sapporo	Consulate
	Sendai	Consulate
New Zealand	Auckland	Consulate-General
Peru	Lima	Consulate-General
Romania	Bucharest	Consulate-General
Turkey	Istanbul	Consulate-General
United Arab Emirates	Dubai	Consulate-General
United States of America	Atlanta	Consulate-General
	San Francisco	Consulate-General

Source: *Department of Foreign Affairs and Trade.*

**3.6 CONSULATES HEADED BY HONORARY  
CONSULS — 30 June 2003**

Country of location	City
Angola	Luanda(a)
Bolivia	La Paz
Brazil	Rio de Janeiro
Bosnia-Herzegovina(b)	Sarajevo(a)
Bulgaria	Sofia
Canada	Vancouver
Colombia	Bogota
Czech Republic	Prague
Ecuador	Guayaquil
Estonia	Tallinn
Finland	Helsinki
Former Yugoslav Republic of Macedonia	Skopje
French Polynesia	Papeete
Ghana	Accra(a)
Greece	Thessaloniki
Indonesia	Balikpapan(a)
	Kupang(a)
	Medan
Korea, Republic of	Pusan
Latvia	Riga(a)
Lithuania	Vilnius
Malaysia	Kota Kinabalu
	Kuching
	Penang
Mexico	Guadalajara
	Monterrey
Mozambique	Maputo
Norway	Oslo
Pakistan	Karachi
Papua New Guinea	Lae
Russia	St Petersburg
	Vladivostok
Slovenia	Ljubljana
South Africa	Cape Town(a)
	Durban
Spain	Barcelona
	Seville
Thailand	Chiang Mai(a)
	Koh Samui
Ukraine	Kyiv
United Kingdom	Edinburgh
	Manchester
United States of America	Boston(a)
	Denver
	Detroit
	Houston
	Miami
	Seattle
Uruguay	Montevideo

Note: This list includes all locations for which a bilateral agreement is current. (a) Currently vacant. (b) During the year the Government of Bosnia-Herzegovina agreed to the establishment of a Consulate headed by an Honorary Consul in Sarajevo.

Source: *Department of Foreign Affairs and Trade.*

# Bibliography

## Web sites

Australian Agency for International Development (AusAID) <<http://www.ausaid.gov.au>>. AusAID's site contains a range of information, including:

Country information, <<http://www.ausaid.gov.au/country>>

Global Education, <<http://globaled.ausaid.gov.au>>

Hot topics, <<http://www.ausaid.gov.au/hottopics>>

Publications, <<http://www.ausaid.gov.au/publications>>

Australian Centre for International Agricultural Research, <<http://www.aciar.gov.au>>

Australian Safeguards and Non-Proliferation Office, <<http://www.asno.dfat.gov.au>>

Australian Trade Commission (Austrade), <<http://www.austrade.gov.au>>

Business in APEC, <<http://www.bizapec.com>>

Department of Foreign Affairs and Trade (DFAT) web site <<http://www.dfat.gov.au>> provides a range of comprehensive and up-to-date material on Australia's foreign and trade policy. The department also produces hard copy publications on many foreign and trade policy issues, which are available from the department (Telephone: Canberra 02 6261 1111). The web site contains a browsable list of topic categories, as well as a continually updated current issues list. Documents of interest available from the web site include:

Advancing the National Interest: White Paper on Australia's Foreign and Trade Policy

Department of Foreign Affairs and Trade Annual Reports

Hints for Australian Travellers

Portfolio Budget Statements

Trade Outcomes and Objectives Statement

For information about:

Australia's bilateral relationships, <<http://www.dfat.gov.au/geo/>>

Australian foreign missions overseas, <<http://www.dfat.gov.au/missions/>>

Australia's human rights policy, <<http://www.dfat.gov.au/hr>>

Australia's international environmental activities, <<http://www.dfat.gov.au/environment>>

Australia's international treaty commitments, <<http://www.austlii.edu.au/au/other/dfat>>

Australians travelling overseas, <<http://www.dfat.gov.au/travel>> and <<http://www.dfat.gov.au/consular/hints/index.html>>

Passport information, <<http://www.passports.gov.au/>>

Publications, <<http://www.dfat.gov.au/publications/>> and publications by the Economic Analytical Unit, <<http://www.dfat.gov.au/eau>>

Trade and investment, <<http://www.dfat.gov.au/trade/>>, <<http://www.dfat.gov.au/facts/index.html>> and <<http://www.tradewatch.dfat.gov.au>>

Export Finance and Insurance Corporation (EFIC), <<http://www.efic.gov.au>>



# 4

## DEFENCE

*This chapter was contributed by the Australian Government Department of Defence.*

This chapter provides an outline of the roles and activities of the Australian Defence Force and the Department of Defence (hereafter referred to as 'Defence'). In particular, it focuses on the strategic environment, current operations and capability. The chapter also shows trends in Defence spending, and looks at the composition of the workforce.

## Strategic environment

In February 2003, the Minister for Defence published an update to Australia's defence policy, *Australia's National Security: A Defence Update 2003*. The 2003 Defence Update described Australia's changed strategic circumstances and identified the need for some re-balancing of capabilities and priorities to take account of the new strategic environment. The major changes to the strategic environment identified in the 2003 Defence Update were the emergence of new and more immediate threats from terrorism and increased concerns about the proliferation of weapons of mass destruction. The 2003 Defence Update also noted the continuing economic, political, governance and social challenges facing countries in the region.

The effects of globalisation continue to shape Australia's regional environment, exposing it to issues including global security threats, as illustrated by the terrorist attacks in Bali on 12 October 2002.

The terrorist threat to Australia and its interests has increased, both domestically and overseas. Terrorism now operates on a global level: organisations are no longer contained within states, but increasingly draw upon people, money and equipment organised across national borders.

The prospect of a conventional military attack on Australian territory remains low due to the reduction in major power tensions affecting Australia and the deterrent effect of the alliance with the United States of America, which remains the dominant actor in global strategic affairs.

## Operations

During the past year, the Australian Defence Force (ADF) has been involved in military operations, the provision of emergency and non-emergency support to the Australian community, overseas deployments and various joint and combined exercises involving the three Services and allied or regional military forces. In addition to Australia's continued involvement in the war on terror and in the United Nations Mission in East Timor, Australia faces new challenges in the region, such as contributing to stability in the Solomon Islands. The ADF continues to undertake operations against illegal fishing and unauthorised boat arrivals in Australia's northern approaches.

Currently, Australia has approximately 3,800 personnel deployed on more than 10 operations, including border protection activities, United Nations operations, coalition operations and third country deployments. Details of ADF involvement in ongoing operations are given in table 4.1.

## Resources

In the decade preceding 2001–02, Defence funding remained relatively stable in real terms. Increases over this period, evident in graph 4.2, reflect maintenance of the Defence funding base after taking account of inflationary and foreign exchange influences.

Defence funding was increased in the 2001–02 budget (and forward estimates) to address a number of specific priorities detailed in the Defence White Paper, *Defence 2000 — Our Future Defence Force* (Department of Defence). The 2000 Defence White Paper provided a funding commitment for Defence of around \$23.5b over the decade from 2001–02. This funding injection equates to an increase of some 3% average real growth per annum over the period.

In addition to the implementation of the White Paper, the Government has given a number of specific directions to Defence to meet emerging strategic priorities. The 2003–04 budget measures provide funding for:

- the conduct of operations to protect Australia's borders (\$18m in 2003–04)
- the conduct of operations in Iraq (\$644.7m over three years)
- the establishment of the Special Operations Command (\$157m over four years)
- increased logistics funding to support the increased level of operational tasking (\$1,145m over five years).

The Government also provided \$103m over three years to accelerate the strength of the ADF towards the 2000 Defence White Paper target of about 54,000 personnel. The additional funding includes \$50m in 2003–04 to capitalise on better than planned ADF recruitment outcomes and lower separation rates, particularly for the Army and Air Force.

#### 4.1 AUSTRALIAN DEFENCE FORCE, Major operations(a)

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##### MIDDLE EAST

Operation Catalyst	Operation Catalyst is Australia's contribution to the rehabilitation of Iraq. The Government adjusted Australia's military commitment to Iraq as coalition operations changed from offensive combat operations to stabilisation and recovery operations. The ADF is participating in coalition efforts to develop a secure environment in Iraq, assist national recovery programs and facilitate the transition to Iraqi self-government. Operation Catalyst comprises approximately 800 personnel. Operation Catalyst follows Operations Bastille and Falconer which involved up to 2,000 Australian personnel.
Operation Paladin	Operation Paladin is Australia's contribution to the UN Truce Supervision Organisation. The UN Truce Supervision Organisation was established in 1948 to supervise the truce agreed at the conclusion of the first Arab-Israeli War and operates in Israel, Jordan, Syria, Lebanon and Egypt. Australian personnel have been part of this mission since its inception. ADF personnel act as unarmed military observers at headquarters in Jerusalem, the Golan Heights, Southern Lebanon and Gaza. The current ADF commitment is 12 personnel.

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##### BOSNIA

Operation Osier	Operation Osier is Australia's contribution to the NATO-led, United Nations mandated Yugoslavia Security Force and Kosovo Force. Eight ADF personnel are currently employed with UK forces in Bosnia, Croatia and Kosovo. ADF personnel are fully integrated with British units and gain significant experience in peacekeeping operations. These personnel provide specialist advice on logistics, engineering, artillery, operational planning and civil-military cooperation projects.
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##### SINAI

Operation Mazurka	Operation Mazurka is Australia's contribution to the Multinational Force and Observers in the Sinai. The Multinational Force and Observers was established in 1981 to oversee the Camp David Accords of 1978 and the Egypt/Israel Peace Treaty of 1979. There are 25 Australians who assist in the peace process by monitoring the border, preparing daily operational briefings and providing physical training and support to the Multinational Force and Observers headquarters. Contributing countries include Canada, Colombia, Fiji, France, Hungary, Italy, New Zealand, Norway, the United States and Uruguay.
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##### ERITREA AND ETHIOPIA

Operation Pomelo	Australia contributes two Army officers to the UN Mission in Ethiopia and Eritrea to assist the Governments of Ethiopia and Eritrea in their agreement to cease hostilities and enforce the newly agreed border between the two nations. Of the 45 contributing nations, Australian personnel work mainly with troops from Ireland and India. They provide specialist engineering advice regarding de-mining and construction.
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##### UN ASSISTANCE MISSION IN AFGHANISTAN

Operation Palate	Following the ADF's significant and successful role in Afghanistan as part of the international coalition against terrorism, the ADF has deployed a Lieutenant Colonel as a military liaison officer to the UN Assistance Mission in Afghanistan. The mission integrates all UN activities in Afghanistan and focuses on rebuilding Afghanistan's institutions.
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##### SOUTHERN OCEAN

Operation Mistral	The ADF supports Coastwatch and the Australian Fisheries Management Authority by providing support to the civil agencies enforcing Australian sovereign rights and fisheries laws in the Southern Ocean. Military patrols are regularly undertaken in support of these civil authorities. A number of foreign fishing vessels have been apprehended successfully with millions of dollars of illegal catch on board.
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##### AUSTRALIAN BORDER PROTECTION

Operation Relex II	This ADF operation contributes to the whole-of-government program to detect, intercept and deter vessels carrying unauthorised arrivals from entering Australia through the north-west maritime approaches. Operation Relex II includes Navy, Army and Air Force units, supported by Coastwatch and Customs.
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For footnote see end of table

...continued

#### 4.1 AUSTRALIAN DEFENCE FORCE, Major operations(a) — continued

##### EAST TIMOR

Operation Citadel Australia contributes about 1,000 personnel to the UN Mission in Support of East Timor (UNMISET). UNMISET was established in October 2000 and implemented on East Timor's Independence Day, 20 May 2002. Australia provides around 25% of the peacekeeping force, including an infantry battalion group incorporating an infantry company from the Republic of Fiji Military Forces, headquarters personnel and UN military observers. The UN mandate for UNMISET will run until 2004.

##### NORTHERN AUSTRALIA AND SEA AIR APPROACHES

Operation Cranberry The sea, air and land surveillance program in northern Australia, in support of civil agencies such as Coastwatch and Customs, is to detect illegal activity such as smuggling and illegal fishing. It is undertaken primarily by Royal Australian Navy Fremantle-class patrol boats and Army Reserve personnel from Regional Force Surveillance Units.

##### BOUGAINVILLE

Operation Bel Isi II Operation Bel Isi II was Australia's contribution to the Peace Monitoring Group in Bougainville. The ADF contingent ceased operations on 30 June 2003 and redeployed back to Australia by the end of August 2003. Responsibility for Australia's continued support to the Bougainville peace process has been handed over to the Bougainville Transition Team, which is led by the Department of Foreign Affairs and Trade.

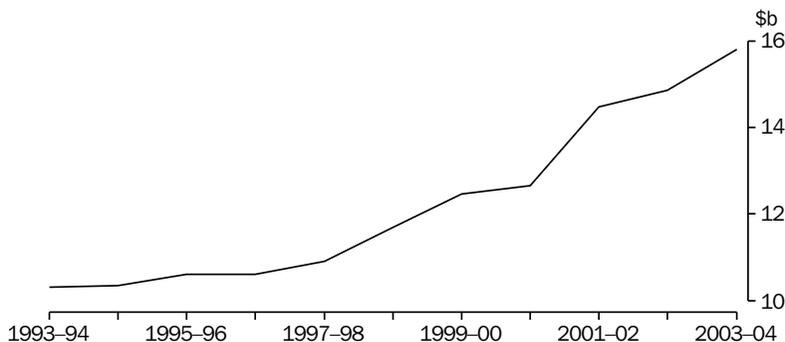
##### SOLOMON ISLANDS

Operation Anode Operation Anode is the ADF's contribution to the Australian-led regional assistance mission to the Solomon Islands, known as Operation Helpem Fren. The Australian contribution to the multinational stabilisation force comprises about 1,500 Australian Defence Force personnel, 155 Australian Federal Police and 90 personnel from the Australian Protective Service. Military personnel from Australia, Fiji, Tonga, New Zealand and Papua New Guinea provide security for police assisting the Solomon Islands Government to restore law and order. They also help with logistic and operational support.

(a) Correct as at 31 October 2002.

Source: Department of Defence.

#### 4.2 DEFENCE OUTLAYS(a)



(a) 2003-04 are estimates.

Source: Department of Defence.

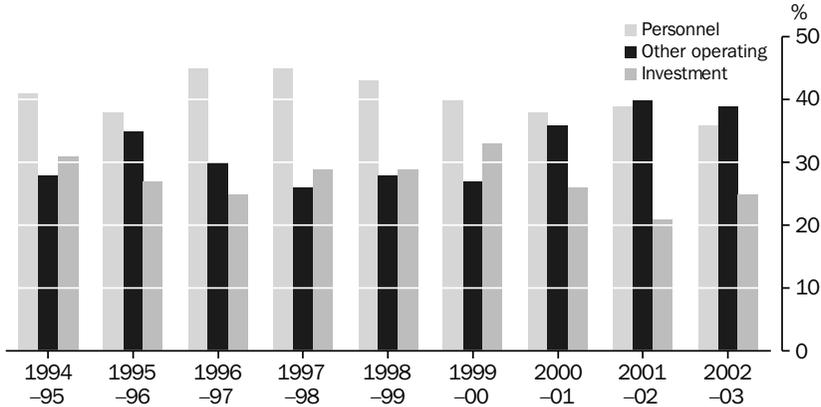
Graph 4.3 reflects the significance of both employee costs and the investment in specialist military equipment and infrastructure in delivering Defence capability. The increased share for investment is consistent with initial progress towards acquiring the equipment capabilities

outlined in the 2000 Defence White Paper. Longer-term projections indicate increases in personnel costs due to growth towards a larger ADF as specified in the White Paper.

From a regional perspective, Australia has tended to spend more on defence than its neighbours, in absolute terms, although some countries spend more as a proportion of their gross domestic product (GDP). Australia spends more than various individual member countries of the Association of South East Asian Nations (table 4.4). Defence spending levels within the region were varied, but saw an overall increase in 2002. Some budgets neared or surpassed their previous

10-year high points (e.g. Malaysia and Singapore). After allowing for price changes, increases were recorded by Thailand, Indonesia and the Philippines. Local political and economic conditions, as well as defence policies, affected the size of individual defence budgets and annual funding changes.

**4.3 DEFENCE OUTLAYS, By category(a)**



Source: Department of Defence.

**4.4 REAL DEFENCE SPENDING(a), Selected countries**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	US\$b	US$b	US$b	US$b	US$b	US$b	US$b	US$b	US$b	US$b	US$b
<b>Australia</b>	<b>6.4</b>	<b>6.8</b>	<b>7.1</b>	<b>7.0</b>	<b>7.1</b>	<b>7.1</b>	<b>7.2</b>	<b>7.3</b>	<b>7.4</b>	<b>7.5</b>	<b>7.9</b>
Malaysia	2.0	2.2	2.2	2.4	2.5	2.2	1.8	2.0	1.9	2.3	2.6
Indonesia	2.2	2.3	2.5	2.6	2.9	2.9	2.3	2.4	2.3	2.2	2.2
Singapore	3.4	3.4	3.5	4.0	3.9	4.3	5.0	5.3	5.1	5.4	5.7
Thailand	3.4	3.4	3.7	3.8	3.9	3.6	2.9	2.6	2.7	2.6	2.7
Philippines	0.8	0.9	1.0	1.1	1.1	1.0	0.9	0.9	1.2	1.2	1.4
Vietnam	1.2	1.0	1.6	1.4	1.9	2.0	1.6	1.7	2.1	2.2	2.6

(a) Data calculated in US \$billion 1995.

Source: Defence Intelligence Organisation, 'Defence Economic Trends in the Asia Pacific 2002'.

Defence spending by Australia's traditional strategic partners, the United States of America and the United Kingdom, has declined as a share of GDP since the end of the Cold War. Over the period 1993–2002, the United States of America and the United Kingdom defence expenditure as a proportion of GDP declined from 4.3% to 3.0% and from 3.6% to 2.5% respectively. These downward trends may stabilise as a result of the events in the United States of America on 11 September 2001 and recent changes in the strategic landscape. The United Kingdom, for example, concluded a spending review in 2002, which resulted in \$4b in new resources for capabilities over the period 2003–04 to 2005–06. Australia's defence expenditure as a proportion of GDP is shown in graph 4.5.

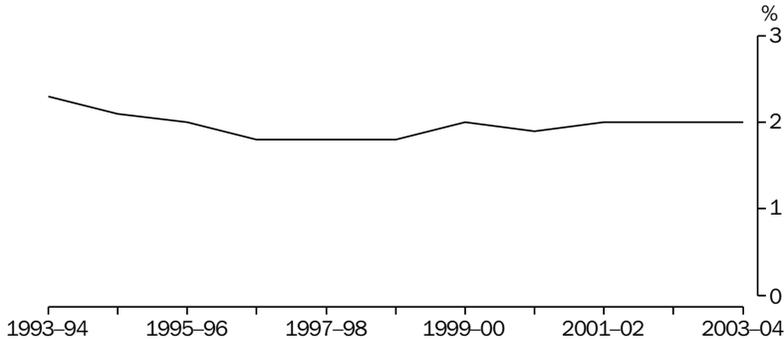
## Capabilities

The changing strategic environment highlights the need for the ADF to be a flexible and adaptable defence force, which is both ready to be deployed

at short notice and can be sustained on operations for as long as required. Capability is 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. Currently, the development of capability is guided by four strategic tasks:

- to be capable of defending Australian territory from any credible attack, without relying on help from the combat forces of any other country
- to have Defence forces able to make a major contribution to the security of the immediate neighbourhood
- to be able to contribute effectively to international coalitions of forces to meet crises beyond Australia's immediate neighbourhood where Australia's interests are engaged and
- to undertake regular or occasional peacetime tasks.

**4.5 DEFENCE OUTLAYS, Proportion of GDP(a)**



(a) 2003–04 are estimates.

Source: Department of Defence.

In order to achieve the requirements specified in the 2000 Defence White Paper, the ADF maintains a force structure with the following elements:

## **Navy**

- a surface combatant force of six guided missile frigates and four Anzac-class frigates, together with onboard helicopters
- a surface patrol capability comprising 15 Fremantle-class patrol boats (to be replaced by Armidale-class patrol boats between 2004–05 and 2007–08)
- six Collins-class submarines
- an amphibious lift force comprising two amphibious landing ships, one heavy landing ship and six heavy landing craft
- a mine warfare force comprising six coastal mine hunters, two auxiliary mine sweepers and two clearance diving teams
- a hydrographic force comprising two hydrographic ships and four survey motor launches
- an afloat support force comprising one oil tanker and one replenishment ship.

## **Army**

- a mechanised force, based on 1 Brigade, consisting of a reconnaissance regiment equipped with Australian light armoured vehicles, a tank regiment, a mechanised infantry battalion, an artillery regiment and engineer and logistic support
- a light infantry force, based on 3 Brigade, consisting of three infantry battalions, a field artillery regiment, an armoured personnel carrier squadron and engineer and logistics support
- an aviation force, based on two aviation regiments consisting of both rotary-wing and fixed-wing aircraft
- a ground-based air defence force, consisting of RBS70 and Rapier missile systems

- a combat support force, consisting of engineering, topographical, electronic warfare, incident response, intelligence, communication and military police units based throughout Australia
- a regional surveillance force consisting of three regional force surveillance battalion-sized units
- a logistic support force consisting of a brigade-sized logistical support organisation, comprising Regular and Reserve transport, engineer, signals, medical and electrical mechanical engineer units
- a motorised infantry force, based on 7 Brigade, comprising a reconnaissance regiment, two motorised battalions, and combat and logistic support units
- a protective operations force drawn from the Reserves, comprising two or three infantry battalions, an armoured reconnaissance unit, and combat and logistic support units.

## **Air Force**

- a strike operations force, to provide support for ground forces and to conduct air reconnaissance tasks, consisting of one operational F-111 squadron
- an air combat force consisting of three front-line F/A-18 squadrons, supported by training squadrons
- a strategic surveillance force, consisting of a wide-area surveillance system (Jindalee Operational Radar Network) monitoring Australia's northern approaches, and a range of ground radars and other support elements
- a maritime patrol force consisting of two front-line P-3C Orion squadrons
- an air-lift force consisting of 24 C-130 Hercules, 14 Caribou, 4 Boeing 707 and eight VIP aircraft
- an air combat support force consisting of two combat support wings, one expeditionary combat support wing, 2 combat reserve wing and one air field defence wing.

## Re-balancing

In response to the changing strategic environment, some re-balancing of capabilities is necessary to maintain the defence of Australia and its interests. This will not fundamentally alter the size, structure or role of the ADF, but will increase emphasis on readiness, mobility and interoperability, as well as the development and enhancement of new capabilities. Decisions have been made to implement a number of measures in response to the changing strategic environment and include:

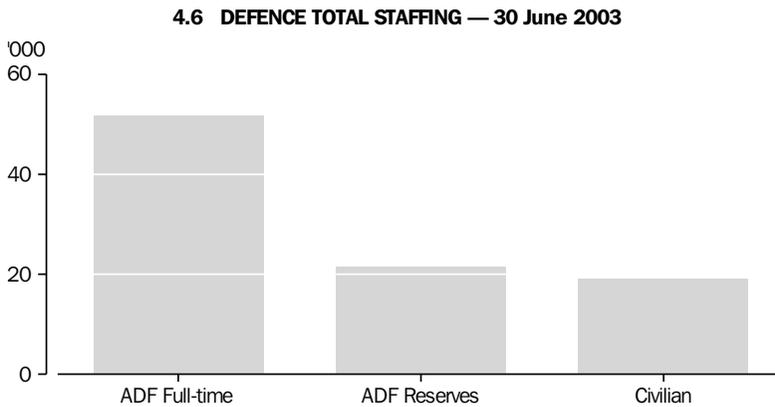
- increasing the size of the special forces
- establishing a special operations command
- enhancements to counter-terrorist capabilities
- advancing some intelligence projects
- purchasing additional, more capable troop lift helicopters

- establishing an incident response regiment to expand chemical, biological, nuclear, radiological and explosive defence capabilities
- implementing measures to enhance the ability to contribute to coalition operations.

## People

With over 92,000 people, Defence is one of Australia's largest employers. Over half of the workforce (56%) are full-time ADF personnel, a significant proportion (23%) are employed in the ADF Reserves and a further 21% are civilians (graph 4.6).

Table 4.7 shows the distribution of ADF personnel across the three Services. Army personnel represent almost half the full-time ADF, and almost 80% of the Reserves, with the remaining personnel divided between the Navy and the Air Force.



Source: Department of Defence.

#### 4.7 AUSTRALIAN DEFENCE FORCE STAFFING, By Service — 30 June 2003

	ADF Full-time	ADF Reserves
Navy	12 864	1 616
Army	25 289	17 172
Air Force	13 638	2 800
Total	51 791	21 588

Source: Department of Defence.

### Reserves and Cadets

The ADF Reserves make up over a quarter of the ADF. The role of the Reserves is changing to suit the needs of a modern defence force. They are no longer solely relied upon during times of major conflict, but also contribute to operations arising at short notice, help sustain operations, assist in domestic peacetime operations and provide additional support to the ADF in maintaining training and operational schedules.

The ADF Cadets is a youth training organisation that provides leadership and initiative training, while developing the interest of young people in the ADF. The program is aimed at youth between the ages of 12 and a half and 18, and is conducted within a military context in schools and other community settings. In more than 400 communities throughout Australia, around 25,500 young people participate as Navy, Army, or Air Force Cadets. Some 2,500 adult volunteers lead and supervise personal development and training activities for cadets. Former cadets continue to make up a significant proportion of recruits into the ADF and are more likely to stay in the ADF in the long-term.

The cadet scheme performs the dual function of developing the individual and strengthening the ADF. Cadets cultivate personal and team qualities that will benefit them and their communities, as well as fostering community spirit in participants. The scheme also forms a tangible link between the

ADF and the wider community, encouraging community involvement with, and support for, the ADF.

### Women in the ADF

Men and women have equal access to employment in the ADF, with the exception of certain functions involving direct combat duties. Women comprised 13% of the ADF Permanent workforce at 30 June 2003 and are able to serve in all positions except for the following types of combat roles:

- Navy — clearance divers
- Army — armour, artillery, infantry, combat engineers
- Air Force — ground defence officers and airfield defence guards.

For health and safety reasons, women are not employed in areas where exposure to embryo-toxic substances could endanger their health. Women are not employed, for example, as surface finishers and electroplaters within the Air Force.

A project has commenced to enable physical employment standards to be developed for the Army's combat arms employment categories and the Air Force's Airfield Defence Guards. The project will result in data being collected to enable improved understanding of the physical characteristics and performance capacity of Defence personnel and to develop a trade selection and barrier testing regime that will optimise an individual's likely success in each employment category.

Table 4.8 compares the distribution of females and males in the permanent ADF.

#### 4.8 GENDER DISTRIBUTION IN THE FULL-TIME ADF — 30 June 2003

	Navy			Army			Air Force		
	Females	Males	Proportion of females	Females	Males	Proportion of females	Females	Males	Proportion of females
	no.	no.	%	no.	no.	%	no.	no.	%
Officers(a)	513	2 233	19	721	4 378	14	631	3 495	15
Other ranks	1 649	8 469	16	1 816	18 374	9	1 399	8 113	15
Total	2 162	10 702	17	2 537	22 752	10	2 030	11 608	15

(a) Officer numbers include Chaplains.

Source: Department of Defence.

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## Publications

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*Defence 2000 — Our Future Defence Force*. Available at <<http://www.defence.gov.au/whitepaper>>

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Minister for Defence, *Portfolio Budget Statements 2003–04*. Available at <<http://www.defence.gov.au/budget/03-04/index.html>>

## Defence web sites

Department of Defence, <<http://www.defence.gov.au/>>

Minister for Defence, <<http://www.minister.defence.gov.au>>

## Related web sites

Australian Strategic Policy Institute, <<http://www.aspi.org.au>>

Australian Government Department of Foreign Affairs and Trade, <<http://www.dfat.gov.au>>

Australian Government Department of Immigration and Multicultural and Indigenous Affairs, <<http://www.immi.gov.au>>

Australian Government Department of Veterans' Affairs, <<http://www.dva.gov.au>>

# 5

## POPULATION

Population statistics are measures of the size, growth, composition and geographic distribution of the population as well as the components that shape population change, notably births, deaths and migration. Population statistics underpin the discussion of a wide range of issues of concern to the community, including immigration, cultural diversity, ageing and population sustainability.

Population trends are associated with many social changes and statistics on these trends assist governments develop social and economic policy. Australia's population is continually changing. Like many developed countries the population is ageing and the distribution of the population among the states and territories is changing. Changes in Australia's population affect policy 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 which determines the distribution of state, territory and local government grants uses ABS population estimates as a basis for calculation. Similarly, population estimates are used to determine the number of seats each state and territory is entitled to in the House of Representatives.

The Census of Population and Housing is the principal source of information about Australia's population. It has been held every five years since 1961 with the most recent census conducted in August 2001.

The census provides a base from which Australia's estimated resident population is calculated. The census count of the population is adjusted for visitors from overseas, Australian residents temporarily overseas on census night and an estimate of the numbers of people missed in the census and those counted more than once. To obtain estimated resident population figures for dates between censuses, births and net overseas migration are added and deaths are subtracted.

The chapter contains three articles, namely *How many people live in Australia's remote areas?*, *How many people live in Australia's coastal areas?* and *Unauthorised arrivals and overstayers in Australia*. It concludes with an article *Aboriginal and Torres Strait Islander population*.

## Population size and growth

Australia's estimated resident population (ERP) at 30 June 2002 was 19.7 million, an increase of 250,000 (1.3%) over the previous year (table 5.1).

Australia's population growth rate of 1.3% for the 12 months to 30 June 2002 was slightly above the overall world growth rate, which was 1.2% (table 5.2). Growth rates for Germany (0.1%), Japan (0.1%), the United Kingdom (0.3%) and China (0.6%) were considerably lower than for Australia. In contrast, the populations of Singapore (with a growth rate of 3.5%), Papua New Guinea (2.4%), Indonesia (1.6%) and India (1.5%) grew at faster rates than Australia's population.

Australia's population of 19.7 million at 30 June 2002 has grown by almost 2.2 million (12.4%) over the past decade. During the past century Australia's population has increased by over 15.8 million persons from the 3.8 million residents at Federation in 1901. Graph 5.3 shows the growth in Australia's population since 1901.

Table 5.4 shows that population growth has not occurred evenly across the states and territories. In 1901, South Australia had nearly twice the population of Western Australia, which in turn had only slightly more people than Tasmania. ERP figures at 30 June 2002 show that New South Wales remained the most populous state, followed by Victoria and Queensland. Western Australia overtook South Australia in 1982 to become the fourth most populous state.

### 5.1 COMPONENTS OF POPULATION CHANGE AND ESTIMATED RESIDENT POPULATION(a)

Year ended 30 June	Components of population change				Population		
	Births(a) '000	Deaths(a) '000	Natural increase(a) '000	Net overseas migration(b) '000	At end of period '000	Increase(c) '000	Increase %
1997	253.7	127.3	126.4	87.1	18 517.6	206.9	1.1
1998	249.1	129.3	119.9	79.2	18 711.3	193.7	1.0
1999	250.0	128.3	121.7	96.5	18 925.9	214.6	1.1
2000	249.3	128.4	120.9	107.3	19 153.4	227.5	1.2
2001	247.5	128.9	118.6	135.7	19 413.2	259.9	1.4
2002	246.3	130.5	115.9	133.7	19 662.8	249.5	1.3

(a) Numbers of births and deaths are on a year of occurrence basis and differ from those shown in the births and deaths sections of this chapter. (b) Net overseas migration is the sum of the net permanent and long-term movement plus category jumping. (c) The difference between total growth and the sum of natural increase and net migration for years ending 30 June 1997 to 30 June 2001 is due to intercensal discrepancy.

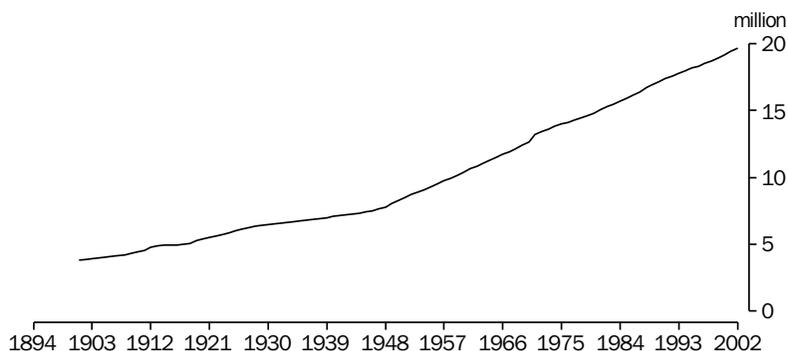
Source: *Australian Demographic Statistics (3101.0)*.

### 5.2 POPULATION SIZE AND RATE OF GROWTH FOR SELECTED COUNTRIES

	Population as at June		Increase %
	2001 million	2002 million	
<b>Australia</b>	<b>19.4</b>	<b>19.7</b>	<b>1.3</b>
Canada	31.6	31.9	1.0
China (excl. SARs & Taiwan Prov.)	1 271.1	1 279.2	0.6
Germany	82.3	82.4	0.1
Hong Kong (SAR of China)	7.2	7.3	1.3
India	1 018.5	1 034.2	1.5
Indonesia	227.7	231.3	1.6
Japan	127.0	127.1	0.1
Korea, Republic of (South)	47.6	48.0	0.7
New Zealand	3.9	3.9	1.1
Papua New Guinea	5.0	5.2	2.4
Singapore	4.3	4.5	3.5
Taiwan	22.3	22.5	0.7
United Kingdom	59.7	59.9	0.3
United States of America	285.0	287.7	0.9
World	6 154.0	6 228.4	1.2

Source: *Australian Demographic Statistics (3101.0)*; US Census Bureau, 'International Data Base'.

### 5.3 POPULATION



Source: Australian Demographic Statistics (3101.0); Australian Demographic Trends (3102.0); Official Year Book of the Commonwealth of Australia 1901–1910.

### 5.4 POPULATION, By states and territories

30 June	NSW '000	Vic. '000	Qld '000	SA '000	WA '000	Tas. '000	NT '000	ACT '000	Aust.(a) '000
1901	1 361.7	1 203.0	502.3	356.1	188.6	171.7	4.8	..	<b>3 788.1</b>
1912	1 742.9	1 355.9	635.6	422.9	302.0	189.1	3.3	2.1	<b>4 653.7</b>
1922	2 154.4	1 570.4	779.3	503.7	341.5	213.9	3.7	2.9	<b>5 569.9</b>
1932	2 578.2	1 807.8	937.7	578.1	435.1	226.4	4.9	8.6	<b>6 576.8</b>
1942	2 828.7	1 962.6	1 039.8	608.3	477.0	240.9	9.1	14.4	<b>7 180.7</b>
1952	3 339.5	2 344.5	1 259.5	755.1	599.9	296.3	15.5	26.4	<b>8 636.5</b>
1962	3 986.9	2 983.1	1 551.0	987.5	766.0	355.7	46.0	66.2	<b>10 742.3</b>
1972	4 795.1	3 661.3	1 898.5	1 214.6	1 082.0	400.3	92.1	159.8	<b>13 303.7</b>
1982	5 303.6	3 992.9	2 424.6	1 331.1	1 338.9	429.8	130.3	233.0	<b>15 184.2</b>
1992	5 962.6	4 455.0	3 030.0	1 456.5	1 658.0	469.8	168.1	294.7	<b>17 494.7</b>
2000	6 486.2	4 741.3	3 561.5	1 505.0	1 874.5	471.4	195.6	315.2	<b>19 153.4</b>
2001	6 575.2	4 804.7	3 628.9	1 511.7	1 901.2	471.8	197.8	319.3	<b>19 413.2</b>
2002	6 640.4	4 872.5	3 707.2	1 520.2	1 927.3	472.7	198.0	321.8	<b>19 662.8</b>

(a) The population for Australia includes Other Territories in 2000, 2001 and 2002. Other Territories include Jervis Bay Territory, previously included with the ACT, as well as Christmas Island and the Cocos (Keeling) Islands, previously excluded from population estimates for Australia.

Source: Australian Historical Population Statistics — on AusStats (3105.0.65.001); Australian Demographic Statistics (3101.0).

### Components of population growth

Population growth results from natural increase and net overseas migration. Australia's population grew from 3.8 million at the beginning of the 20th century to 19.7 million in 2002. During the 1950s, Australia experienced consistently high rates of growth, with an average annual increase of 2.3% from 1950 to 1959. However, during the 1930s, Australia experienced relatively low growth, with an average annual increase of 0.9%.

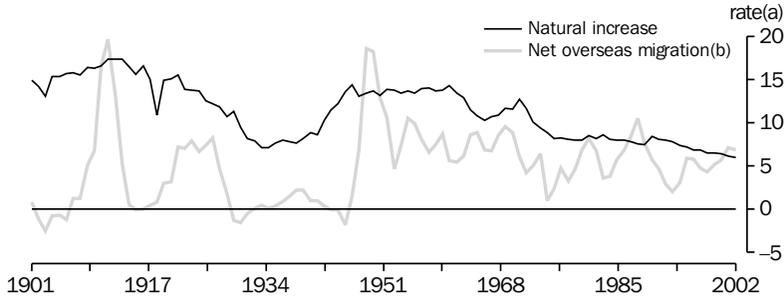
Natural increase has been the main source of the growth since the beginning of the 20th century, contributing two-thirds of the total increase between 1901 and 2002. Net overseas migration, while a significant source of growth, is much more volatile,

fluctuating under the influence of government policy as well as political, economic and social conditions in Australia and the rest of the world.

The yearly growth rates due to natural increase and net overseas migration from 1901 to 2002 are shown in graph 5.5.

In 1901 the rate of natural increase was 14.9 persons per 1,000 population. Over the next four decades the rate increased (to a peak of 17.4 per 1,000 population in the years 1912, 1913 and 1914), then declined (to a low of 7.1 per 1,000 population in 1934 and 1935). In the mid- to late-1940s the rate increased sharply as a result of the beginning of the baby boom and the immigration of many young people who then had children in Australia, with a plateau of rates of over 13.0 persons per 1,000 population for every year from 1946 to 1962.

## 5.5 COMPONENTS OF POPULATION GROWTH



(a) Rate per 1,000 population. (b) Excludes movements of troops for the periods 1914–20 and 1939–47.

Source: *Australian Demographic Statistics (3101.0)*; *Australian Historical Population Statistics — on AusStats (3105.0.65.001)*.

Since 1962 falling fertility has led to a fall in the rate of natural increase. In 1971 the rate was 12.7 persons per 1,000 population; a decade later it had fallen to 8.5. In 1996 the rate of natural increase fell below 7 for the first time, with the downward trend continuing from then on. ABS population projections indicate that continued low fertility, combined with the increase in deaths from an ageing population, will result in natural increase falling below zero sometime in the mid-2030s.

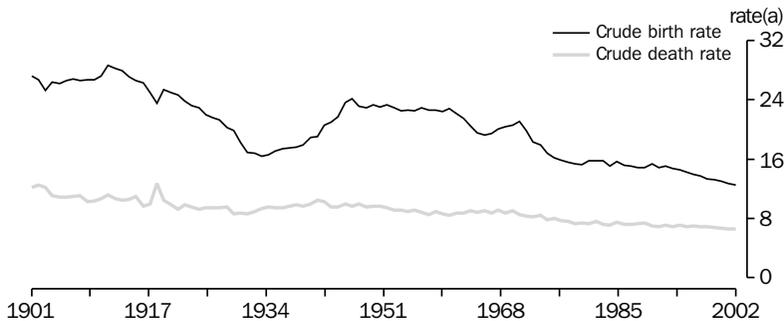
Over the century the crude death rate has almost halved, falling from 12.2 deaths per 1,000 population in 1901 to 6.6 in 2001. Crude birth and death rates from 1901 to 2001 are shown in graph 5.6.

## Population age and sex structure

Since the turn of the 20th century the population of all ages has grown significantly, but it has also aged. This is illustrated in graph 5.7 for the years 1901 and 2002.

The median age of the Australian population has also changed markedly over the past century. In 1901 the median age (the age where half the population is older and half is younger) was 23.6 years for males and 21.5 years for females. In 2002 the median age of the population has increased to 35.1 years for males and 36.6 years for females. In 1901 the median age for males was higher than for females, and in 2002 females had a higher median age than males. This can be attributed to the fact that females have a greater propensity to live to the older ages.

## 5.6 COMPONENTS OF NATURAL INCREASE



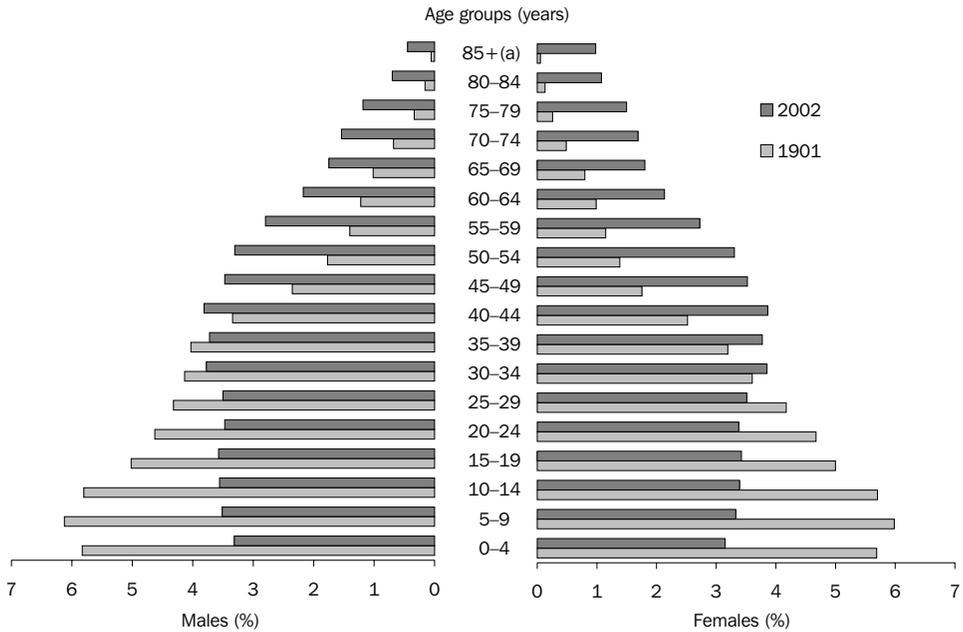
(a) Rate per 1,000 population.

Source: *Australian Demographic Statistics (3101.0)*; *Australian Historical Population Statistics — on AusStats (3105.0.65.001)*.

The changing age structure of Australia's population is also reflected through decrease in the proportion of children (aged under 15 years) within the population from 35.1% in 1901 to 20.3% in 2002. Conversely, the proportion of the population aged 65 years and over has increased significantly from 4.0% in 1901 to 12.7% in 2002.

It is also interesting to note that the proportion of the very old (those aged over 85 years) has increased markedly from just 0.2% in 1901 to 1.4% in 2002, with 68.8% of those aged 85 years and over being female in 2002.

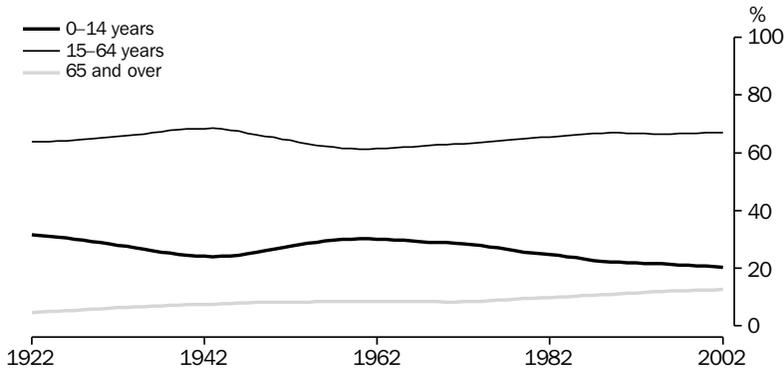
### 5.7 AGE DISTRIBUTION PROFILE OF POPULATION — 1901 and 2002



(a) The 85+ age group includes all ages 85 and over and therefore is not strictly comparable with five-year age groups in the rest of this graph.

Source: Australian Historical Population Statistics — on AusStats (3105.0.65.001); Population by Age and Sex, Australian States and Territories (3201.0).

### 5.8 POPULATION, By age groups



Source: Australian Demographic Statistics (3101.0).

The age distribution of the Indigenous population differs markedly from that of the non-Indigenous population. At 30 June 2001 the Indigenous ERP was 458,500 persons. Of which 2.8% were aged 65 years and over (compared with 12.8% of non-Indigenous persons), 10.2% were aged 50 years and over (compared with 29.1% of non-Indigenous persons) and 39.0% were aged 14 years and under (compared with 20.1% of non-Indigenous persons) (table 5.9).

Indigenous persons aged 50 years and over were more likely to live in Remote and Very Remote areas than non-Indigenous persons in the same

age group. At 30 June 2001 almost one-third of all Indigenous persons aged 50 years and over lived in Remote and Very Remote areas (29.2%), a much higher proportion than for non-Indigenous persons aged 50 years and over in these areas (1.7%).

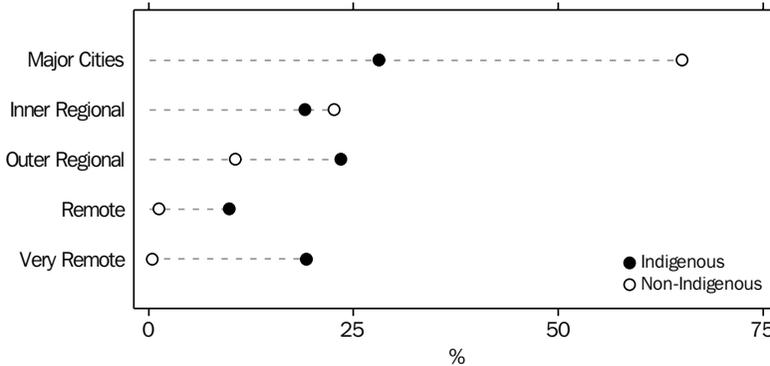
Correspondingly, while nearly two-thirds (65.1%) of the non-Indigenous population aged 50 years and over lived in Major City areas, only a quarter (28.1%) of the Indigenous population resided in these areas (graph 5.10).

**5.9 AGE DISTRIBUTION OF INDIGENOUS AND NON-INDIGENOUS PERSONS — 30 June 2001**

Age group (years)	Indigenous		Non-Indigenous		Persons	
	Number '000	Proportion %	Number '000	Proportion %	Number '000	Proportion %
0-14	178.7	39.0	3 808.5	20.1	3 987.2	20.5
15-49	232.9	50.8	9 626.0	50.8	9 858.9	50.8
50-64	33.9	7.4	3 097.7	16.3	3 131.6	16.1
65 and over	13.1	2.8	2 422.5	12.8	2 435.5	12.5
<b>Total</b>	<b>458.5</b>	<b>100.0</b>	<b>18 954.7</b>	<b>100.0</b>	<b>19 413.2</b>	<b>100.0</b>

Source: ABS data available on request, Indigenous Estimated Resident Population.

**5.10 PERSONS AGED 50 YEARS AND OVER, By Remoteness Area — 30 June 2001**



Source: Experimental Estimates and Projections of Indigenous Australians, 1991 to 2016 (3238.0).

## Population projections

The ABS has published projections of the Australian population to the year 2101, based on a combination of assumptions concerning future levels of births, deaths and migration. Three main population projection series (Series A, B and C) have been published, based on differing levels of these variables.

Series A assumes a total fertility rate (TFR) of 1.8 babies per woman from 2010–11, remaining constant at this level through to 2050–51; life expectancy at birth of 92.3 years for males and 95.0 years for females from 2050–51; net overseas migration (NOM) of 125,000 per year from 2005–06 through to 2050–51; and high levels of interstate migration. Series B assumes a TFR of 1.6 from 2010–11, remaining constant at this level through to 2050–51; life expectancy at birth of 84.2 years for males and 87.7 years for females by 2050–51; NOM of 100,000 per year from 2005–06 through to 2050–51; and medium flows of interstate migration. Series C assumes a TFR of 1.4 by 2010–11, remaining constant at this level through to 2050–51; life expectancy at birth of 84.2 years for males and 87.7 years for females by 2050–51; NOM of 70,000 per year from 2005–06 through to 2050–51; and small flows of interstate migration. In all these series, the assumptions to 2050–51 will remain constant to 2100–01. Unless otherwise stated, this analysis uses both Series A and C to show a range, although not the full range, of the projected populations. At times, to simplify the analysis, only the medium series, Series B, has been chosen.

Australia's population at 30 June 2002 of 19.7 million is projected to grow to between 23.0 and 31.4 million in 2050–51, and between 18.9 and 37.7 million in 2100–01. Under Series A (high series), the population will continue to grow throughout the projection period, but at declining rates, reaching 31.4 million in 2050–51 and 37.7 million in 2100–01. Under Series B (medium series), the population will reach 26.4 million in 2100–01, after peaking at 26.7 million in 2068–69 and then declining gradually. Series C (low series) projects the lowest population for 2100–01 of 18.9 million people. Under this scenario, the population will peak in 2038–39 at 23.3 million and then decline at a slightly faster rate than under Series B (graph 5.11).

The growth rate of the population reflects the interaction of the components of population change: natural increase (the excess of births over deaths) and net overseas migration. Throughout

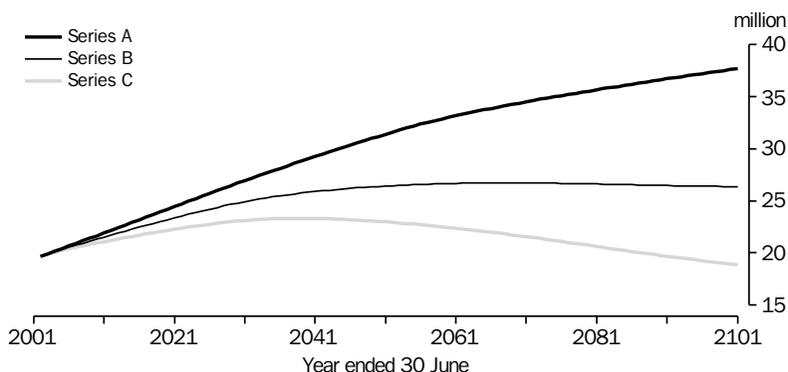
the 1990s and early-2000s, Australia's annual population growth rate has consistently exceeded 1%. While growth rates of this magnitude are projected to continue for the next 4–15 years (except under Series C), growth will slow for the remainder of the projection period. Series A maintains positive growth throughout the projection period, although the growth rate declines over time from 1.29% in the first projected year to 0.26% each year in the last five years. This growth is sustained by a relatively high level of fertility combined with high net overseas migration. Under Series B and C, by contrast, the population would experience a more rapid decline in growth. Series B projects negative growth from 2068–69 while Series C projects negative growth from 2038–39. Series B projects an almost constant population size over the middle years of the projection period. The higher negative growth rates experienced under Series C reflect the fact that net overseas migration is not sufficient to offset the effect of declining number of births combined with an increasing number of deaths.

In Series B the population will increase over the next 50 years in all states and territories except Tasmania and South Australia. Between 30 June 2002 and 30 June 2051, the population of the Northern Territory will increase by 92%, Queensland by 74% and Western Australia by 63%, well above the growth for Australia (34%). The distribution of Australia's population will therefore be considerably different in 50 years time.

New South Wales is projected to remain the most populous state in Australia, although New South Wales' share of Australia's population will fall slightly from 34% at 30 June 2002 to 32% in 2051. Under Series B, Victoria will be replaced by Queensland as the second most populous state in 2044 with Victoria's share of Australia's population decreasing from 25% to 23% over the next 50 years and Queensland's share increasing from 19% to 24% over the same period. According to Series B, Western Australia will increase its share of Australia's population from 10% at 30 June 2002 to 11% in 2051 while South Australia's share will fall from 8% to 6% over the same period. Similarly, Tasmania's share will decline in this series from 2% in 2002 to 1% in 2051. In contrast, the Northern Territory's share of Australia's population will increase marginally by 1%. Series B projects the Australian Capital Territory's share to decline from 2% in 2002 to 1% in 2051.

These projections are summarised in table 5.12.

## 5.11 PROJECTED POPULATION



Source: Population Projections, Australia (3222.0).

## 5.12 ACTUAL AND PROJECTED POPULATION — 30 June

	2002	2021				2051		
	Actual '000	Series A '000	Series B '000	Series C '000	Series A '000	Series B '000	Series C '000	
<b>Capital city/balance of state</b>								
Sydney	4 170.9	5 108.2	4 910.8	4 678.0	6 587.6	5 652.5	4 913.9	
Balance of New South Wales	2 469.4	2 760.5	2 727.0	2 695.0	3 005.6	2 703.1	2 570.0	
<i>New South Wales</i>	6 640.4	7 868.7	7 637.8	7 373.0	9 593.2	8 355.6	7 484.0	
Melbourne	3 524.1	4 348.1	4 188.9	4 061.1	5 561.7	4 792.8	4 369.1	
Balance of Victoria	1 348.4	1 434.4	1 465.9	1 498.8	1 410.0	1 407.1	1 475.7	
<i>Victoria</i>	4 872.5	5 782.5	5 654.8	5 560.0	6 971.7	6 199.9	5 844.8	
Brisbane	1 689.1	2 481.1	2 288.0	2 113.0	3 776.9	3 018.5	2 483.1	
Balance of Queensland	2 018.1	2 935.0	2 705.1	2 461.2	4 317.0	3 411.2	2 689.6	
<i>Queensland</i>	3 707.2	5 416.1	4 993.0	4 574.2	8 093.9	6 429.7	5 172.6	
Adelaide	1 114.3	1 190.7	1 181.2	1 173.3	1 241.7	1 134.6	1 098.3	
Balance of South Australia	406.0	412.1	410.9	410.4	373.8	341.0	333.9	
<i>South Australia</i>	1 520.2	1 602.8	1 592.0	1 583.7	1 615.5	1 475.6	1 432.2	
Perth	1 413.7	1 931.7	1 804.9	1 663.6	2 752.2	2 235.2	1 808.5	
Balance of Western Australia	513.7	648.3	603.0	537.8	821.7	639.3	450.7	
<i>Western Australia</i>	1 927.3	2 580.0	2 407.9	2 201.5	3 573.9	2 874.5	2 259.3	
Hobart	198.0	220.6	203.2	189.8	240.1	175.7	148.1	
Balance of Tasmania	274.7	299.8	271.4	248.2	312.1	210.8	159.5	
<i>Tasmania</i>	472.7	520.3	474.6	438.0	552.2	386.5	307.6	
Darwin	107.4	157.3	141.3	116.4	257.1	199.3	121.5	
Balance of Northern Territory	90.6	123.4	99.1	84.8	197.2	107.8	62.7	
<i>Northern Territory</i>	198.0	280.7	240.4	201.2	454.3	307.1	184.1	
<i>Australian Capital Territory</i>	321.8	407.1	364.9	332.7	538.0	389.6	296.8	
<b>Total capital cities</b>	12 538.9	15 844.8	15 083.2	14 327.9	20 955.3	17 598.2	15 239.3	
<b>Total balance of states and territories(a)(b)</b>	7 121.3	8 613.5	8 282.4	7 936.2	10 437.4	8 820.3	7 742.1	
<b>Australia(b)</b>	<b>19 662.8</b>	<b>24 461.1</b>	<b>23 368.4</b>	<b>22 267.1</b>	<b>31 396.1</b>	<b>26 421.5</b>	<b>22 984.2</b>	

(a) Excludes Balance of ACT. (b) Includes Other Territories.

Source: Population Projections, Australia (3222.0).

The projections show that the ageing of the population, which is already evident, will continue. This is the inevitable result of fertility remaining at low levels over a long period while mortality rates decline. The median age at 30 June 2002 of 35.9 years will increase to between 40.4 years and 42.3 years in 2021 and between 46.0 and 49.9 years in 2051.

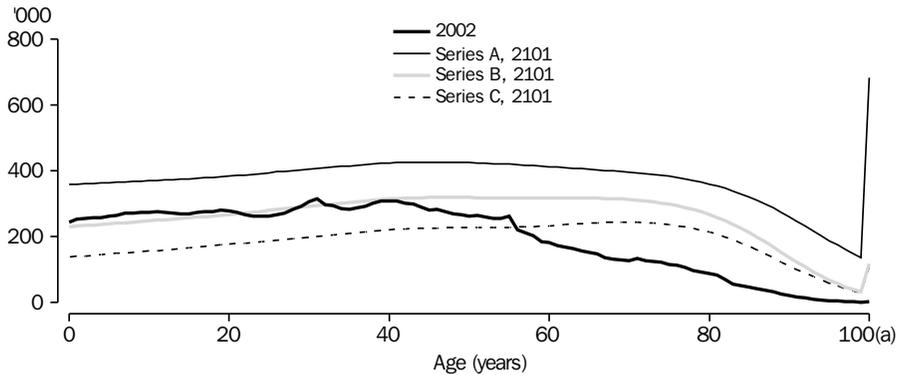
The ageing of the population affects the entire age structure of the population. The proportion of the population aged under 15 years will fall from 20% (4.0 million) of the population at 30 June 2002, to between 12% and 15% (2.8 million to 4.8 million) in 2051. This proportion will remain within 12% and 15% in 2101 (growing to between 3.6 million

to 5.5 million). The proportion of the population aged 50 years and over will increase from 29% (5.7 million) at 30 June 2002 to between 46% and 50% (11.5 million to 14.3 million) in 2051 and 47% and 51% (9.6 million to 18 million) in 2101.

Consequently, the age structure of the population will change noticeably by 2101. Graph 5.13 shows a heavier concentration in the ages 50 years and over and smaller increases or slight declines in the younger ages.

Table 5.14 summarises changes from 1901 to 2002, and projections to 2101, relating to population size, age structure, and proportion living in capital cities.

**5.13 AGE STRUCTURE OF THE POPULATION**



(a) The 100-years age group includes all ages 100 years and over and therefore is not strictly comparable with single year ages in the rest of the graph.

Source: *Population by Age and Sex, Australian States and Territories (3201.0); Population Projections, Australia (3222.0)*.

**5.14 POPULATION, Summary indicators**

	Units	1901	1947	1971	2002	2021(a)	2051(a)	2101(a)
Total population	'000	3 773.8	7 579.4	13 067.3	19 662.8	23 368.4	26 421.5	26 355.7
Proportion of population aged (years)								
0-14	%	35.1	25.1	28.7	20.3	16.1	14.0	13.8
15-64	%	60.8	66.8	63.0	67.1	64.9	58.9	57.2
65-84	%	3.9	7.7	7.8	11.2	16.5	21.1	22.0
85 and over	%	0.1	0.4	0.5	1.4	2.5	6.0	6.9
Males per 100 females	no.	110.1	100.4	101.1	98.4	98.7	98.7	99.4
Median age	years	22.5	30.7	27.5	35.9	41.2	46.8	47.5
Proportion living in capital cities	%	36.8	51.2	63.2	63.9	64.5	66.6	n.a.

(a) Series B population projections.

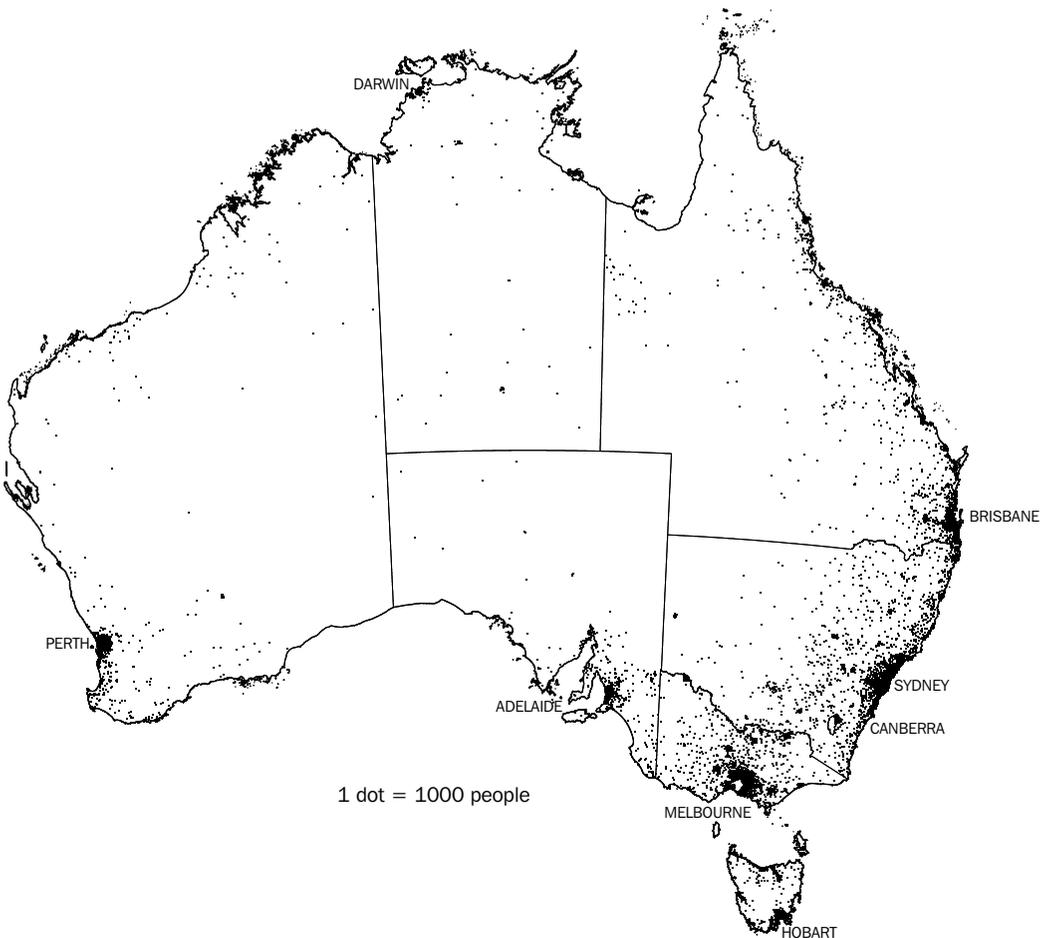
Source: *Australian Demographic Statistics (3101.0); Australian Demography, 1947; Population Projections, Australia (3222.0)*.

## Geographic distribution of the population

Most of Australia's population is concentrated in two widely separated coastal regions. By far the larger of these, in terms of area and population, lies in the south-east and east. The smaller of the two regions is in the south-west of the continent. In both coastal regions the population is concentrated in urban centres, particularly the state and territory capital cities.

Australia's population density at 30 June 2002 was 2.6 people per square kilometre. Highest population densities were recorded in inner areas adjacent to capital city centres, such as Sydney (C) — Remainder (8,000 people per square kilometre), Waverley (A) (6,800) and North Sydney (A) (5,600) in Sydney, and Port Phillip (C) — St Kilda (5,500) in Melbourne. At the other extreme, there were around 250 Statistical Local Areas (SLAs) in Australia with less than one person per square kilometre. The distribution of Australia's population at 30 June 2001 is shown in map 5.15.

5.15 POPULATION(a) DISTRIBUTION — 30 June 2001



(a) Estimated resident population.

Source: *Regional Population Growth, Australia and New Zealand (3218.0)*.

## Geographic distribution of Indigenous Australians

The Indigenous population at 30 June 2001 was 458,500 of which 134,900 (29.4%) lived in New South Wales, 125,900 (27.5%) in Queensland, 65,900 (14.4%) in Western Australia and 56,900 (12.4%) in the Northern Territory. The Northern Territory had the largest proportion of its population who were Indigenous (28.8%) compared to 3.7% or less for all other states and the Australian Capital Territory (table 5.16).

While most of the Australian population is concentrated along the eastern and south-west coasts, map 5.17 shows the Indigenous population is more widely spread. The total population is contained within the most densely settled areas of the continent, while the Indigenous population live in areas covering more of the continent. This partly reflects the higher level of urbanisation among the non-Indigenous population than the Indigenous population. Indigenous people are much more likely to live in very remote areas than the non-Indigenous population. The SLAs with the highest number of Indigenous people per square kilometre were located in Darwin, whereas the SLAs with the highest densities for the population as a whole were located in Sydney.

## Population change

New South Wales is the most populous state, with 6.6 million people at 30 June 2002. From 1997 to 2002 the fastest growth occurred in Queensland, which grew over the five years by 9.2%, followed by Western Australia (7.4% over five years) and

Victoria (6.0% over five years). Tasmania's population declined slightly over the five years to 30 June 2002 (-0.2%).

Table 5.18 sets out the ERP in major population centres at 30 June 1997 and 2002. Australia's capital cities accounted for 66% of Australia's population growth between 1997 and 2002, with Sydney (up 242,300 people) and Melbourne (up 214,500 people) experiencing the largest increases. The capital city with the fastest population growth over the 1997–2002 period was Brisbane (up by an average 1.8% per year), followed by Darwin (1.7% per year).

Between 1997 and 2002 large increases in population occurred on the outskirts of Australia's capital cities. In Sydney, the Local Government Areas (LGAs) of Liverpool (C), Blacktown (C) and Baulkham Hills (A) experienced significant growth (up 32,300, 25,500 and 23,100 people respectively), while the largest growth in Melbourne occurred in the LGAs of Casey (C), Hume (C) and Melton (S) (up 37,900, 17,400 and 16,000 people respectively). This pattern of growth was also apparent in outer suburban areas in the smaller capital cities.

Many of Australia's inner city areas, especially in the larger cities, grew rapidly in the five years to 30 June 2002. The LGA of the City of Sydney recorded Australia's highest average annual growth rate of 13.2%. The LGAs of Perth (up 8.2% per year) and Melbourne (up 5.4% per year) also experienced rapid growth between 1997 and 2002. The inner-Brisbane SLA of City - Inner was one of the fastest-growing SLAs in Queensland over this period.

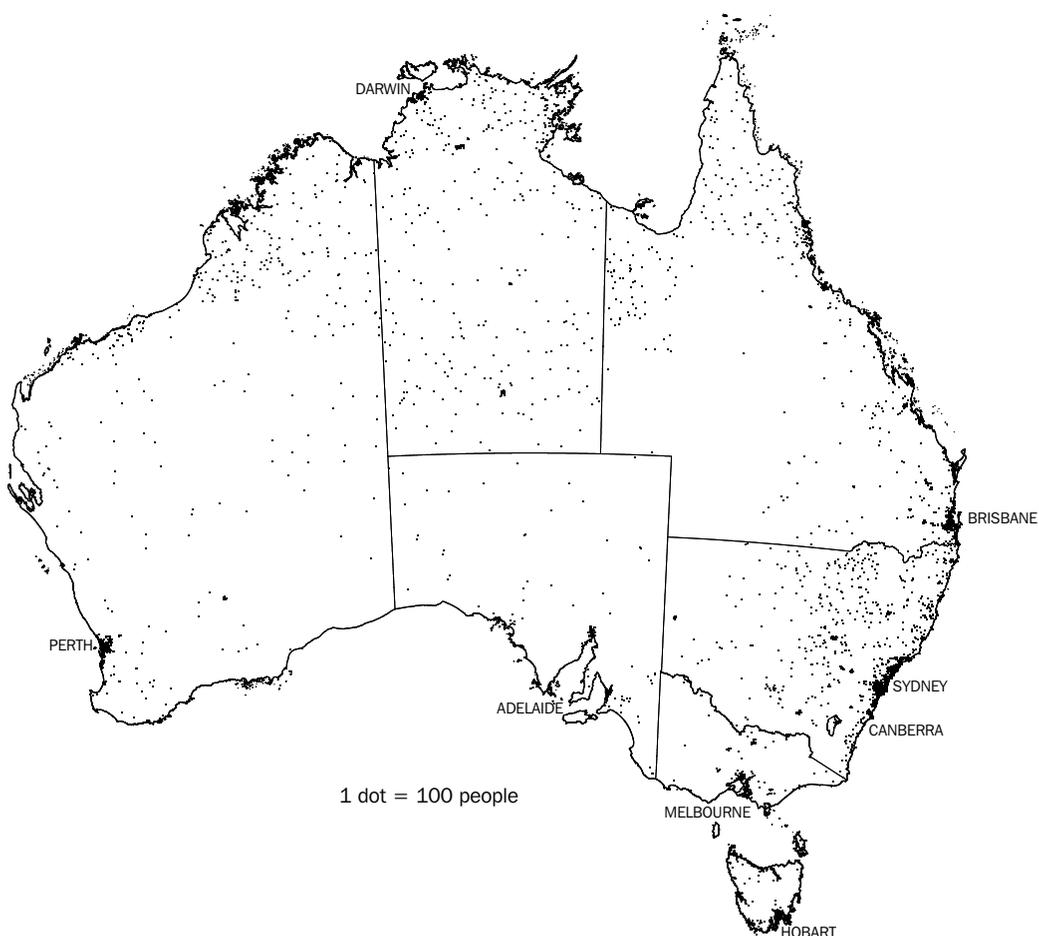
**5.16 ESTIMATED RESIDENT POPULATION, By Indigenous status — 30 June 2001**

	Total population '000	Number '000	Indigenous population	
			Proportion of state and territory population %	Proportion of total Indigenous population %
New South Wales	6 575.2	134.9	2.1	29.4
Victoria	4 804.7	27.8	0.6	6.1
Queensland	3 628.9	125.9	3.5	27.5
South Australia	1 511.7	25.5	1.7	5.6
Western Australia	1 901.2	65.9	3.5	14.4
Tasmania	471.8	17.4	3.7	3.8
Northern Territory	197.8	56.9	28.8	12.4
Australian Capital Territory	319.3	3.9	1.2	0.9
<b>Australia(a)</b>	<b>19 413.2</b>	<b>458.5</b>	<b>2.4</b>	<b>100.0</b>

(a) Includes Other Territories.

Source: Australian Demographic Statistics (3101.0).

## 5.17 INDIGENOUS POPULATION(a) DISTRIBUTION — 30 June 2001



(a) Estimated resident population.

Source: *Census of Population and Housing: Population Growth and Distribution, Australia, 2001 (2035.0)*.

Other major population centres experiencing significant population growth between 1997 and 2002 were the Statistical Districts of Gold Coast-Tweed on the Queensland–New South Wales border, which increased by an average 3.6% per year, Mandurah and Bunbury in Western Australia (up 3.5% and 3.3% per year respectively), and Sunshine Coast in Queensland (up 3.4% per year). Rapid population growth was also recorded in many LGAs elsewhere along the Queensland, New South Wales and Victorian coastline and in some LGAs in the south-west corner of Western Australia.

Some areas of Australia have experienced significant population decline in recent years. While some of the population declines have occurred in established areas within capital cities and major urban centres, the fastest population declines have occurred in rural areas. Most of this decline has been caused by net migration loss. Such population loss is associated with technological, social and economic changes and industry restructuring in local economies.

## 5.18 ESTIMATED RESIDENT POPULATION IN MAJOR CENTRES

	30 June 1997	30 June 2002	Change(a)
	'000	'000	%
Capital City Statistical Division			
Sydney	3 928.7	4 170.9	1.2
Melbourne	3 309.6	3 524.1	1.3
Brisbane	1 543.8	1 689.1	1.8
Adelaide	1 083.9	1 114.3	0.6
Perth	1 316.3	1 413.7	1.4
Greater Hobart	196.0	198.0	0.2
Darwin	98.9	107.4	1.7
Canberra	308.7	321.4	0.8
Statistical District			
Newcastle (NSW)	469.3	497.5	1.2
Gold Coast-Tweed (Qld/NSW)	368.5	439.7	3.6
Canberra-Queanbeyan (ACT/NSW)	346.7	365.4	1.1
Wollongong (NSW)	258.4	272.1	1.0
Sunshine Coast (Qld)	162.4	191.9	3.4
Geelong (Vic.)	152.8	161.7	1.1
Townsville (Qld)	123.6	137.4	2.1
Cairns (Qld)	108.5	114.5	1.1
Toowoomba (Qld)	103.1	111.4	1.6
Albury-Wodonga (NSW/Vic.)	93.6	99.3	1.2
Launceston (Tas.)	98.7	99.1	0.1
Ballarat (Vic.)	79.7	84.8	1.3
Bendigo (Vic.)	75.2	80.9	1.5
Burnie-Devonport (Tas.)	78.8	77.4	-0.4
Bathurst-Orange (NSW)	72.2	76.5	1.2
La Trobe Valley (Vic.)	75.8	74.9	-0.2
Mackay (Qld)	61.7	65.8	1.3
Rockhampton (Qld)	64.3	64.2	—
Mandurah (WA)	52.1	62.0	3.5
Bundaberg (Qld)	54.7	57.7	1.1
Wagga Wagga (NSW)	51.7	52.5	0.3
Bunbury (WA)	43.3	50.8	3.3
Coffs Harbour (NSW)	43.1	47.1	1.8
Mildura (Vic.)	41.9	46.2	2.0
Shepparton (Vic.)	41.6	45.7	1.9
Tamworth (NSW)	40.7	42.7	1.0
Hervey Bay (Qld)	36.7	40.7	2.1
Gladstone (Qld)	37.7	39.7	1.0
Port Macquarie (NSW)	33.7	39.1	3.1
Dubbo (NSW)	33.2	35.3	1.2
Geraldton (WA)	30.2	31.3	0.7
Nowra-Bomaderry (NSW)	29.2	30.9	1.1
Lismore (NSW)	31.2	30.8	-0.2
Warrnambool (Vic.)	27.8	30.1	1.6
Kalgoorlie/Boulder (WA)	29.7	29.2	-0.3

(a) Average annual growth rate.

Source: *Australian Demographic Statistics (3101.0)*.

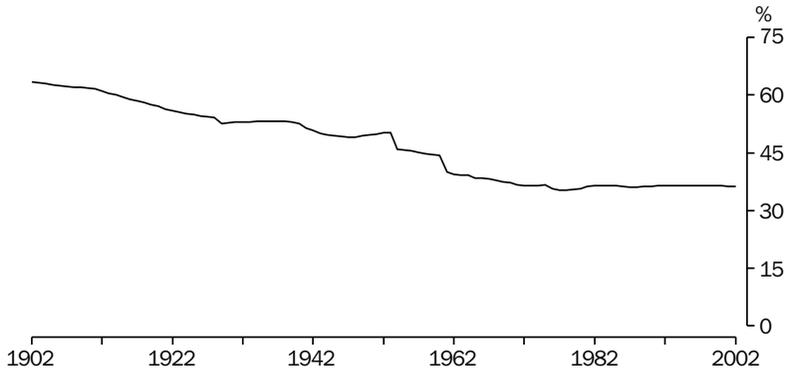
In 1901, 64% of Australians lived outside capital cities. This proportion fell steadily, and from 1962 only 40% lived outside capital cities. Between 1976 and 2002 the decline appeared to have halted, with a slight increase in the proportion of people living in the balance of states and territories (graph 5.19), which may have been due to people moving to coastal regions and other urban centres.

## Interstate migration

The main factor changing the distribution of Australia's population has been internal migration. During 2001–02, 392,100 people moved from one state or territory to another, 11,200 more than in the previous year (380,900).

In 2001–02, Victoria and Queensland recorded net interstate migration gains. All other states and territories experienced net losses due to interstate migration, although this was offset in all cases by growth due to natural increase and net overseas migration (table 5.20).

**5.19 POPULATION LIVING OUTSIDE CAPITAL CITIES**



Source: Australian Historical Population Statistics — on AusStats (3105.0.65.001).

## 5.20 POPULATION GROWTH RATES

Year ended 30 June	NSW %	Vic. %	Qld %	SA %	WA %	Tas. %	NT %	ACT %	Aust. %
<b>NATURAL INCREASE RATE</b>									
1997	0.69	0.63	0.77	0.47	0.80	0.52	1.50	0.99	0.69
1998	0.63	0.60	0.73	0.45	0.76	0.44	1.51	0.92	0.65
1999	0.64	0.58	0.71	0.45	0.80	0.56	1.45	0.95	0.65
2000	0.64	0.59	0.70	0.42	0.75	0.44	1.41	0.89	0.64
2001	0.61	0.56	0.71	0.37	0.75	0.43	1.46	0.85	0.62
2002	0.57	0.57	0.67	0.39	0.69	0.45	1.46	0.83	0.60
<b>NET OVERSEAS MIGRATION RATE</b>									
1997	0.60	0.46	0.38	0.21	0.70	0.05	0.30	-0.02	0.48
1998	0.51	0.42	0.37	0.21	0.67	0.01	0.30	-0.08	0.43
1999	0.65	0.53	0.40	0.18	0.73	0.04	0.53	-0.07	0.52
2000	0.68	0.58	0.50	0.26	0.76	0.09	0.49	-0.03	0.57
2001	0.90	0.75	0.59	0.18	0.87	0.02	0.45	0.23	0.71
2002	0.78	0.71	0.69	0.30	0.91	0.10	0.07	0.26	0.69
<b>NET INTERSTATE MIGRATION RATE</b>									
1997	-0.17	-0.14	0.59	-0.23	0.26	-0.70	0.96	-0.80	..
1998	-0.20	-0.01	0.51	-0.13	0.18	-0.77	-0.25	-0.64	..
1999	-0.21	0.05	0.48	-0.11	0.02	-0.70	-0.50	-0.16	..
2000	-0.22	0.11	0.53	-0.24	-0.12	-0.56	-0.47	-0.03	..
2001	-0.25	0.11	0.56	-0.16	-0.17	-0.45	-0.81	0.13	..
2002	-0.36	0.13	0.80	-0.12	-0.22	-0.36	-1.41	-0.31	..
<b>TOTAL POPULATION GROWTH</b>									
1997	1.16	0.81	1.68	0.48	1.68	-0.18	2.79	0.26	1.13
1998	0.99	0.88	1.56	0.55	1.54	-0.35	1.59	0.27	1.05
1999	1.14	1.05	1.56	0.55	1.48	-0.11	1.50	0.79	1.15
2000	1.17	1.17	1.72	0.48	1.34	—	1.47	0.92	1.20
2001	1.37	1.34	1.89	0.44	1.42	0.08	1.13	1.30	1.36
2002	0.99	1.41	2.16	0.56	1.38	0.20	0.12	0.78	1.29

Source: Australian Demographic Statistics (3101.0).

## How many people live in Australia's remote areas?

Australia's population inhabits many different geographic locations, ranging from large coastal cities to isolated outback areas. The new Remoteness Structure, developed as part of the Australian Standard Geographical Classification,<sup>1</sup> may be used to explore population characteristics across these various regions of Australia.<sup>2</sup>

The new Remoteness Structure covers the whole of Australia and classifies Australia into regions which share common characteristics of remoteness. There are six Remoteness Areas in the Structure: Major Cities of Australia, Inner Regional Australia, Outer Regional Australia, Remote Australia, Very Remote Australia and Migratory.

An estimated two-thirds (66.3%) of the total population resided in Major Cities as at 30 June 2001. The rest were mainly residents of Inner and Outer Regional areas (31.1%) with only 2.6% of people in either Remote or Very Remote areas. The proportion of the population in each of the Remoteness Areas varied considerably across the states and territories. Almost all of the population of the Australian Capital Territory (99.8%) was in a Major City area, while the Northern Territory had higher proportions of people in Remote (21.2%) and Very Remote (24.8%) areas than any other state or territory (table 5.21).

A relatively high proportion of Indigenous persons live in regional and remote areas. Major Cities were home to the largest proportion of Indigenous persons (30.2%) in 2001. However, almost half (49.5%) lived in Outer Regional, Remote and Very Remote areas combined, compared with 13.0% of the total Australian population (graph 5.22).

In addition to providing a picture of population distribution in Australia, the Remoteness Structure meets demand for a standard classification with which to analyse differences according to remoteness, including demographic variables such as sex and age. At 30 June 2001, women outnumbered men in Major Cities and Inner Regional areas, with sex ratios of 97 males per 100 females, and 98 males per 100 females respectively. The reverse was true in the more remote areas, where male-dominated industries tend to prevail. The median age was highest in Inner Regional areas (37.3 years), followed by Outer Regional areas (36.5 years) and Major Cities (35.2 years). The median age was lowest in Very Remote Areas at 28.8 years.

Variations in median age across Remoteness Areas are due to underlying differences in their age profiles. Consistent with the recognised pattern of young people migrating from country areas to cities for educational and employment opportunities,<sup>3</sup> Major Cities had the highest proportion of young adults aged 15–24 years (14%) as at 30 June 2001, while Outer Regional and Remote areas had the lowest proportions of young adults (12% and 11% respectively). Inner Regional and Outer Regional areas had the highest proportions of older people aged 65 years and over, while the lowest proportions of older people were resident in Remote and Very Remote areas (10% and 8% respectively). The lower cost of living in Inner and Outer Regional areas compared to city areas, in combination with their larger number of services for the aged compared to remote areas,<sup>4</sup> may have contributed to this pattern.

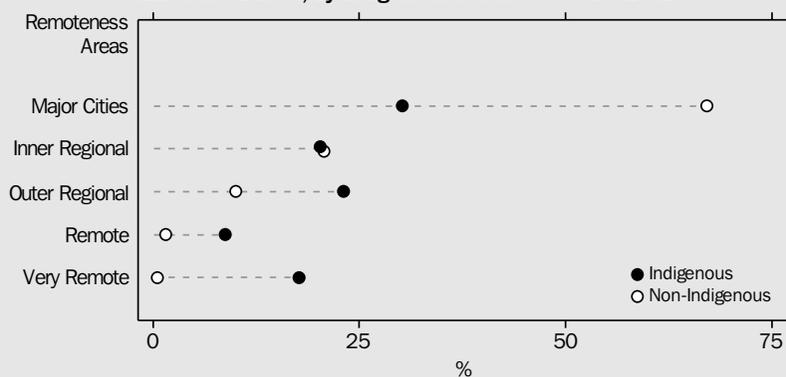
### 5.21 DISTRIBUTION OF THE POPULATION ACROSS REMOTENESS AREAS — 30 June 2001

State/territory	Major Cities	Inner Regional	Outer Regional	Remote	Very Remote	Total(a)	
	%	%	%	%	%	%	'000
New South Wales	71.4	20.5	7.3	0.6	0.1	100.0	6 575.2
Victoria	73.4	21.2	5.3	0.1	—	100.0	4 804.7
Queensland	52.4	25.9	17.8	2.5	1.5	100.0	3 628.9
South Australia	71.8	12.4	11.8	3.0	1.0	100.0	1 511.7
Western Australia	70.6	12.2	9.8	4.8	2.6	100.0	1 901.2
Tasmania	—	63.6	34.1	1.8	0.6	100.0	471.8
Northern Territory	—	—	54.0	21.2	24.8	100.0	197.8
Australian Capital Territory	99.8	0.2	—	—	—	100.0	319.3
<b>Australia(b)</b>	<b>66.3</b>	<b>20.7</b>	<b>10.4</b>	<b>1.7</b>	<b>0.9</b>	<b>100.0</b>	<b>19 413.2</b>

(a) Includes persons in Migratory category. (b) Includes persons in Other Territories.

Source: ABS data available on request, 2001 Census of Population and Housing.

### 5.22 POPULATION, By Indigenous status — 30 June 2001



Source: *Experimental Estimates and Projections of Indigenous Australians, 1991 to 2016* (3238.0).

Family characteristics also vary by Remoteness Area, with the presence of different family types closely linked to age distribution. In 2001 older couples without children (where the male partner was aged 55 years or over) comprised almost one-quarter of families in Inner Regional and Outer Regional areas (24% and 23% respectively), compared with 20% nationally. By contrast, this family type accounted for just 12% of families in Very Remote areas. Very Remote areas had the highest proportions of both couple

families with children (49%) and one-parent families (17%). Families with children in Very Remote areas were also more likely to contain more children than those in less remote areas; the average number of children (aged under 15 years) increased across Remoteness Areas from 1.8 in Major City areas to 2.1 in Very Remote areas. This reflects a clear gradation of increasing fertility from city areas to remote and regional areas,<sup>5</sup> largely due to fertility differentials at younger ages.

## Endnotes

- 1 ABS (Australian Bureau of Statistics) 2001, *Statistical Geography, Volume 1: Australian Standard Geographical Classification (ASGC), 2001*, cat. no. 1216.0, ABS, Canberra.
- 2 ABS 2003, 'Population characteristics and remoteness' in *Australian Social Trends, 2003*, cat. no. 4102.0, ABS, Canberra, pp. 7–11.
- 3 ABS 2003, 'Youth migration within Australia' and 'Regional differences in education and outcomes', in *Australian Social Trends, 2003*, cat. no. 4102.0, ABS, Canberra, pp. 22–25 and pp. 91–95.
- 4 Strong, K, Trickett, P, Titulaer, I & Bhatia, K 1998, *Health in rural and remote Australia*, AIHW, Canberra.
- 5 ABS 2002, *Births, Australia, 2001*, cat. no. 3301.0, ABS, Canberra, p. 36.

## How many people live in Australia's coastal areas?

At 30 June 2001 more than 8 in 10 Australians (85%) lived within 50 kilometres of the coastline of Australia, up slightly from 1996 (83%). Most people living near the coast live in capital cities as seven of these are situated on the coast. However, there has been rapid growth of coastal areas outside of Australia's capital cities (table 5.23).

In 2001, Tasmania had the highest proportion of its population (99%) living within 50 kilometres of the coast, followed by South Australia and Western Australia (both 91%) and Queensland (88%). The Northern Territory (66%) had the second lowest proportion of its population living within 50 kilometres of the coast (after the Australian Capital Territory, which is wholly inland) because a large proportion of the population lives in the inland centres of Alice Springs and Katherine.

### Coastal growth outside of the capital cities

Between 1996 and 2001 many of Australia's coastal regions outside capital city Statistical Divisions (SDs) experienced significant population growth. In general, this growth occurred more in regions close to capital cities and less in regions situated farther from capital cities, and in many cases the growth rates for these regions far exceeded the rates recorded for their respective states.

In New South Wales all coastal local government areas (LGAs) outside the Sydney SD recorded population growth between 1996 and 2001.

Tweed (A), on the New South Wales–Queensland border, recorded the highest average annual growth of all New South Wales coastal LGAs, increasing by 2.8% per year between 1996 and 2001. The nearby LGAs of Byron (A) (up 2.2%) and Ballina (A) (up 1.9%) also experienced significant growth. In comparison, the population of New South Wales increased by an average 1.2% per year for the same period. Closer to Sydney, the populations of the LGAs of Hastings (A), Great Lakes (A) and Port Stephens (A) all increased by more than 2.3% per year, while south of Sydney the LGAs of Eurobodalla (A), Shoalhaven (C), Shellharbour (C), Bega Valley (A) and Kiama (A) recorded average growth rates of between 1.7% and 2.2% per year.

To the south-east and south-west of the Melbourne SD, the coastal LGAs of Bass Coast (S) and Surf Coast (S) experienced high levels of growth between 1996 and 2001, increasing by averages of 3.5% and 3.2% per year respectively. These were significantly higher than Victoria's average growth rate for the same period (1.1% per year), however, their numerical increases (4,100 people for Bass Coast and 3,000 for Surf Coast) were smaller than the largest population increases recorded in Victoria (e.g. the LGA of Casey increased by 32,600 people between 1996 and 2001). In general, Victoria's remaining coastal LGAs outside the Melbourne SD recorded small increases or decreases in population between 1996 and 2001.

### 5.23 POPULATION LIVING WITHIN 50 KILOMETRES OF THE COAST — 30 June 2001

	Estimated resident population	Population living within 50 km of the coastline	
		no.	%
New South Wales	6 575 217	5 570 082	84.7
Victoria	4 804 726	3 975 825	82.7
Queensland	3 628 946	3 179 193	87.6
South Australia	1 511 728	1 382 623	91.5
Western Australia	1 901 159	1 732 756	91.1
Tasmania	471 795	469 259	99.5
Northern Territory	197 768	131 273	66.4
Australian Capital Territory	319 317	—	—
<b>Australia(a)</b>	<b>19 413 240</b>	<b>16 443 595</b>	<b>84.7</b>

(a) Includes Other Territories.

Source: Australian Demographic Statistics (3101.0); ABS data available on request, 2001 Estimated Resident Population.

Around the Brisbane SD, the coastal LGAs of Noosa (S), Gold Coast (C), Maroochy (S) and Caloundra (C) experienced average annual growth rates of around 3.0% or more between 1996 and 2001. These were considerably higher than Brisbane's and Queensland's overall average growth rates for the same period (each 1.7% per year). Significant growth was also recorded in a number of LGAs spread out along the remainder of Queensland's coast.

In South Australia, to the south of the Adelaide SD, the coastal LGAs of Victor Harbour (DC) (up 3.5% per year) and Alexandrina (DC) (up 2.3% per year) recorded higher growth than the state overall (0.5% per year). Port Lincoln (C) on the western coast of the Spencer Gulf increased by an average 1.6% per year, while most other South Australian coastal LGAs recorded small levels of growth, or decreases in population.

The south-west region of Western Australia recorded some of the highest growth rates of coastal LGAs in Australia between 1996 and 2001.

## Reference

Australian Bureau of Statistics, *Regional Population Growth, Australia and New Zealand, 2001–02*, cat. no. 3218.0.

The population of Busselton (S) increased by an average 4.9% per year, Augusta-Margaret River (S) by 4.7% per year, Harvey (S) by 3.5% per year and Capel (S) by 3.5% per year. To the immediate south of the Perth SD, the population of Mandurah (C) increased by an average 3.9% per year while to the immediate north of Perth, Gingin (S) increased by 4.1% per year. Further from Perth, the LGAs of Irwin (S) and Greenough (S) increased by 3.9% and 3.4% per year respectively, while in the Kimberley SD the LGAs of Broome (S) (up 6.2% per year), Derby-West Kimberley (S) (up 4.9% per year) and Wyndham-East Kimberley (S) (up 2.1%) also experienced significant growth. The growth rates of these LGAs were all considerably higher than Western Australia's overall growth rate of 1.5% per year between 1996 and 2001.

Unlike other states and territories with coastal borders, Tasmania and the Northern Territory showed little growth in coastal Statistical Local Areas other than in Hobart and Darwin.

## Births

In 2001 there were 246,400 births registered in Australia. At 1.73 babies per woman, the total fertility rate for 2001 was the lowest on record. Australia is experiencing the second of two long periods of fertility decline since 1901: from 1907 to 1934; and from 1962 to the present.

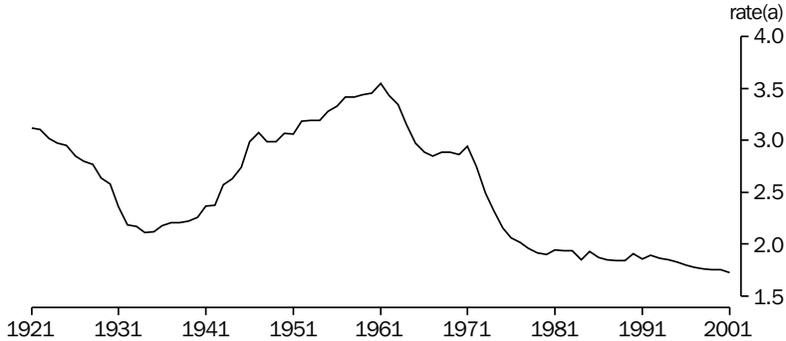
For the first decade of the 20th century the total fertility rate remained at around 3.7 to 4.0 babies per woman, then consistently declined over the next two and a half decades. By 1934, during the Great Depression, the total fertility rate had fallen to 2.1 babies per woman. It then increased during 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 peaked in 1961 when the total fertility rate reached 3.5 babies per woman (graph 5.24).

After the 1961 peak 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 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 remained since. This fall was more marked than the fall in the early-1960s and has been linked to the 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.

Of all births registered in Australia in 2001, 5% (11,400) were Indigenous — that is, at least one parent identified as Indigenous. Indigenous women have a higher fertility rate (2.14 babies per woman) than all women, largely due to relatively high fertility at younger ages. In 2001, women under 30 years of age accounted for three-quarters of the total fertility rate. The median age of Indigenous women who registered a birth in 2001 was 24.8 years, more than five years younger than the median age of all women who registered a birth (30.0 years).

## 5.24 TOTAL FERTILITY RATE



(a) Average number of babies per woman, or sum of age-specific fertility rates for each year.

Source: *Births, Australia (3301.0)*.

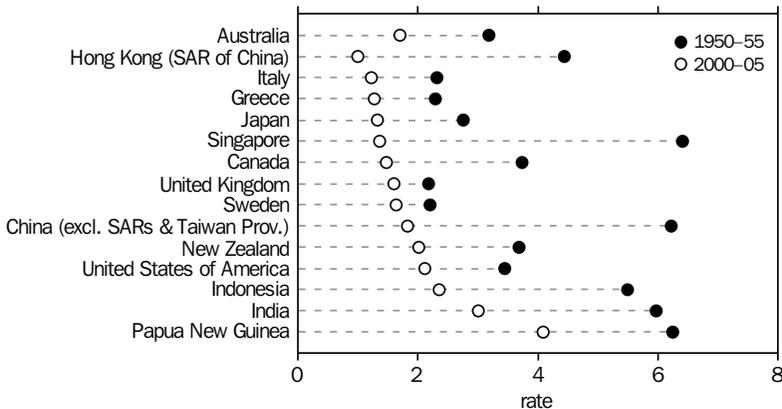
According to United Nations projections, the world average total fertility rate for 2000–05 will be 2.69 babies per woman, declining from the relatively constant five births per woman that existed until the late-1960s and early-1970s. However, total fertility rates for individual countries vary considerably. 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, developing countries have higher fertility rates while developed countries usually have lower rates.

While Australia's total fertility rate for 2001 of 1.73 babies per woman is well below the world's average, it is comparable to that of other developed countries, most of which have also experienced sustained fertility decline. According to the United Nations estimated average total

fertility rates for 2000–05, Hong Kong (SAR of China) has the lowest fertility rate of 1.00, followed by Bulgaria, Latvia and Macau (SAR of China) (1.10). Several European countries also have very low fertility, including Spain (1.15), Italy (1.23) and Greece (1.27). By contrast, many West African and Asian countries have relatively high fertility rates, with Niger (8.00) and Somalia (7.25) the highest.

Over the past 50 years, fertility has declined in most countries. Of the selected countries shown in graph 5.25, the total fertility rates of the Asian countries have shown the largest declines. Singapore and China experienced large declines in the total fertility rate of 6.4 and 6.2 children per woman respectively in 1950–55, to 1.4 and 1.8 in 2000–05.

## 5.25 INTERNATIONAL TOTAL FERTILITY RATES, Selected countries



Source: *United Nations Population Division, 'World Population Prospects: The 2002 Revision'*.

Australian women continue to delay child-bearing. The median age at child-bearing increased from 26.7 years in 1981 to 28.5 years in 1991, then to 30.0 years in 2001 (graph 5.26). Over the past 20 years there has been a fall in the proportion of births to teenage mothers, from 7.6% in 1981 to 4.8% in 2001. Conversely, the proportion of births to women aged 40 years and above has increased, from 0.8% in 1981 to 2.9% in 2001. However, births to older mothers have failed to compensate for the decline in births to younger women, resulting in the decline in total fertility.

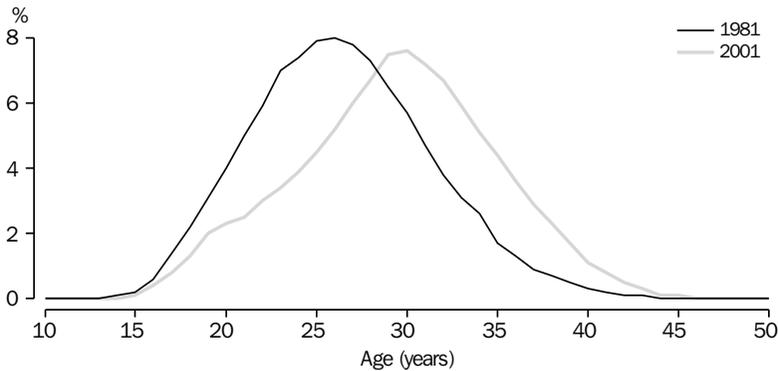
Total issue data provides an alternative to the 'snapshot' measure provided by the total fertility rate. Total issue data reveal a decline over time in the average number of children by age of women. Women who were 25–29 years of age in 1981 had 1.3 children on average, compared to 0.8 children ever born to women of the same age in 2001.

While at earlier ages the decline in average issue may be related to the postponement of child-bearing, average issue among women aged 40–44 years, which has also declined (from 2.8 children in 1981 to 2.3 children in 2001) more or less equates to completed fertility.

The proportion of women remaining childless has increased over time in each age group. For women aged 25–29 years in 1981, 35% were childless, while 59% of women of the same age in 2001 were childless. The same pattern is evident among women approaching the end of their reproductive years. In 1981, 8% of 40–44 year old women were childless. By 2001 this proportion had increased to 13%.

Table 5.27 brings together summary measures of fertility for census years between 1901 and 1986, and individual years between 1991 and 2001.

**5.26 AGE DISTRIBUTION OF WOMEN HAVING BABIES**



Source: Births, Australia (3301.0).

## 5.27 SELECTED SUMMARY MEASURES OF FERTILITY

Year ended 31 December	Registered births	Crude births	Total fertility	Ex-nuptial births(a)
	no.	rate(b)	rate(c)	%
1901	102 945	27.2	(d)3.93	n.a.
1911	122 193	27.2	(d)3.69	5.8
1921	136 198	25.0	3.12	4.7
1933	111 269	16.8	2.17	4.7
1947	182 384	24.1	3.08	4.0
1954	202 256	22.5	3.19	4.0
1961	239 986	22.8	3.55	5.1
1966	223 731	19.3	2.89	7.4
1971	276 361	21.6	2.95	9.3
1976	227 810	16.2	2.06	10.1
1981	235 842	15.8	1.94	13.2
1986	243 408	15.2	1.87	16.8
1991	257 247	14.9	1.86	23.0
1992	264 151	15.1	1.89	24.0
1993	260 229	14.7	1.86	24.9
1994	258 051	14.5	1.85	25.6
1995	256 190	14.2	1.83	26.6
1996	253 834	13.9	1.80	27.4
1997	251 842	13.6	1.78	28.1
1998	249 616	13.3	1.76	28.7
1999	248 870	13.1	1.75	29.2
2000	249 636	13.0	1.75	29.2
2001	246 394	12.6	1.73	30.7

(a) Proportion of total live births which were ex-nuptial. (b) Number of births expressed as a proportion of the total population; the rate is per 1,000 population. (c) The number of children a woman would bear during her lifetime if she experienced current age-specific fertility rates at each age of her reproductive life. (d) Estimated total fertility rate.

Source: *Australian Demographic Trends (3102.0); Births, Australia (3301.0); Hugo 2001.*

## Deaths

In 2001, 128,540 deaths (66,830 males and 61,710 females) were registered in Australia, approximately 250 more than were registered in 2000 (128,290). Since 1981 the number of deaths has increased by an average of 0.8% per year. 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 will continue to rise, with deaths projected to outnumber births sometime in the 2030s.

Despite the ageing of the population over the last 20 years, deaths rates have continued to decline. The crude death rate (CDR) fell from 7.3 deaths per 1,000 population in 1981 to 6.6 deaths per 1,000 in 2001. The fall in CDR, against the background of an older population, indicates the considerable decline in age-specific death rates over the period. The standardised death rate (which removes the effect of the changing age structure of the population) was 5.4 deaths per 1,000 population in 2001, down by 5% since 2000 (5.7 deaths) and down by 36% since 1981 (8.4 deaths).

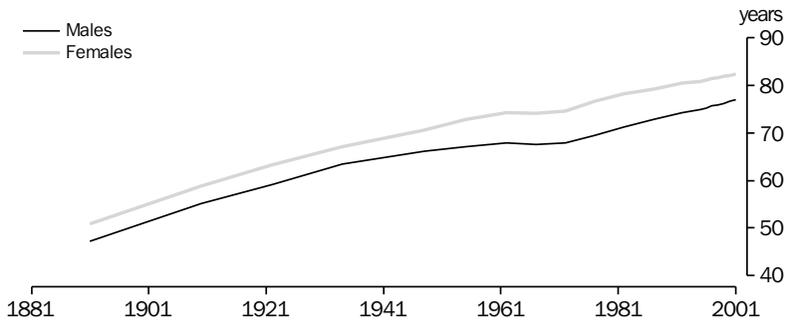
There were 2,060 deaths registered in Australia in 2001 where the deceased person was identified as being of Aboriginal, Torres Strait Islander or both origins (Indigenous), a decrease of around 60 deaths (3%) on the number registered in 2000. It is considered likely that most Indigenous deaths are registered but a proportion of these deaths are not identified as 'Indigenous'.

## Life expectancy

Life expectancy refers to 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 continued throughout his or her remaining lifetime.

Over the past century, the average life expectancy of a new-born boy has increased from 55 years in 1901–10 to 77 years in 1999–2001. Likewise, the average life expectancy of a new-born girl has increased from 59 to 82 years during the same period (graph 5.28). These represent an increase of 22 years for boys and 24 years for girls. The increase in life expectancy at birth is due to lower death rates at all ages.

## 5.28 LIFE EXPECTANCY AT BIRTH



Note: The years shown are at selected points in time, for example, 2001 is the endpoint of the range 1999–2001.

Source: *Deaths, Australia* (3302.0).

Differences in Indigenous and total mortality are reflected in substantially lower life expectancy for the Indigenous population. At the national level, life expectancy at birth for the period 1999–2001 was estimated to be about 56 years for Indigenous males and 63 years for Indigenous females (including an adjustment for the estimated under-coverage of Indigenous deaths). This compares to life expectancy at birth of 77 years for total males, and 82 years for total females. Australia's Indigenous peoples have a substantially younger age profile than the total population but life expectancy at birth accounts for this difference.

The reduction in mortality in the early part of the 20th century has been attributed to improvements in living conditions, such as better water supply, sewerage systems, food quality and health education. The continuing reduction in mortality in the latter half of last century has been attributed to improving social conditions, and to 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 to lower infant mortality, fewer deaths among young adults from motor vehicle accidents and fewer deaths among older men from heart disease. The reduction in the number of deaths from heart disease has been related to behavioural changes, such as dietary improvements and reduced smoking.

During the 20th century the life expectancy of new-born girls was consistently higher than that of new-born boys. Up until the early-1930s, a

new-born girl had a life expectancy approximately four years greater than that of a new-born boy, with this difference peaking at about seven years in the 1970s and early-1980s, largely due to significant declines in heart disease, stroke and respiratory disease mortality among women, combined with a slight decline in male life expectancy from accidents among males aged 15–24 years and from heart disease among 45–84 year old males. In recent years, the gap in life expectancy between new-born men and women has narrowed to about five years (5.4 years in 1999–2001). This can be attributed to the large reductions in death rates of males aged 45 years and over, and particularly to the reduction in heart disease deaths among males.

The increase in life expectancy for older persons has implications for retirement planning and income policies. Life expectancy of 65 year olds has increased from 14 years for males and 18 years for females in 1981, to 17 years for males and 21 years for females in 1999–2001.

Australians have a life expectancy at birth which compares well with that experienced in other developed nations. Among the countries shown in table 5.29, the life expectancy at birth of Australian males and females (77 and 82 years respectively) was exceeded only by that in Japan (both males and females), Hong Kong (SAR of China) (both males and females) and France (females). The life expectancy of new-born babies in Australia was higher than in New Zealand, the United Kingdom, Canada and the United States of America.

### 5.29 LIFE EXPECTANCY AT BIRTH, Selected countries — 2000–05

	Males	Females
	years	years
<b>Australia(a)</b>	<b>77.0</b>	<b>82.4</b>
Canada	76.7	81.9
China (excl. SARs & Taiwan Prov.)	68.9	73.3
France	75.2	82.8
Germany	75.2	81.2
Hong Kong (SAR of China)	77.3	82.8
India	63.2	64.6
Indonesia	64.8	68.8
Italy	75.5	81.9
Japan	77.9	85.1
Korea, Republic of (South)	71.8	79.3
Netherlands	75.6	81.0
New Zealand	75.8	80.7
Papua New Guinea	56.8	58.7
Singapore	75.9	80.3
United Kingdom	75.7	80.7
United States of America	74.3	79.9

(a) Reference period for Australia is 1999–2001.

Source: *Deaths, Australia (3302.0)*; United Nations Department of Economic and Social Affairs, Statistics Division, 2003 web site.

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. Table 5.30 shows the expectations of life at specific ages for Australian males and females. The figures have been obtained from ABS life tables based on demographic characteristics of the Australian population for the period 1999–2001.

### 5.30 EXPECTATION OF LIFE

At exact age	Males	Females
	years	years
0	77.03	82.41
10	67.63	72.93
20	57.90	63.06
30	48.54	53.30
40	39.14	43.60
50	29.88	34.11
60	21.17	25.02
70	13.59	16.62
80	7.76	9.54
90	4.23	4.80
100	3.17	2.72

Source: *Deaths, Australia (3302.0)*.

Table 5.31 brings together summary measures of mortality for census years between 1901 and 1986, and individual years between 1991 and 2001.

## International migration

Each year Australia's population increases as a result of net overseas migration (the excess of permanent and long-term arrivals over permanent and long-term departures, with an adjustment for category jumping) and natural increase (the excess of births over deaths).

At 30 June 2002, the ERP of Australia was 19.7 million. Over the preceding 12 months the population increased by 249,500 persons, representing a national population growth rate of 1.3% since 30 June 2001. In 2001–02 the estimate of net overseas migration was 133,700, representing 54% of Australia's population growth for the year. The net overseas migration figure is preliminary because of deficiencies which have been identified in the measurement of category jumping, resulting in category jumping being set to zero pending a review (table 5.32).

### 5.31 SELECTED SUMMARY MEASURES OF MORTALITY

Year ended 31 December	Registered deaths no.	Crude death rate(b)	Infant mortality rate(c)	Life expectancy at birth(a)	
				Males years	Females years
1901	46 330	12.2	103.6	55.2	58.8
1921	54 076	9.9	65.7	59.2	63.3
1933	59 117	8.9	39.5	63.5	67.1
1947	73 468	9.7	28.5	66.1	70.6
1954	81 805	9.1	22.5	67.1	72.8
1961	88 961	8.5	19.5	67.9	74.2
1966	103 929	9.0	18.7	67.6	74.2
1971	110 650	8.5	17.3	68.3	74.8
1976	112 662	8.0	13.8	69.4	76.4
1981	109 003	7.3	10.0	71.4	78.4
1986	114 981	7.2	8.8	72.9	79.2
1991	119 146	6.9	7.1	74.4	80.4
1992	123 660	7.1	7.0	74.5	80.4
1993	121 599	6.9	6.1	75.0	80.9
1994	126 692	7.1	5.9	75.0	80.9
1995	125 133	6.9	5.7	75.5	81.1
1996	128 719	7.0	5.8	75.5	81.3
1997	129 350	7.0	5.3	75.9	81.4
1998	127 202	6.8	5.0	76.3	81.8
1999	128 102	6.8	5.7	76.6	82.0
2000	128 291	6.7	5.2	77.1	82.3
2001	128 544	6.6	5.3	77.5	82.6

(a) Data for 1901 are based on the period 1901–10. Data for 1921–66 are based on three-year averages, with the year shown being the midpoint of the range. Data for 1971 onwards are based on individual years. (b) Per 1,000 population. (c) Per 1,000 live births.

Source: *Australian Demographic Trends (3102.0)*; *Deaths, Australia (3302.0)*; ABS data available on request, *Deaths Registration Collection*.

Overseas migration has played an important role in changing Australia's population. In the year ending 30 June 2003, 373,800 people arrived in Australia intending to stay for one year or more (table 5.32). This included permanent (settler) arrivals, Australian residents returning from an overseas trip of 12 months or more, and overseas visitors intending to stay 12 months or more in Australia. About 219,600 people left Australia for overseas on a permanent or long-term basis in the year ending 30 June 2003, including Australian residents emigrating or going overseas for 12 months or more, and overseas visitors leaving Australia after staying for 12 months or more.

Because population estimates include permanent and long-term movers and exclude short-term movers, adjustments are required for the net effect of changes in travel intention from short-term to permanent/long-term and vice versa. For example, an Australian resident may state on departure an intention to stay abroad for less than 12 months (a short-term movement). If this resident remains overseas for 12 months or more, he or she has changed travel category from short-term to long-term and is regarded as a

category jumper. Estimates for category jumping ensure that the estimated population reflects the population who usually live in Australia. However, due to problems identified in the processing of information on traveller intentions, category jumping from September quarter 1997 has been set to zero, pending a review.

There has been a significant change in the source countries of permanent arrivals, with settlers arriving from more diverse regions of the world since the mid-1990s compared to the early-1980s. In 1982–83, 28% of settler arrivals to Australia were born in the United Kingdom, 9% were born in Vietnam and 7% were born in New Zealand. In 2002–03, the United Kingdom and New Zealand both contributed 13% of all settler arrivals, although in 2001–02 settler arrivals born in the United Kingdom only contributed 10% of all settler arrivals in that year. Settler arrivals born in China (7%), India (6%) and South Africa (5%) all contributed 5% or more of all settlers in 2002–03, compared to only 1%, 2% and 3% respectively in 1982–83 (table 5.33).

### 5.32 NET OVERSEAS MIGRATION COMPONENTS — Selected years

	Year ended 30 June					
	1983	1993	1998	2001	2002	2003
<b>Arrivals</b>						
Permanent (settlers)	93 011	76 330	77 327	107 366	88 900	93 914
Long-term						
Australian residents	48 986	69 594	84 358	82 893	88 598	95 784
Overseas visitors	30 742	57 842	103 756	158 311	175 873	184 095
<i>Total</i>	<i>172 739</i>	<i>203 766</i>	<i>265 441</i>	<i>348 570</i>	<i>353 371</i>	<i>373 793</i>
<b>Departures</b>						
Permanent departures	24 830	27 905	31 985	46 521	48 241	50 463
Long-term						
Australian residents	47 020	65 446	79 422	92 945	92 071	86 211
Overseas visitors	25 438	47 744	74 872	73 431	79 375	82 894
<i>Total</i>	<i>97 288</i>	<i>141 095</i>	<i>186 279</i>	<i>212 897</i>	<i>219 687</i>	<i>219 568</i>
Category jumping(a)	-2 155	-32 629	—	—	—	—
<b>Net overseas migration</b>	<b>73 296</b>	<b>30 042</b>	<b>79 162</b>	<b>135 673</b>	<b>133 684</b>	<b>154 225</b>

(a) Deficiencies identified in the measurement of category jumping have led to the decision to set category jumping to zero for periods from September 1997, pending a review.

Source: *Migration, Australia (3412.0)*.

### 5.33 COUNTRY OF BIRTH OF SETTLER ARRIVALS — Selected years

	no.		%	
<b>1982–83</b>				
China (excl. SARs & Taiwan Prov.)	1 167	1.3		
India	1 673	1.8		
New Zealand	6 867	7.4		
South Africa	2 758	3.0		
United Kingdom	26 444	28.4		
Vietnam	8 690	9.3		
<i>All settler arrivals</i>	<i>93 011</i>	<i>100.0</i>		
<b>1992–93</b>				
China (excl. SARs & Taiwan Prov.)	3 046	4.0		
India	3 553	4.7		
New Zealand	6 694	8.8		
South Africa	1 021	1.3		
United Kingdom	9 484	12.4		
Vietnam	5 651	7.4		
<i>All settler arrivals</i>	<i>76 330</i>	<i>100.0</i>		
<b>2001–02</b>				
China (excl. SARs & Taiwan Prov.)	6 708	7.5		
India	5 091	5.7		
New Zealand	15 663	17.6		
South Africa	5 714	6.4		
United Kingdom	8 749	9.8		
Vietnam	1 919	2.2		
<i>All settler arrivals</i>	<i>88 900</i>	<i>100.0</i>		
<b>2002–03</b>				
China (excl. SARs & Taiwan Prov.)	6 664	7.1		
India	5 783	6.2		
New Zealand	12 368	13.2		
South Africa	4 603	4.9		
United Kingdom	12 508	13.3		
Vietnam	2 568	2.7		
<i>All settler arrivals</i>	<i>93 914</i>	<i>100.0</i>		

Source: *Migration, Australia (3412.0)*.

### Migration Program

In 2001–02, 88,900 people arrived in Australia intending to settle, the majority of whom (67%) arrived as part of the Migration Program. Another 8% arrived as part of the Humanitarian Program, while 24% were eligible to settle in Australia because of their New Zealand citizenship.

The number of visas issued to prospective settlers varies significantly from year-to-year. So too does the balance between the types of visas issued. Table 5.34 shows that in the six years to 2001–02, the proportion of settlers arriving under the skilled migration category ranged from 23% in 1996–97 to 41% in 2001–02.

Of skilled migrants arriving in 2001–02, 20% came from Europe and the former USSR (70% of whom were from the United Kingdom and Ireland), while South-East Asia contributed 22% and Africa (excluding North Africa) contributed 18%. North-East Asia and Southern Asia contributed 16% each of skilled immigrants to Australia during 2001–02.

In 2001–02, 26% of settlers came as part of the family component of Australia's immigration program. The birthplaces of these immigrants partly reflect past migration patterns. About 25% were born in Europe and the former USSR, 25% were born in South-East Asia, and a further 16% were born in North-East Asia.

### 5.34 SETTLER ARRIVALS, By eligibility category

	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02
Family	36 490	21 142	21 501	19 896	20 145	23 344
Skilled	19 697	25 985	27 931	32 350	35 715	36 036
Humanitarian	9 886	8 779	8 790	7 267	7 640	6 732
New Zealand	17 501	19 393	24 680	31 610	42 257	21 458
Other	2 178	2 028	1 241	1 149	1 609	1 330
<b>Total</b>	<b>85 752</b>	<b>77 327</b>	<b>84 143</b>	<b>92 272</b>	<b>107 366</b>	<b>88 900</b>

Source: Department of Immigration and Multicultural Affairs, 'Immigration Update' (1996–97 to 1999–2000); Department of Immigration and Multicultural and Indigenous Affairs, 'Immigration Update' (2000–01 to 2001–02).

Of the 6,700 settlers arriving as part of the Humanitarian Program, 2,400 (36%) came from Europe and the former USSR, almost all of whom were from Southern Europe (in particular, the Federal Republic of Yugoslavia). A further 2,400 immigrants (36%) arriving on humanitarian visas were born in North Africa and the Middle East.

During 2001–02, in addition to the 66,300 settler arrivals under the Migration and Humanitarian Programs, there were a further 22,600

non-program (i.e. non-visaed) arrivals. Traditionally, non-program migrants are predominantly New Zealand citizens, and they accounted for 95% of non-program migrants in 2001–02. Under the Trans-Tasman Agreement, New Zealand citizens are free to travel to Australia and remain indefinitely without applying for a visa.

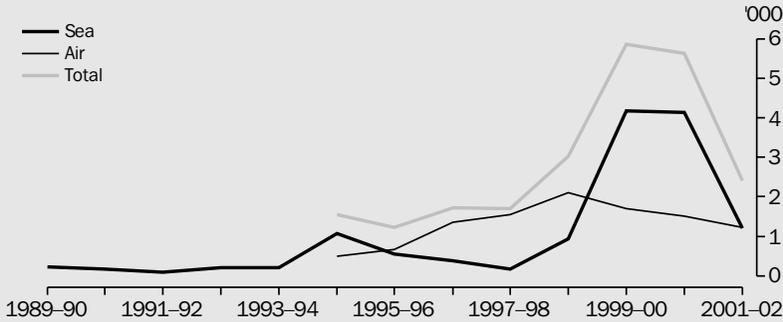
## Unauthorised arrivals and overstayers in Australia

Apart from people who enter Australia via authorised means, a number of people enter Australia by unauthorised means, whether by boat or air. Unauthorised entrants are not included in long-term or permanent arrivals or net overseas migration estimates as they do not complete passenger cards. As well as those who arrive in Australia without authorisation, a number of people who have arrived in Australia on valid temporary visas remain in Australia after their visas have expired.

The Australian Bureau of Statistics publishes estimates of the population in each state and territory every three months. These are produced by taking the population at an initial point and updating it by adding births, subtracting deaths and adding net migration. Currently, unauthorised entrants and overstayers who arrive for less than 12 months of stay in Australia are not included in these population estimates. If these people remain in Australia, they will be included at the next Census of Population and Housing.

According to the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA), around 2,400 unauthorised entrants arrived in Australia during 2001–02, a decrease of 57% from 2000–01 (5,660) (graph 5.35). Most of this decline was due to the decline in arrivals by boat: in 2001–02, 50% of unauthorised arrivals (1,210) arrived by boat, 71% less than in 2000–01 (4,140). The remaining 50% (1,190) arrived at Australian airports and were refused entry, 21% less than in 2000–01. The substantial decrease in unauthorised boat arrivals reversed the trend of recent years. The number of unauthorised boat arrivals in 2000–01 was only slightly below that of the previous year (4,180), which was the highest figure recorded since 1989–90. This decline may reflect the impact of recent measures by the Australian Government to discourage unauthorised arrivals.

### 5.35 ARRIVALS OF UNAUTHORISED ENTRANTS, By air and sea



Note: Information on unauthorised air arrivals prior to the year ended 30 June 1994 is unavailable.

Source: Department of Immigration and Multicultural and Indigenous Affairs, Fact Sheet 74, *Unauthorised Arrivals by Air and Sea*.

### 5.36 UNAUTHORISED ARRIVALS BY AIR, By source country — 2001-02

Source country	no.
China (excl. SARs & Taiwan Prov.)	95
India	41
Indonesia	48
Japan	31
Malaysia	160
New Zealand	128
Korea, Republic of (South)	99
Thailand	83
United States of America	61
United Kingdom	57
Other	390
<b>Total</b>	<b>1 193</b>

Source: Department of Immigration and Multicultural and Indigenous Affairs, Fact Sheet 74, *Unauthorised Arrivals by Air and Sea*.

As many unauthorised entrants have no travel documents on arrival in Australia, the citizenship of these entrants is sometimes difficult to determine. The origin country of the arrivals by air is used when citizenship is not available, while ethnicity is used for unauthorised entrants arriving by boat. In 2001-02, 13% of unauthorised entrants arriving in Australia by air originated in Malaysia, 11% originated in New Zealand, 8% originated in The Republic of (South) Korea and 8% originated in China (table 5.36). Most recent

unauthorised arrivals by sea were Chinese, Turkish, Iraqi, Pakistani, Sri Lankan, Afghan or Bangladeshi. This contrasts with earlier arrivals by boat, who were mainly Chinese, Vietnamese and Cambodian.

### Overstayers

Initially overstayers arrive in Australia with valid temporary visas. When gaining a visa to enter Australia, people agree to comply with the conditions of that visa and to leave Australia before it expires. When in Australia, applications for visa extensions can be requested for legitimate reasons. However a small proportion (less than 1%) become overstayers. According to DIMIA, the majority of people who overstay their visa are simply extending a short stay in Australia by a few days or weeks and leave of their own accord. Others overstay in the hope of living and working in Australia.

At 30 June 2002, Australia's stock of overstayers was estimated at 60,000 people. Approximately 19% had overstayed their visa by less than a year and a further 14% had overstayed by between one and two years, whereas 27% had overstayed their visa by 10 years or more.

### References

Department of Immigration and Multicultural and Indigenous Affairs, *Fact Sheet 74, Unauthorised Arrivals by Air and Sea*.

## Country of birth

In 1901, 23% of Australia's population was overseas-born. Since the end of World War II, Australia has experienced large yearly increases in population due to a combination of high fertility and high levels of migration. In 1947 the proportion of the population born overseas was 10%, and by 1991, this proportion had increased to 24% (table 5.37). In 2001 the number of overseas-born Australians was 4.5 million, or 23% of the total population. Over the past 100 years, the range of countries of birth has increased substantially.

For the last few decades, the Italian, Greek and Dutch-born populations in Australia have been declining. The major migration flows from these countries occurred immediately after World War II,

and there has been relatively little migration more recently. As these populations have moved into the older age groups, they have experienced high numbers of deaths. Furthermore, small numbers of people are returning to their countries of birth in their retirement.

The 2001 census showed that 25% of persons born in Australia had at least one overseas-born parent; that is, they were second generation Australians (table 5.38). Of Australian-born children with at least one overseas-born parent 44% had both parents born overseas, 34% had their father born overseas and 22% their mother born overseas. The variety and size of second generation populations reflect past migration and intermarriage patterns.

**5.37 MAIN COUNTRIES OF BIRTH OF THE POPULATION**

	1901(a)	1947(a)	1954(a)	1961(a)	1971(a)	1981(a)	1991(b)	2001(b)
	'000	'000	'000	'000	'000	'000	'000	'000
United Kingdom and Ireland	679.6	546.2	664.2	755.4	1 081.3	1 120.9	1 244.3	1 182.8
New Zealand	25.8	43.6	43.4	47.0	74.1	160.7	286.4	394.1
Italy	5.7	33.6	119.9	228.3	288.3	275.0	272.0	238.5
Vietnam	n.a.	n.a.	n.a.	n.a.	n.a.	40.7	124.8	169.5
China (excl. SARs & Taiwan Prov.)	29.9	6.4	10.3	14.5	17.1	25.2	84.6	157.0
Greece	0.9	12.3	25.9	77.3	159.0	145.8	147.4	132.5
Germany	38.4	14.6	65.4	109.3	110.0	109.3	120.4	117.5
Philippines	0.7	0.1	0.2	0.4	2.3	14.8	79.1	112.2
India	7.6	(c)8.2	12.0	14.2	28.7	41.0	66.2	103.6
Netherlands	0.6	2.2	52.0	102.1	98.6	95.1	100.9	91.2
Malaysia	n.a.	1.0	2.3	5.8	14.4	30.5	79.9	87.2
South Africa	0.5	5.9	6.0	7.9	12.2	26.5	55.8	86.9
Lebanon	n.a.	(d)1.9	3.9	7.3	23.9	49.4	78.5	80.0
Hong Kong (SAR of China)	0.2	0.8	1.6	3.5	5.4	15.3	62.4	75.2
Poland	n.a.	6.6	56.6	60.0	59.5	59.0	69.5	67.5
Yugoslavia	n.a.	5.9	22.9	49.8	128.2	148.6	(e)168.0	(e)64.0
United States of America	7.4	6.2	8.3	10.8	26.8	28.9	49.5	59.0
Sri Lanka	0.6	n.a.	2.0	3.4	9.0	16.8	40.4	58.6
All overseas-born	865.5	744.2	1 286.5	1 778.8	2 546.4	3 128.1	3 965.3	4 482.1
Australia	2 908.3	6 835.2	7 700.1	8 729.4	10 173.1	11 388.8	13 318.8	14 931.2
<b>Total population(f)</b>	<b>3 773.8</b>	<b>7 579.4</b>	<b>8 986.5</b>	<b>10 508.2</b>	<b>12 719.5</b>	<b>14 516.9</b>	<b>17 284.0</b>	<b>19 413.2</b>

(a) Census counts. (b) Estimated resident population at 30 June. (c) Includes British India and Ceylon. (d) Includes Syria and Lebanon. (e) Former Yugoslav republics. (f) Includes country of birth 'Not stated' and 'At sea'.

Source: *Migration, Australia (3412.0)*; ABS data available on request, *Estimated Resident Population*.

### 5.38 BIRTHPLACE OF PARENTS OF AUSTRALIAN BORN PEOPLE — 2001

	no.	%
Both parents born in Australia	9 797 613	71.9
One or both parents born overseas	3 427 890	25.1
Not stated	403 978	3.0
<b>Total</b>	<b>13 629 481</b>	<b>100.0</b>

Source: ABS data available on request, 2001 Census of Population and Housing.

## Marriages and divorces

Marriage rates in Australia have fluctuated since 1901, broadly in response to the prevailing economic and social conditions. The crude marriage rate (the annual number of registered marriages per 1,000 population) has fallen in times of depression or recession (e.g. in the 1930s), and increased in other times such as the immediate

post-war years of the early-1920s and late-1940s. Marriage rates have also increased during times of war. The 2001 crude marriage rate of 5.3 marriages per 1,000 population was the lowest rate on record. The previous lowest rate was 5.8 per 1,000, recorded in 1997. The highest crude marriage rate ever recorded was 12.0 per 1,000 in 1942 (table 5.39).

Table 5.39 brings together summary measures of marriages for census years between 1901 and 1991, and individual years between 1992 and 2001.

The crude marriage rate has been declining since 1970. This decline in the marriage rate can be mainly attributed to changes in attitudes to marriage and living arrangements that have occurred since then.

The fluctuations in the crude marriage rate between 1901 and 2001 are shown in graph 5.40.

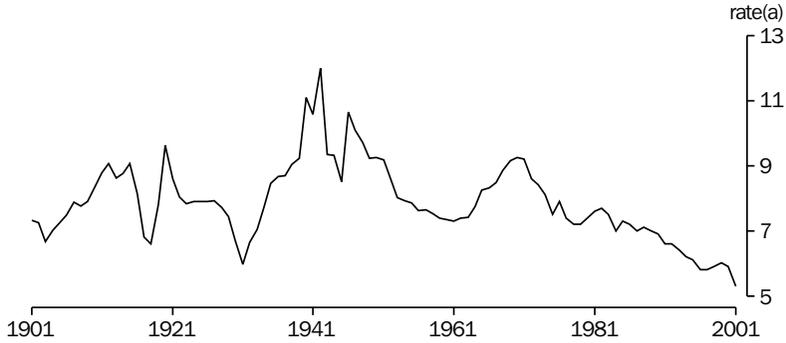
### 5.39 SELECTED SUMMARY MEASURES OF MARRIAGES

Year ended 31 December	Registered marriages no.	Crude marriage rate(a)	Median age at marriage	
			Bridegroom years	Bride years
1901	27 753	7.3	n.a.	n.a.
1921	46 869	8.6	27.7	24.5
1933	46 595	7.0	27.0	23.7
1947	76 457	10.1	26.0	23.0
1954	71 229	7.9	25.6	22.6
1961	76 686	7.3	24.9	21.8
1966	96 061	8.3	24.2	21.5
1971	117 637	9.2	23.8	21.4
1976	109 973	7.9	24.9	22.2
1981	113 905	7.6	25.9	23.3
1986	114 913	7.2	27.3	24.9
1991	113 869	6.6	28.4	26.0
1992	114 752	6.6	28.7	26.3
1993	113 255	6.4	28.8	26.4
1994	111 174	6.2	29.0	26.6
1995	109 386	6.1	29.2	26.8
1996	106 103	5.8	29.6	27.2
1997	106 735	5.8	29.7	27.5
1998	110 598	5.9	29.8	27.7
1999	114 316	6.0	30.1	27.9
2000	113 429	5.9	30.3	28.3
2001	103 130	5.3	30.6	28.6

(a) Per 1,000 population.

Source: Australian Demographic Statistics (3101.0); Marriages and Divorces, Australia (3310.0).

#### 5.40 CRUDE MARRIAGE RATE



(a) Rate per 1,000 population.

Source: *Australian Social Trends (4102.0)*; *Marriages and Divorces, Australia (3310.0)*.

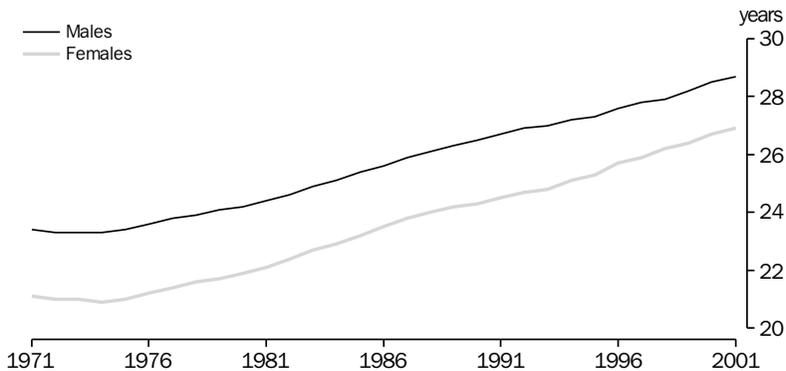
Marriage rates for the unmarried population (per 1,000 not currently married men or women aged 15 years and over) have also fallen over time. This long-term downward trend has been evident since these rates first became available in 1976. The marriage rate for men was 63 per 1,000 in 1976 while the rate for women was 61 per 1,000. In 2000 these rates fell to 34 and 32, respectively.

Recent trends show that Australians are marrying later. The median ages of brides and bridegrooms at first marriage have increased from 21.1 and 23.4 years respectively in 1971 to 26.9 and

28.7 years in 2001 (graph 5.41). Part of this increase can be attributed to the increasing incidence of de facto relationships. Another factor is young people staying in education longer.

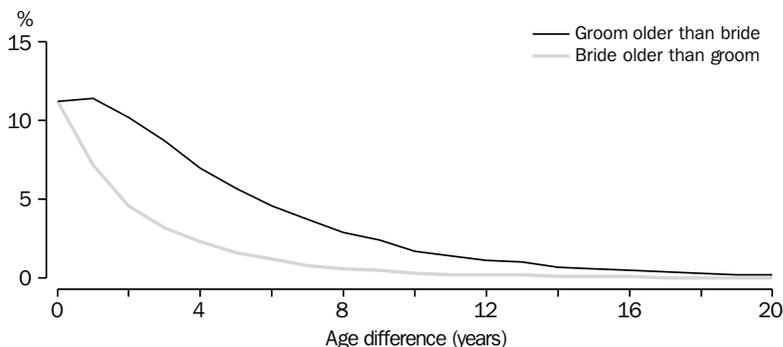
In 2001, 66% of marriages had a groom older than the bride and 23% of brides were older than grooms. However, there was a strong tendency for couples to be about the same age, with 45% of couples being within two years of each other, and only 10% being 10 or more years apart in age (graph 5.42).

#### 5.41 MEDIAN AGE AT FIRST MARRIAGE



Source: *Marriages and Divorces, Australia (3310.0)*.

**5.42 BRIDE AND GROOM AGE DIFFERENCE AT MARRIAGE,  
Proportion of all marriages — 2001**



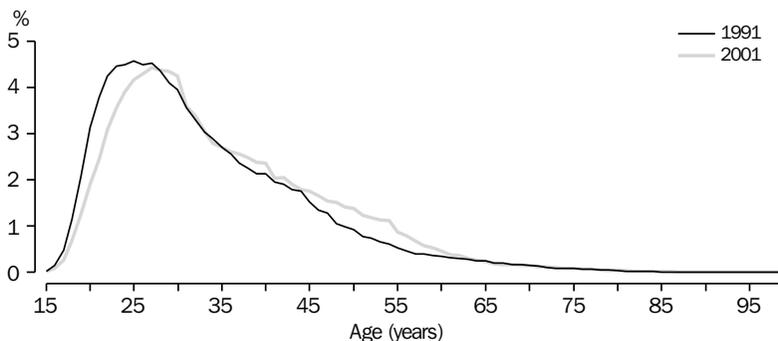
Source: *Marriages and Divorces, Australia, 2001* (3310.0).

**De facto relationships**

Between 1996 and 2001 the census count of people, aged 15 years and over, in de facto marriages rose by 28% from 744,100 to 951,500. This was marginally higher than the increase between 1991 and 1996 (27%). In 2001, de facto partners represented 12% of all persons living as socially married (up from 10% in 1996 and 8% in 1991) and 6% of all persons aged 15 years and

over (up from 5% in 1996 and 4% in 1991). 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 marriages. In 2001 the median age of males in a de facto marriage was 34.2 years while the median age of females was 31.8 years. In 1991 the comparative medians were 32.3 years and 29.7 years respectively (graph 5.43).

**5.43 DE FACTO PARTNERS**



Note: Opposite sex couples only.

Source: ABS data available on request, *Census of Population and Housing*.

De facto partnering has arisen as an alternative living arrangement prior to, or instead of marriage, and following separation, divorce or widowhood. Some couple relationships, such as that between a boyfriend and girlfriend who live together but do not consider their relationship to be marriage-like, are classified as de facto.

Of all people in de facto relationships in 2001, 68% had never been in a registered marriage and 28% were either separated or divorced. The likelihood of being never married was higher among those aged under 35, counterbalanced by higher proportions of separated and divorced de facto partners aged 35 and over (graph 5.44).

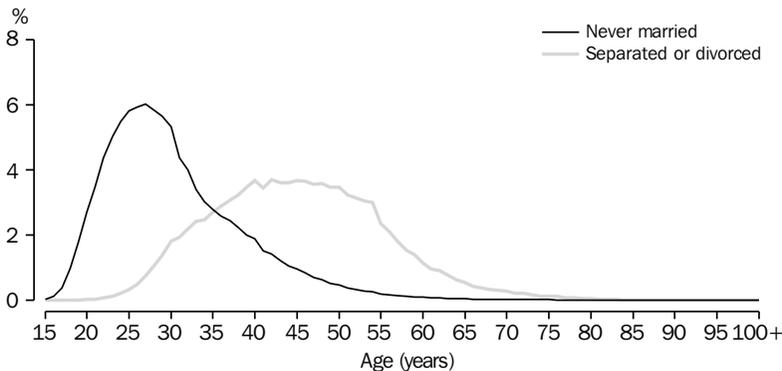
### Divorces

For most of the 20th century there was a slow but steady rise in the divorce rate, increasing from annual averages of 0.1 divorces per 1,000 population between 1901 and 1910 to 0.8 per 1,000 between 1961 and 1970. However, the most important factor involved in the higher divorce rates in the latter

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 until 1979 as the backlog of applications was cleared. Since then the crude divorce rate has fluctuated between 2.4 and 2.9 divorces per 1,000 population (graph 5.45). The crude divorce rate in 2001 was 2.8 per 1,000 population. The pattern of divorces per 1,000 married couples is very similar; in 2000 there were 12.0 divorces per 1,000 married men or women.

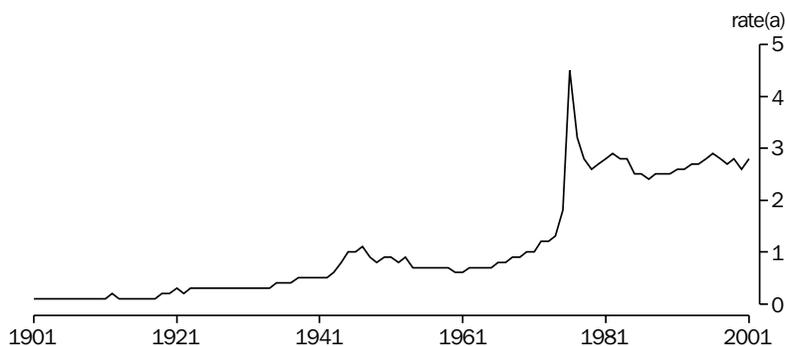
Table 5.46 brings together summary measures of divorces granted in census years between 1901 and 1991, and individual years between 1992 and 2001.

**5.44 PERSONS IN DE FACTO RELATIONSHIPS — 2001**



Source: ABS data available on request, 2001 Census of Population and Housing.

## 5.45 CRUDE DIVORCE RATE



(a) Rate per 1,000 population.

Source: *Marriages and Divorces, Australia (3310.0)*.

## 5.46 SELECTED SUMMARY MEASURES OF DIVORCES

Year ended 31 December	Divorces granted no.	Crude divorce rate(a)	Median age at date decree made absolute	
			Husband years	Wife years
1901	398	0.1	n.a.	n.a.
1921	1 490	0.3	n.a.	n.a.
1933	1 954	0.3	n.a.	n.a.
1947	8 705	1.1	n.a.	n.a.
1954	6 457	0.7	37.8	34.5
1961	6 712	0.6	38.7	35.9
1966	9 859	0.8	40.4	36.9
1971	12 947	1.0	37.9	34.4
1976	63 230	4.5	36.2	33.1
1981	41 412	2.8	35.5	32.8
1986	39 417	2.5	37.5	34.7
1991	45 652	2.6	38.4	35.5
1992	45 729	2.6	38.7	35.9
1993	48 363	2.7	39.3	36.4
1994	48 312	2.7	39.7	36.8
1995	49 712	2.8	40.0	37.1
1996	52 466	2.9	40.2	37.4
1997	51 288	2.8	40.3	37.6
1998	51 370	2.7	40.5	37.8
1999	52 566	2.8	40.9	38.2
2000	49 906	2.6	41.4	38.6
2001	55 330	2.8	41.8	39.1

(a) Per 1,000 population.

Source: *Australian Demographic Statistics (3101.0)*; *Marriages and Divorces, Australia (3310.0)*.

## Households and families

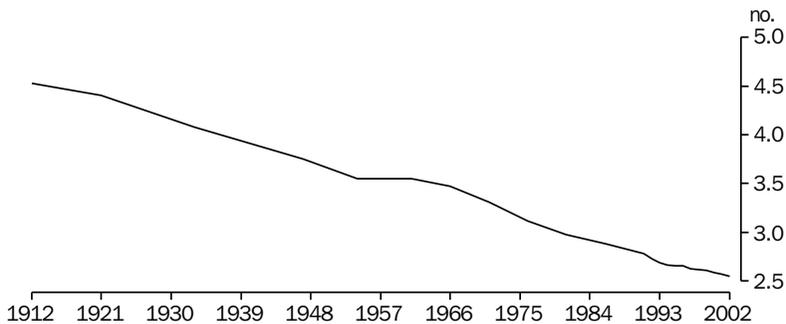
At 30 June 2002 there were an estimated 7.5 million households in Australia, which were home to 19.4 million Australians, or 98% of the resident population. Over the past 90 years the number of households has increased by an average 2.4% per year, compared to 1.6% average increase per year in the population over the same period. Reflecting the disproportionate growth in households is the fall in average size of households — from 4.5 persons per household in 1911 to 2.6 persons per household in 2002 (graph 5.47). Much of the decline in the number of persons per household over this period can be attributed to reductions in completed family size, and the associated increase in one- and two-person households over the period. The number of one-person households has grown largely from the ageing of the population, while a combination of ageing, increased childlessness among couples and an increase in the number of one-parent families has contributed to the increase in the number of two-person households.

## Families

Over the past decade there have been significant changes in the types of families in Australia. In 2001, of the 4.9 million families counted in the census there were 2.3 million couple families with children (47.0%). The number of families with this family type was the same at the time of the 1991 census but the proportion has declined, from 53.7%, as the number of all families has grown (from 4.3 million).

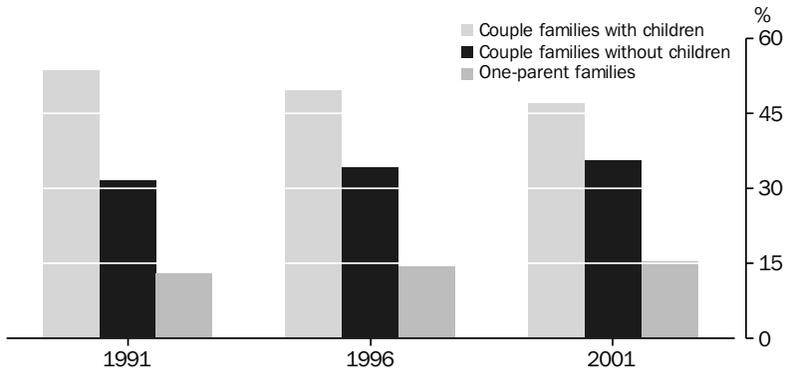
While families with children remained the most common family type in 2001, other family types have grown significantly in the last 10 years. Couple families without children increased by 30% from 1.4 million in 1991 to 1.8 million in 2001. These are comprised of couples who have not yet had children and also couples whose children have left home. One-parent families also increased, from 552,400 in 1991 to 762,600 in 2001, an increase of 38% (graph 5.48).

**5.47 AVERAGE HOUSEHOLD SIZE, Persons per household**



Source: Australian Demographic Statistics (3101.0); Census of Population and Housing, 1911 to 1981; <<http://www.abs.gov.au>>, Time Series Spreadsheet, Demography, 3101.0, table 25, 'Estimated Resident Households'; ABS statistics available on request, Household Estimates.

### 5.48 FAMILIES, Selected family types



Source: ABS data available on request, Census of Population and Housing.

### Household and family projections

Household and family projections are estimates of future numbers of households and families, based on assumptions about changing living arrangements of the population. The ABS has published three series of projections for the years 1996–2021. These series are based on varying assumptions about trends in living arrangements. In Series A the pattern of living arrangements of individuals is the same as in 1996. In Series B and C, recent trends in the patterns of living arrangements are incorporated into the projections. In Series B the average annual rate of change in living arrangements experienced between 1986 and 1996 is applied in reducing levels (in full between 1996 and 2001, in fractions to 2011, and then held constant to 2021). In Series C the rate of change experienced between 1986 and 1996 is applied in full throughout the projection period.

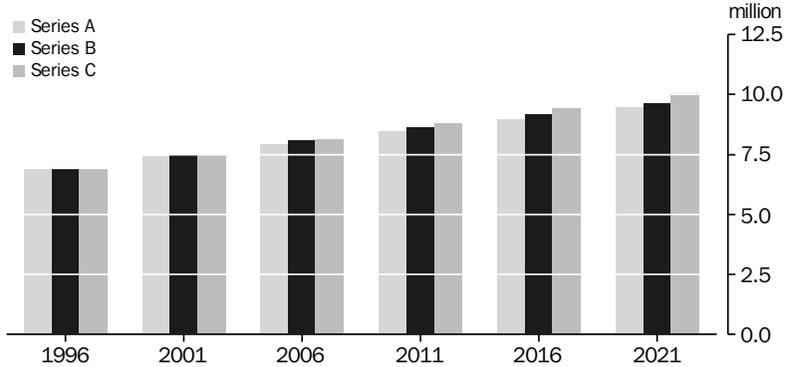
### Household types

The projections show continuing growth in the number of households in Australia in the period 1996–2021. The number of households is projected to increase from 6.9 million in 1996 to between 9.4 and 10.0 million in 2021 (graph 5.49).

This represents a growth in the number of households of between 38% and 46% between 1996 and 2021, compared to a projected 24% increase in the population over the same period.

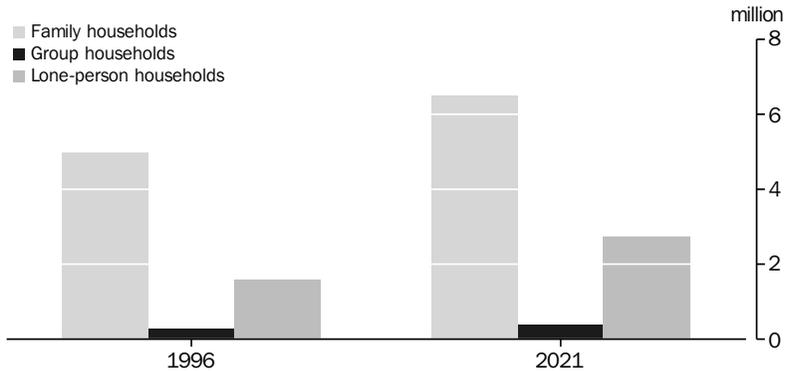
Average household size in Australia is projected to decline from 2.6 persons in 1996 to between 2.2 and 2.3 persons per household in 2021. The projected decrease in average household size reflects the projected rise in the proportion of lone-person households and couples without children. Lone-person households are projected to grow by between 1.7% and 3.1% per year between 1996 and 2021 to comprise between one-quarter and one-third of all household types by 2021. The ageing of the population, increases in divorce and separation, and delaying marriage, are all contributing factors to the growth in lone-person households. While lone-person households are projected to grow the fastest of all household types, family households are projected to remain the predominant household type. Family households are projected to grow by between 0.9% and 1.2% per year over the 1996–2021 period, to comprise between 62% and 71% of all household types in 2021, compared to 73% of all households in 1996 (graph 5.50).

### 5.49 PROJECTED NUMBER OF HOUSEHOLDS



Source: Household and Family Projections, Australia, 1996 to 2021 (3236.0).

### 5.50 PROJECTED NUMBER OF HOUSEHOLDS, By household type: Series B



Source: Household and Family Projections, Australia, 1996 to 2021 (3236.0).

## Family types

The number of couple families with children is projected to either grow slowly or decline slowly, depending on the series employed. This trend is related both to the rapid increase in couple families without children, and the increase in one-parent families, and is driven by ageing, the decline in fertility and increased marital break-up. In Series A, couple families with children are projected to grow from 2.5 million in 1996 to 3.1 million in 2021, while in Series C (full continuation of recent trends), couple families with children are projected to decline to 2.0 million in 2021 (table 5.51).

Of all family types, couple families without children are projected to increase most rapidly over the period 1996–2021. Couple families

without children are projected to grow from 1.7 million in 1996 to between 2.7 and 2.9 million in 2021, with an average annual growth of between 1.7% and 2.2%. In Series B and C, couple families without children are projected to surpass couple families with children as the most common family type by the year 2016.

One-parent families are projected to increase from 742,000 families in 1996 to between 966,000 and 1.2 million in 2021, representing average annual growth of between 1.0% and 2.0% over the period. The proportion of female one-parent families, which was 85% of all one-parent families in 1996, is projected to slightly increase or decrease by 2021.

### 5.51 PROJECTED NUMBER OF FAMILIES, By family type

	1996	2001	2006	2011	2016	2021
	'000	'000	'000	'000	'000	'000
Series A						
Couple families with children	2 483.8	2 660.7	2 798.2	2 902.1	2 985.7	3 054.7
Couple families without children	1 735.1	1 894.2	2 078.2	2 281.1	2 482.5	2 658.8
One-parent families	742.3	797.1	845.7	889.6	929.6	966.2
One-parent families, male parent	114.9	126.3	136.4	145.2	152.8	159.6
One-parent families, female parent	627.4	670.8	709.3	744.4	776.8	806.6
Other families	94.4	98.4	103.7	109.3	114.3	118.2
<i>Total</i>	5 055.6	5 450.4	5 825.8	6 182.1	6 512.1	6 798.0
Series B						
Couple families with children	2 483.8	2 448.1	2 471.4	2 513.5	2 589.8	2 654.0
Couple families without children	1 735.1	1 952.5	2 168.7	2 389.9	2 597.5	2 782.2
One-parent families	742.3	852.5	929.2	987.7	1 028.9	1 066.4
One-parent families, male parent	114.9	129.6	141.3	150.9	158.7	165.6
One-parent families, female parent	627.4	722.9	787.9	836.8	870.2	900.9
Other families	94.4	96.7	101.3	105.6	108.3	109.1
<i>Total</i>	5 055.6	5 349.7	5 670.6	5 996.7	6 324.4	6 611.8
Series C						
Couple families with children	2 483.8	2 448.1	2 366.3	2 252.1	2 122.6	1 988.1
Couple families without children	1 735.1	1 952.5	2 195.8	2 455.0	2 712.3	2 946.5
One-parent families	742.3	852.5	956.2	1 054.1	1 146.3	1 231.4
One-parent families, male parent	114.9	129.6	142.6	153.6	163.0	170.4
One-parent families, female parent	627.4	722.9	813.6	900.4	983.3	1 061.0
Other families	94.4	96.7	102.5	110.1	117.4	123.1
<i>Total</i>	5 055.6	5 349.7	5 620.8	5 871.2	6 098.6	6 289.2

Source: Household and Family Projections, Australia, 1996 to 2021 (3236.0).

## Citizenship

Citizenship is a relatively recent concept for Australia as a nation, having its origins in the *Australian Citizenship Act 1948* (Cwth). Prior to this, Australians were British subjects. Since the inception of the Australian Citizenship Act on Australia Day in 1949, more than three million people born overseas have acquired Australian citizenship. For these people, citizenship is voluntary, expressing a commitment to the laws and principles of Australia, and respect for its land and its people. It confers the opportunity to participate more fully in Australian society, giving the right to vote, to apply for public office, and to hold an Australian passport and therefore leave and re-enter Australia freely.

Australian citizenship law and policy have been amended many times since their inception to reflect a more inclusive approach to the acquisition of Australian citizenship, with recent changes in policy towards creating more opportunities for young adults to acquire citizenship (Department of Immigration and Multicultural and Indigenous Affairs, Australian Citizenship). All migrants who meet set criteria are encouraged to become Australian citizens. Children born in Australia acquire Australian citizenship at birth if at least one parent is an Australian citizen or a permanent resident of Australia, and children born overseas may be registered as having Australian citizenship by descent if at least one of their parents is an Australian citizen.

The 2001 census indicated that almost three-quarters (74%) of people born overseas who had been resident in Australia for two years or more were Australian citizens. There were high proportions of Australian citizens among people born in Greece (97%). However, this citizenship rate is influenced by the age and period of residence of people from Greece. For Australians born in Greece, most (83%) arrived in Australia in 1970 or earlier, and three-quarters are aged 50 years and over. The longer overseas-born people reside in Australia, and consequently the older they get, the more likely it is that they have acquired Australian citizenship.

Standardising gives the rates that would be expected if a given overseas-born population had the same profile of age and period of residence in Australia as the total overseas-born population (table 5.52). Based on standardised rates, people born in the Philippines, Vietnam and China were the most likely to become Australian citizens. Unstable or changing political conditions in these countries may result in a greater desire for Australian citizenship than for people born in other countries.

In contrast, people born in the United Kingdom and New Zealand were less likely to be Australian citizens. This may be because 'the shared language, and strongly similar legal, political, and

industrial arrangements of Australia and the other Anglo-American countries lead these immigrants to feel less need to make a choice of national identity' (Evans 1988).

Despite their comparatively low rate of take-up of citizenship, Australian residents born in New Zealand and the United Kingdom were the two largest groups among the 86,300 people granted Australian citizenship in 2001–02 (table 5.53). This is in keeping with the large numbers of United Kingdom and New Zealand-born people resident in Australia. Former British, Irish and New Zealand citizens have been among the largest sources of Australian citizens since the early 1970s, when legislative changes and visa requirements prompted many Commonwealth citizens living in Australia to apply for Australian citizenship. Other residents who were granted Australian citizenship in 2001–02 were likely to have come from Asian countries, such as Chinese, Filipino, Vietnamese and Indian nationals (together comprising 16% of citizenship grants), and citizens of South Africa (5%), Bosnia and Herzegovina (3%) and Iraq (3%). These figures reflect immigration from these countries in recent years, with China, South Africa, India and the Philippines in the top 10 birthplaces at the 2001 census of overseas-born people who had arrived in Australia since 1996.

#### 5.52 CITIZENSHIP RATES, Overseas-born people resident in Australia for two years or more — 2001

Selected birthplace	Persons	Citizenship rate(a)	Standardised citizenship rate(b)
	'000	%	%
Philippines	90.4	90.4	92.1
Vietnam	141.8	95.3	91.5
China (excl. SARs & Taiwan Prov.)	114.2	80.3	90.1
Greece	108.3	97.1	89.2
Italy	204.6	79.5	65.2
United Kingdom	951.5	65.6	64.3
Germany	100.5	76.5	59.7
Netherlands	78.7	78.3	55.5
New Zealand	281.5	37.7	45.3
<b>All overseas born(c)</b>	<b>3 560.3</b>	<b>74.4</b>	<b>74.4</b>

(a) People for whom citizenship was not stated were excluded prior to the calculation of percentages. (b) The rates of citizenship that would be expected if a given overseas-born population had the same age and period of residence profile as the total overseas-born population. (c) Excludes people whose birthplace was not stated, inadequately described, n.e.c. or at sea.

Source: ABS data available on request, 2001 Census of Population and Housing.

**5.53 FORMER NATIONALITY, People granted Australian citizenship — 2001–02**

Country of former nationality or citizenship	no.	%
New Zealand	17 334	20.1
United Kingdom	16 411	19.0
China(a)	6 416	7.4
South Africa	3 922	4.5
Philippines	2 849	3.3
India	2 510	2.9
Bosnia-Herzegovina	2 194	2.5
Iraq	2 182	2.5
Vietnam	2 090	2.4
Fiji	1 567	1.8
Malaysia	1 504	1.7
Yugoslavia, Federal Republic of	1 394	1.6
Sri Lanka	1 362	1.6
United States of America(b)	1 318	1.5
Taiwan	979	1.1
Afghanistan	978	1.1
Italy	938	1.1
Iran	864	1.0
Ireland	852	1.0
Korea, Republic of (South)	821	1.0
Malta	802	0.9
Indonesia	765	0.9
Pakistan	717	0.8
Canada	713	0.8
Lebanon	698	0.8
Turkey	691	0.8
Croatia	548	0.6
Sudan	517	0.6
Somalia	505	0.6
Thailand	491	0.6
Germany	442	0.5
Sweden	434	0.5
Singapore	392	0.5
Russian Federation	391	0.5
Portugal	377	0.4
Former Yugoslav Republic of Macedonia (FYROM)	357	0.4
Chile	354	0.4
Cambodia	343	0.4
Poland	328	0.4
Bangladesh	327	0.4
France	319	0.4
Greece	300	0.3
Netherlands	271	0.3
Egypt	271	0.3
Romania	266	0.3
Ukraine	251	0.3
Stateless	884	1.0
Other/not stated	5 050	5.9
<b>Total</b>	<b>86 289</b>	<b>100.0</b>

(a) Including citizens of Hong Kong and Macau SARs but excluding those of Taiwan. (b) Includes American Samoa.

Source: Department of Immigration and Multicultural and Indigenous Affairs, 'Annual Report, 2001–02'.

## Languages

Even though English is Australia's national language, due to cultural diversity in the population over 200 languages are spoken in the community. Languages other than English are not only spoken by migrants who have settled in Australia from all over the world; more than 60 different languages are spoken by Aboriginal and Torres Strait Islander Australians. The 2001 census indicated that 2.8 million people (16% of the population) spoke a language other than English at home (table 5.54), which represents an increase of 213,100 people or 8% since 1996.

Over 50,000 people spoke an Australian Indigenous language (including Australian Creoles), which equates to 12% of all Indigenous Australians and less than 1% of the total Australian population. Two-thirds of Indigenous people in the Northern Territory and 17% of Indigenous people in South Australia spoke an Indigenous language at home. The three Indigenous languages with the most speakers were Kriol (an Australian Creole) and two Central Australian languages: Pitjantjatjara and Warlpiri.

In 2001 the five most commonly spoken languages other than English were Italian, Greek, Cantonese, Arabic (including Lebanese) and Vietnamese, with speakers of these languages together comprising 7% of the total population. The popularity of these languages is associated with immigration over the last 50 years from countries where these languages are spoken. While the number of settler arrivals from countries such as Italy and Greece was high at the end of World War II, large numbers of settler arrivals from Lebanon and Vietnam arrived during the 1970s and 1980s, and from China in the 1990s (*DIMA Immigration: Federation to Century's End, 1901–2000*).

Greek, Arabic and Italian speakers had the largest proportions of Australian-born speakers, reflecting the fact that these languages were mainly brought to Australia 20 or more years ago and have been maintained among their children. Languages spoken by migrants arriving in Australia more recently, such as Mandarin and Filipino, had a smaller proportion of Australian-born speakers.

English proficiency among people who spoke a language other than English at home varied with the age of the speaker and according to whether he or she was born in Australia (table 5.55). Around 88% of all people aged under 25 years who spoke a language other than English at home spoke English well or very well, compared with 60% of those aged 65 years and over.

People born in Australia who spoke a language other than English at home were generally more likely to speak English well or very well than the total population speaking other than English at home. Overall, 91% of those born in Australia spoke English well or very well, compared with 82% of the total population speaking other than English at home.

#### 5.54 PEOPLE WHO SPOKE A LANGUAGE OTHER THAN ENGLISH AT HOME — 2001

	Males	Females	Persons	Proportion born in Australia(a)	Persons as a proportion of population
	'000	'000	'000	%	%
Italian	175.4	178.2	353.6	42.7	2.0
Greek	131.8	132.0	263.7	50.9	1.5
Cantonese	108.2	117.1	225.3	20.0	1.3
Arabic (incl. Lebanese)	108.7	100.6	209.4	43.2	1.2
Vietnamese	86.1	88.1	174.2	25.5	1.0
Mandarin	67.0	72.2	139.3	12.2	0.8
Spanish	45.2	48.4	93.6	22.7	0.5
Tagalog (Filipino)	30.8	48.1	78.9	8.8	0.4
German	35.7	40.8	76.4	19.4	0.4
Macedonian	36.6	35.4	72.0	38.6	0.4
Croatian	35.2	34.6	69.9	34.0	0.4
Polish	27.1	31.9	59.1	20.0	0.3
Australian Indigenous languages	25.1	25.9	51.0	99.6	0.3
Turkish	25.7	25.0	50.7	39.7	0.3
Serbian	24.8	24.4	49.2	22.1	0.3
Hindi	24.4	23.4	47.8	13.5	0.3
Maltese	20.5	20.9	41.4	28.7	0.2
Netherlandic	18.3	21.9	40.2	14.6	0.2
All other languages(b)	352.4	368.5	720.9	19.0	4.0
<b>Total</b>	<b>1 378.9</b>	<b>1 437.6</b>	<b>2 816.5</b>	<b>29.5</b>	<b>15.8</b>

(a) Persons whose birthplace was not stated, inadequately described, n.e.c. or at sea were excluded prior to the calculation of percentages. (b) Excludes languages that were not stated, inadequately described, and non-verbal so described.

Source: ABS data available on request, 2001 Census of Population and Housing.

**5.55 PROFICIENCY IN ENGLISH, People who spoke a language other than English at home — 2001**

	Units	Age group (years)				Total
		0-24	25-44	45-64	65 and over	
<b>Total population speaking other than English at home</b>						
Speaks English well or very well	%	88.1	87.2	77.1	59.9	81.6
Does not speak English well	%	8.4	11.5	20.1	29.5	14.9
Does not speak English at all	%	3.5	1.3	2.8	10.7	3.5
Total	%	100.0	100.0	100.0	100.0	100.0
Total(a)	no.	860 401	930 520	671 549	354 019	2 816 489
<b>Australian-born population speaking other than English at home</b>						
Speaks English well or very well	%	86.7	97.4	92.9	81.3	90.5
Does not speak English well	%	8.6	2.3	6.1	14.2	6.5
Does not speak English at all	%	4.6	0.3	1.0	4.5	3.0
Total	%	100.0	100.0	100.0	100.0	100.0
Total(b)	no.	493 439	259 214	46 531	9 807	808 991

(a) Includes 45,000 people who did not state how well they spoke English. (b) Includes 20,000 people who did not state how well they spoke English.

Source: ABS data available on request, 2001 Census of Population and Housing.

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# Aboriginal and Torres Strait Islander population

The size of the Indigenous population of Australia prior to European settlement is uncertain. From the time of Federation (1901) until the 1967 Referendum,<sup>1</sup> all Australian censuses counted Aboriginal and Torres Strait Islander peoples. However, these counts of Indigenous persons were excluded from official population figures. They were first included in official population statistics in 1971.

Over the past 35 years, large increases in Indigenous census counts have occurred on several occasions. The excess of births over deaths accounted for a proportion of these increases but overseas migration was insignificant for the Indigenous population.

Between the 1996 and 2001 censuses, the census counts of Indigenous people increased by 16% (57,000), a much faster increase than for the total Australian population, which increased by 6% (1,016,000) over the same period. The components of the Indigenous census count increase between 1996 and 2001 are estimated to be 12% due to births and deaths, and a further 4% due to other factors, including changes in census procedures and an increasing propensity for persons to identify or be identified as Indigenous in the census. Comparable figures for the 1991–96 increase were: 33% total increase, 14% due to births and deaths, and a further 19% due to other factors (table S5.1).

## S5.1 INDIGENOUS CENSUS COUNTS(a)

	1966(b)	1971	1976	1981	1986(c)	1991(c)	1996(c)	2001(c)
NUMBER (no.)								
New South Wales	14 219	23 873	40 450	35 367	58 999	69 999	101 485	119 865
Victoria	1 790	6 371	14 760	6 057	12 600	16 729	21 474	25 078
Queensland	19 003	31 922	41 345	44 698	61 250	70 102	95 518	112 772
South Australia	5 505	7 299	10 714	9 825	14 285	16 223	20 444	23 425
Western Australia	18 439	22 181	26 126	31 351	37 786	41 769	50 793	58 496
Tasmania	36	671	2 942	2 688	6 716	8 882	13 873	15 773
Northern Territory	21 119	23 381	23 751	29 088	34 738	39 893	46 277	50 785
Australian Capital Territory(d)	96	255	827	823	1 059	1 592	2 899	3 576
Australia(d)	80 207	115 953	160 915	159 897	227 593	265 371	352 970	410 003
PROPORTION OF TOTAL INDIGENOUS COUNT (%)								
New South Wales	17.7	20.6	25.1	22.1	25.9	26.4	28.8	29.2
Victoria	2.2	5.5	9.2	3.8	5.5	6.3	6.1	6.1
Queensland	23.7	27.5	25.7	28.0	26.9	26.4	27.1	27.5
South Australia	6.9	6.3	6.7	6.1	6.3	6.1	5.8	5.7
Western Australia	23.0	19.1	16.2	19.6	16.6	15.7	14.4	14.3
Tasmania	—	0.6	1.8	1.7	3.0	3.3	3.9	3.8
Northern Territory	26.3	20.2	14.8	18.2	15.3	15.0	13.1	12.4
Australian Capital Territory(d)	0.1	0.2	0.5	0.5	0.5	0.6	0.8	0.9
Australia(d)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Place of enumeration data. (b) Excludes Torres Strait Islanders. (c) Excludes overseas visitors. (d) 1986 to 2001 figures include Other Territories in the Australian total. Prior to 1986 Jervis Bay Territory was included with the ACT.

Source: ABS 2002c; ABS data available on request, *Census of Population and Housing; Commonwealth Bureau of Census and Statistics 1969; Choi & Gray 1985.*

Some clearer patterns emerge from data on each state and territory's share of the total Indigenous census count. The last 35 years have seen a major change in the distribution of the Indigenous population. Substantial gains were recorded in New South Wales (18% of all Indigenous persons in Australia in 1966, 29% in 2001) and to a lesser extent Victoria (2% in 1966, 6% in 2001). The Northern Territory had the largest share of Australia's Indigenous persons in 1966 (26%) but by 2001 this proportion had dropped to 12%. The proportion of all Indigenous people who were counted in Western Australia also declined from 23% in 1966 to 14% in 2001 (table S5.2).

Since 1986, experimental estimates of Australia's Indigenous population have been produced by the ABS (table S5.3). These estimates are calculated for census years by taking into account 'not stated' Indigenous status, Indigenous undercount and other demographic adjustments.

The latest available estimated resident Indigenous population of Australia is 458,500 persons at 30 June 2001 (2.4% of the total Australian population). People of only Aboriginal origin comprised about 89% of the total Indigenous population, people of only Torres Strait Islander origin comprised 6%, and those of both Aboriginal and Torres Strait Islander origin comprised 4%.

Changes in the distribution of Indigenous population estimates across the states and territories, and changes in the proportion of each state and territory's resident population which was Indigenous, have been very similar to the changes in census counts over the period. For an explanation of estimated resident population, see the introduction to this chapter.

#### S5.2 CHANGES IN INDIGENOUS CENSUS COUNTS(a)

	1966(b)– 71	1971– 76	1976– 81	1981– 86(c)	1986(c)– 91(c)	1991(c)– 96(c)	1996(c)– 2001(c)
	%	%	%	%	%	%	%
New South Wales	67.9	69.4	-12.6	66.8	18.6	45.0	18.1
Victoria	255.9	131.7	-59.0	108.0	32.8	28.4	16.8
Queensland	68.0	29.5	8.1	37.0	14.5	36.3	18.1
South Australia	32.6	46.8	-8.3	45.4	13.6	26.0	14.6
Western Australia	20.3	17.8	20.0	20.5	10.5	21.6	15.2
Tasmania	(d)1 763.9	338.5	-8.6	149.9	32.3	56.2	13.7
Northern Territory	10.7	1.6	22.5	19.4	14.8	16.0	9.7
Australian Capital Territory(e)	165.6	224.3	-0.5	28.7	50.3	82.1	23.4
Australia(e)	44.6	38.8	-0.6	42.3	16.6	33.0	16.2

(a) Place of enumeration data. (b) Excludes Torres Strait Islanders. (c) Excludes overseas visitors. (d) The number of Indigenous Tasmanians increased from 36 counted in the 1966 census to 671 counted in the 1971 census. (e) 1986 to 2001 figures include Other Territories in the Australian total. Prior to 1986 Jervis Bay Territory is included with the ACT.

Source: ABS 2002c; ABS data available on request, *Census of Population and Housing; Commonwealth Bureau of Census and Statistics 1969; Choi & Gray 1985.*

### S5.3 EXPERIMENTAL(a) ESTIMATES AND PROJECTIONS OF THE INDIGENOUS POPULATION — 30 June

	1986(b)		1991(b)		1996(c)		2001(c)		2006(d)	
	no.	%	no.	%	no.	%	no.	%	no.	%
New South Wales	66 041	26.3	97 784	28.3	109 925	28.5	134 888	29.4	132 716	28.3
Victoria	15 766	6.3	20 259	5.9	22 598	5.9	27 846	6.1	26 541	5.7
Queensland	65 933	26.3	93 191	27.0	104 817	27.2	125 910	27.5	133 288	28.4
South Australia	15 324	6.1	19 809	5.7	22 051	5.7	25 544	5.6	26 633	5.7
Western Australia	39 001	15.6	50 891	14.7	56 205	14.6	65 931	14.4	66 976	14.3
Tasmania	8 244	3.3	13 783	4.0	15 322	4.0	17 384	3.8	18 023	3.8
Northern Territory	38 885	15.5	46 874	13.6	51 876	13.4	56 875	12.4	60 610	12.9
Australian Capital Territory	1 384	0.6	2 614	0.8	3 058	0.8	3 909	0.9	4 149	0.9
Australia(e)	250 738	100.0	345 381	100.0	386 049	100.0	458 520	100.0	469 135	100.0

(a) The estimated Indigenous population is experimental in that the standard approach to population estimation is not possible mainly because reliable data on births, deaths and migration are not generally available. (b) Estimated population, rebased on following census. (c) Estimated population, based on census of that year. (d) Projected population based on 1996 census, low series. (e) Includes Other Territories.

Source: ABS 1994a; ABS 1998a; ABS 1998b; ABS 2003.

The Indigenous population has a much younger age structure than that of the non-Indigenous Australian population (graph S5.4). In 2001, the proportion of Indigenous persons under 15 years of age was 39% compared with 20% of non-Indigenous persons. Persons aged 65 years and over comprised 3% of the Indigenous population and 13% of the non-Indigenous population. At 30 June 2001, Australia's Indigenous population had a median age of 20 years, 16 years younger than the median age for the non-Indigenous population (36 years). The median age was approximately 20 years for Indigenous males and 21 years for Indigenous females. The median age of the Indigenous population ranged from 22 years in the Northern Territory to 20 years in Tasmania.

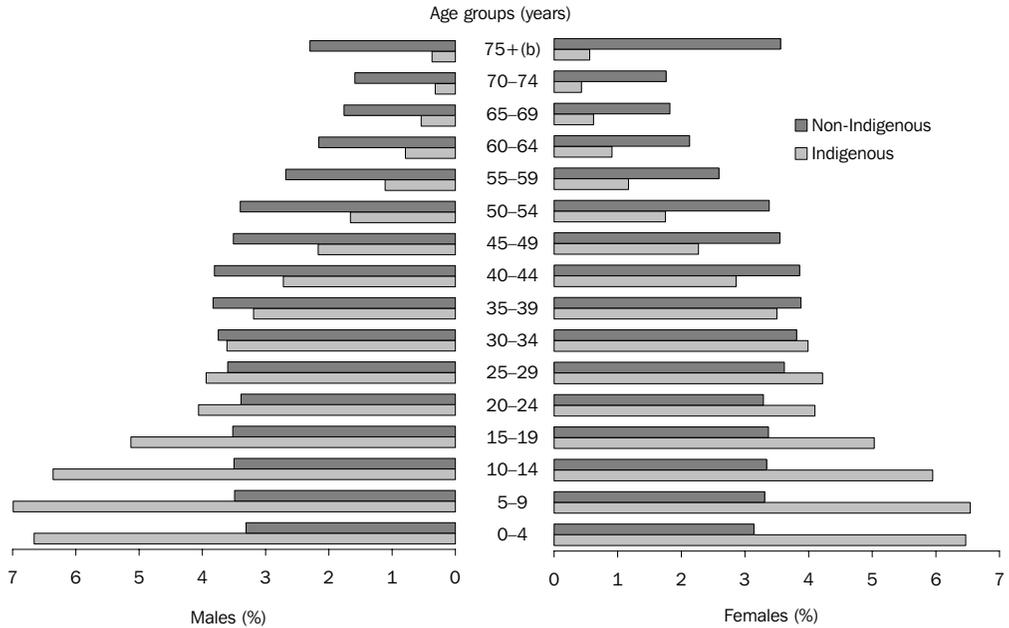
The age structure of the Indigenous population is largely a product of high fertility and high mortality. In the early-1960s, the fertility of Indigenous women (5.8 babies per woman) was nearly twice the rate for all Australian women. However, changes in fertility for Indigenous women over this period should be interpreted with caution as there has been a marked increase in reporting the Indigenous status of both mothers and babies at registration since the early-1960s. There has also been a large increase in the propensity of mothers to identify as Indigenous, and for babies to be identified as Indigenous.

Since the early-1960s, fertility levels of both Indigenous and all women have declined substantially, with the largest decreases

recorded during the 1970s. While the fertility of all Australian women began a decline in the 1960s which continues today, the fertility levels of Indigenous women remained relatively stable during the 1960s although this preceded a sharp decline during the 1970s. It is estimated that in the 15 years to 1996, the fertility of Indigenous women declined to a low of 2.0 babies per woman in 1996, before increasing slightly. In 2001, Indigenous fertility was estimated at 2.1 babies per woman, compared to 1.7 babies for all women (ABS 2002a). In 2000, the total fertility rate of Australian Indigenous mothers (2.2) was marginally above that of the American Indians (2.1), but lower than that of New Zealand Maori women (2.5).

A variety of mortality measures indicate higher mortality for the Indigenous population than for the total population. These measures include death rates, life expectancy at birth and infant mortality. At the national level, life expectancy at birth for the period 1999–2001 was estimated to be about 56 years for Indigenous males and 63 years for Indigenous females (including an adjustment for the estimated under-coverage of Indigenous deaths). This compares to life expectancy at birth of 77 years for all males, and 82 years for all females — a difference of 21 years for males and 20 years for females (ABS 2002b).

**S5.4 AGE DISTRIBUTION OF INDIGENOUS AND NON-INDIGENOUS POPULATION(a) — 30 June 2001**



(a) Estimated resident population. (b) The 75+ age group includes all ages 75 and over and therefore is not strictly comparable with five-year age groups in the rest of this graph.

Source: ABS 2003.

A comparatively high proportion of Indigenous persons live in regional and remote areas. For more information see the article *How Many People Live in Remote Areas?* in this chapter. The ABS has commenced publishing population estimates on the basis of the Remoteness Structure (ABS 2001), which distinguishes areas in Australia according to remoteness. While the largest proportion of

Indigenous people lived in Major City areas (30%) in 2001, this was less than half the proportion of all Australian residents living in these areas (66%). Higher proportions of Indigenous people lived in Outer Regional areas (23%) and Remote (9%) and Very Remote (18%) areas than all Australians (10%, 2% and 1% respectively).

**Endnote**

1. See article 'The 1967 Aborigines Referendum', *Chapter 2, Government*.

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# 6

## LABOUR

The information contained in this chapter presents a picture of the labour market in Australia. Unlike other statistics that have a particular economic or social focus, labour statistics cut across both dimensions, and in so doing they provide useful insights into economic and community life in Australia.

This chapter provides a broad overview of the Australian labour market. It 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 2002–03; examines developments in the Australian labour market over the medium- and long-term; and presents more detailed analysis of a number of issues impacting on the Australian labour market.

The chapter contains three articles, namely *Labour mobility*, *Usual hours* and *Underemployed workers*. It concludes with an article *Labour force status of Aboriginal and Torres Strait Islander peoples*.

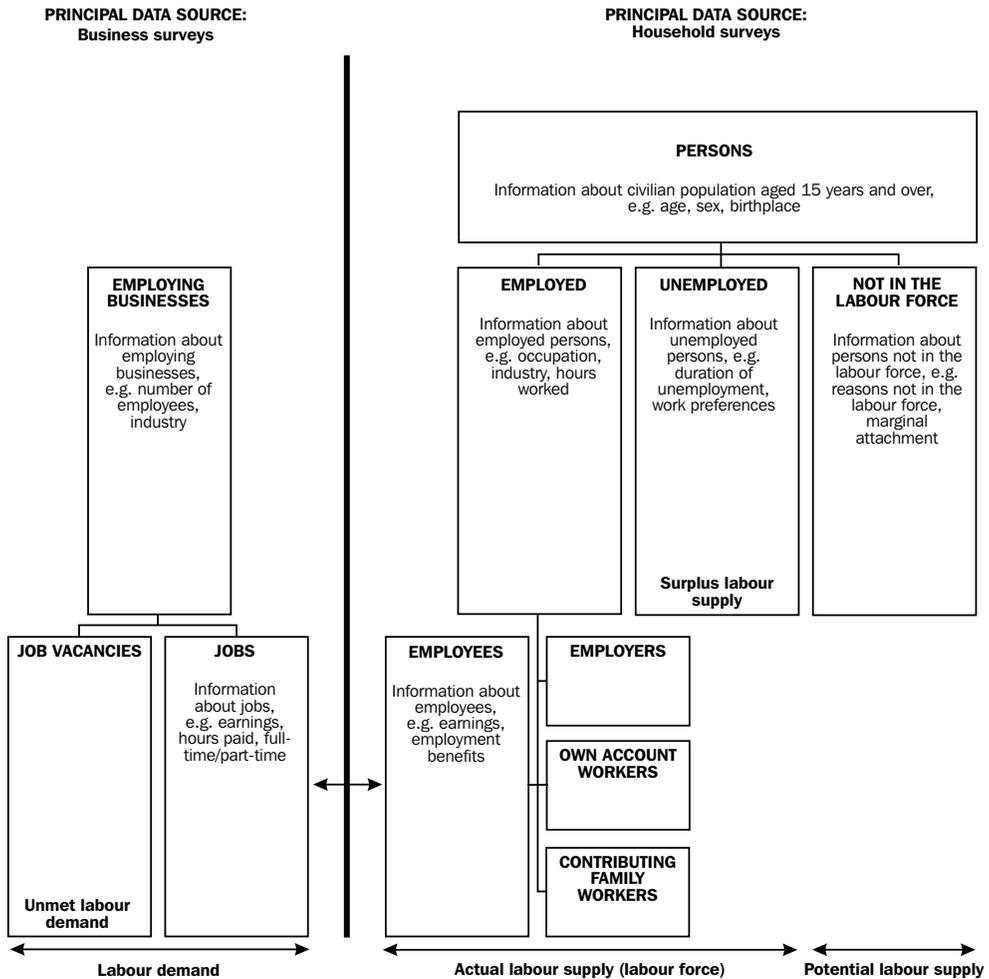
# Labour market statistics

Most labour market statistics focus on some aspect of labour demand or labour supply. In Australia, business surveys are the primary source of data on labour demand. The types of data collected through business surveys include labour costs, earnings and job vacancies. Population censuses and household surveys constitute the primary sources of information about the size and characteristics of labour supply. Information obtained through these types of collections includes data on current and previous labour force experience, as well as demographic data such as age, sex, family status and country of birth.

Diagram 6.1 illustrates the range of labour statistics available, from Australian Bureau of Statistics (ABS) household and business surveys, and broadly how the statistics 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 Organisation and the United Nations Statistical Office. Australian labour statistics comply in almost every respect with these international standards.

## 6.1 THE AUSTRALIAN LABOUR STATISTICS FRAMEWORK



Source: *Labour Statistics: Concepts, Sources and Methods, 2001 (6102.0)*.

## Labour force

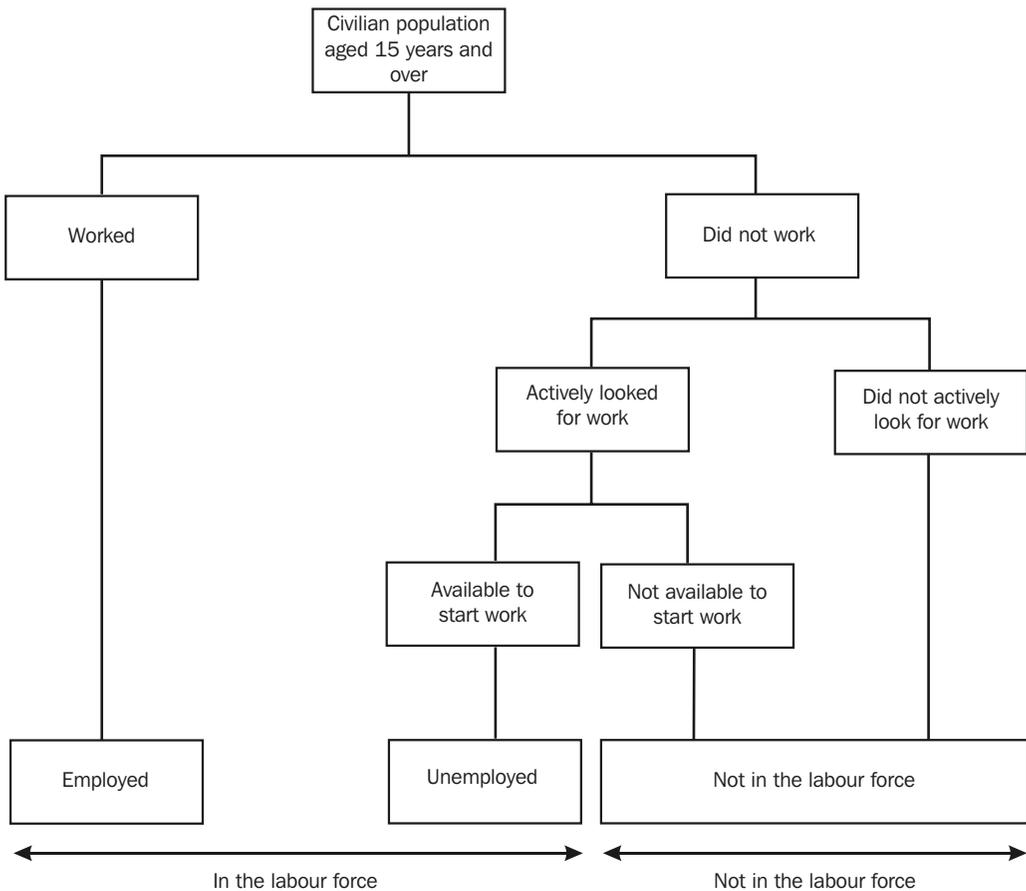
The labour force represents the key official measure of the total supply of labour available to the labour market during a given short reference period. It is equivalent to the supply of labour available for the production of economic goods and services. Therefore, persons in the labour force are also referred to as the 'currently economically active population'.

The Australian labour force framework classifies persons 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 persons contributing

to, or willing to contribute to, the supply of labour. The third category (not in the labour force) represents the currently inactive population. This framework is illustrated in diagram 6.2. Further details about the Australian labour force framework, and the specific criteria for classifying persons to these three basic categories, are available in *Labour Statistics: Concepts, Sources and Methods, 2001* (6102.0).

For the purpose of compiling Australian labour force statistics, the population is restricted to persons in the civilian population aged 15 years and over. This practice is consistent with international guidelines for the collection of labour statistics.

**6.2 THE AUSTRALIAN LABOUR FORCE FRAMEWORK(a)**



(a) The rules for determining whether a person is classified as employed, unemployed or not in the labour force are detailed in 'Labour Statistics: Concepts, Sources and Methods, 2001' (6102.0), paragraph 2.12 to 2.23.

Source: *Labour Statistics: Concepts, Sources and Methods, 2001* (6102.0).

## 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 adult population. Between June 2002 and June 2003 the labour force grew by 1.6%. During the same period the civilian population aged 15 and over grew 1.6%. The similarity in these rates indicates there was little change 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 persons in the labour force by the total number of persons in the civilian population aged 15 years and over. Analysis of participation rates, particularly in terms of age, sex and family status, provides the basis for monitoring changes in the size and composition of the labour supply.

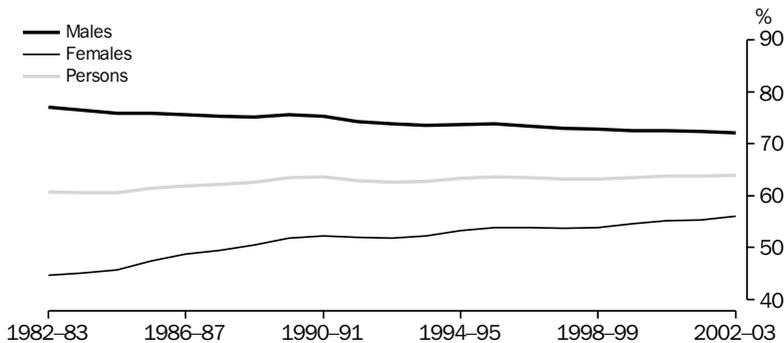
During the last two decades the overall labour force participation rate has increased slowly, rising from a level of 61% in 1982–83 to 64% in 2002–03. The main force behind the long-term rise in the labour force participation rate has been an increase in the female participation rate. The female participation rate increased from 45% in 1982–83 to 56% in 2002–03. In contrast, the male participation rate fell from 77% to 72% over the

same period. Graph 6.3 shows male and female participation rates between 1982–83 and 2002–03 and illustrates the convergence of male and female participation rates over time.

Underlying these contrasting trends in male and female participation rates are varying movements in the age-specific participation rates. As seen in table 6.4, male and female participation rates are similar in the 15–19 year age group. The low participation rate for persons in this age group reflects the fact that many young people are in full-time education, and many of these students are not in the labour force. Participation rates for males and females then rise as young people move from education and training to employment. For males, participation rates peak in the 25–34 and 35–44 age groups. Female participation rates peak in the 20–24 year age group.

Examining changes in age-specific participation rates for women between 1982–83 and 2002–03, more women are remaining in the labour force during the child-bearing years. In 1982–83, the female participation rate fell from 71.0% for the 20–24 year age group to 54.0% for the 25–34 year age group, a fall of 17.0 percentage points. In 2002–03, the participation rate fell from 77.5% for the 20–24 year age group to 70.8% for the 25–34 year age group (a fall of 6.7 percentage points), then rose slightly through to the 45–54 year age group.

**6.3 LABOUR FORCE PARTICIPATION RATES(a)**



(a) Annual averages.

Source: ABS data available on request, Labour Force Survey.

Examining changes in age-specific participation rates for men between 1982–83 and 2002–03, for all age groups up to and including the 55–64 year age group, participation rates declined between the two periods. In contrast to this declining male participation rate, the participation rate for men 65 years and over increased slightly between 1982–83 and 2002–03.

period the total number of persons employed grew by 11.0% to 9.5 million. This comprised an increase of 6.8% in the level of full-time employment and an increase of 23.2% in the level of part-time employment. Part-time employed persons now account for 28.5% of all employed persons. Women dominate the part-time workforce, accounting for 71.2% of part-time workers.

Table 6.5 shows changes in labour force status (i.e. employed, unemployed, not in the labour force) between 1997–98 and 2002–03. During this

#### 6.4 LABOUR FORCE PARTICIPATION RATES(a), By age group

	Males			Females		
	1982–83 %	2002–03 %	Change %	1982–83 %	2002–03 %	Change %
15–19	63.6	58.4	-8.1	59.2	60.7	2.5
20–24	91.2	85.1	-6.6	71.0	77.5	9.1
25–34	95.6	91.2	-4.6	54.0	70.8	31.3
35–44	95.0	90.6	-4.7	58.4	72.6	24.2
45–54	90.6	88.1	-2.7	48.2	73.8	53.0
55–64	64.4	63.1	-2.0	20.3	40.2	98.2
65 and over	9.7	10.0	4.0	2.3	3.2	38.7
<b>All age groups</b>	<b>77.1</b>	<b>72.0</b>	<b>-6.6</b>	<b>44.6</b>	<b>56.0</b>	<b>25.6</b>

(a) Annual averages.

Source: ABS data available on request, Labour Force Survey.

#### 6.5 LABOUR FORCE STATUS(a), Civilian population

	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	Total '000				
<b>MALES</b>										
1997–98	4 243.5	584.8	4 828.3	380.7	52.9	433.6	5 262.0	7 214.3	8.2	72.9
1998–99	4 301.6	622.1	4 923.6	352.3	52.1	404.4	5 328.0	7 323.7	7.6	72.7
1999–2000	4 397.0	636.2	5 033.2	307.6	56.1	363.8	5 397.0	7 441.1	6.7	72.5
2000–01	4 421.7	684.3	5 106.0	308.7	57.0	365.8	5 471.8	7 550.2	6.7	72.5
2001–02	4 419.1	741.3	5 160.4	318.1	62.9	381.1	5 541.5	7 656.5	6.9	72.4
2002–03	4 477.1	775.7	5 252.7	285.6	61.5	347.2	5 599.9	7 775.1	6.2	72.0
<b>FEMALES</b>										
1997–98	2 085.3	1 604.9	3 690.3	212.8	91.3	304.1	3 994.4	7 450.5	7.6	53.6
1998–99	2 130.5	1 649.2	3 779.7	192.5	94.8	287.3	4 067.0	7 555.3	7.1	53.8
1999–2000	2 193.6	1 713.0	3 906.7	177.0	93.7	270.7	4 177.4	7 665.8	6.5	54.5
2000–01	2 269.4	1 754.4	4 023.9	163.7	95.9	259.7	4 283.5	7 767.2	6.0	55.1
2001–02	2 232.4	1 839.2	4 071.6	180.9	94.8	275.7	4 347.3	7 867.2	6.3	55.3
2002–03	2 284.0	1 921.8	4 205.8	175.4	93.7	269.1	4 474.9	7 987.1	6.0	56.0
<b>PERSONS</b>										
1997–98	6 328.8	2 189.8	8 518.6	593.5	144.3	737.8	9 256.4	14 664.8	8.0	63.1
1998–99	6 432.1	2 271.3	8 703.4	544.7	146.9	691.7	9 395.0	14 879.0	7.4	63.1
1999–2000	6 590.7	2 349.2	8 939.9	484.6	149.8	634.5	9 574.3	15 106.9	6.6	63.4
2000–01	6 691.2	2 438.8	9 129.9	472.5	153.0	625.5	9 755.4	15 317.4	6.4	63.7
2001–02	6 651.5	2 580.5	9 232.0	499.1	157.7	656.8	9 888.8	15 523.7	6.6	63.7
2002–03	6 761.0	2 697.5	9 458.5	461.1	155.2	616.3	10 074.8	15 762.2	6.1	63.9

(a) Annual averages.

Source: ABS data available on request, Labour Force Survey.

The unemployment rate declined gradually from 8.0% in 1997–98 to 6.4% in 2000–01. The unemployment rate then rose slightly to 6.6% in 2001–02, before falling to 6.1% in 2002–03. Over this six-year period, the unemployment rate for women has remained consistently below that for men.

Within Australia, labour force participation, employment and unemployment vary across states and territories and across capital cities and regional areas. Table 6.6 shows the labour force status by state and part of state for 2002–03.

The Northern Territory and Australian Capital Territory had higher participation rates (both 73%) and lower unemployment rates (6% and 4%

respectively) than any of the states. Tasmania had the lowest participation rate (58%) and highest unemployment rate (9%).

There was no consistent pattern in differences between participation rates and unemployment rates in capital cities and the balance of states. In New South Wales, Queensland and Tasmania, the balance of state had a higher unemployment rate and lower participation rate than the capital city. However, in South Australian and Western Australia, the capital city had a higher unemployment rate.

### 6.6 LABOUR FORCE STATUS(a), By state and territory — 2002–03

	Employed		Unemployed '000	Labour force '000	Civilian population aged 15 and over '000	Unemploy- ment rate %	Participation rate %
	Full-time '000	Total '000					
Capital city/balance of state							
Sydney	1 576.0	2 099.8	114.5	2 214.3	3 398.6	5.2	65.2
Balance of New South Wales	708.0	1 039.4	82.7	1 122.1	1 899.5	7.4	59.1
<i>New South Wales</i>	2 284.0	3 139.2	197.2	3 336.4	5 298.0	5.9	63.0
Melbourne	1 280.2	1 776.5	107.2	1 883.7	2 924.5	5.7	64.4
Balance of Victoria	421.4	610.1	36.6	646.7	1 044.1	5.7	61.9
<i>Victoria</i>	1 701.6	2 386.6	143.8	2 530.4	3 968.6	5.7	63.8
Brisbane	603.9	845.0	60.3	905.2	1 362.9	6.7	66.4
Balance of Queensland	660.5	940.1	74.6	1 014.7	1 589.3	7.3	63.8
<i>Queensland</i>	1 264.4	1 785.1	134.8	1 919.9	2 952.3	7.0	65.0
Adelaide	365.6	523.4	35.6	559.1	911.9	6.4	61.3
Balance of South Australia	125.7	181.3	11.1	192.4	314.3	5.8	61.2
<i>South Australia</i>	491.4	704.7	46.7	751.4	1 226.2	6.2	61.3
Perth	497.6	712.1	45.8	757.9	1 154.2	6.0	65.7
Balance of Western Australia	180.1	258.8	15.4	274.3	395.9	5.6	69.3
<i>Western Australia</i>	677.7	970.9	61.3	1 032.2	1 550.2	5.9	66.6
Hobart	58.0	84.7	7.3	92.0	156.8	7.9	58.6
Balance of Tasmania	80.9	116.0	11.6	127.6	218.9	9.1	58.3
<i>Tasmania</i>	138.9	200.7	18.9	219.6	375.7	8.6	58.4
<i>Northern Territory</i>	74.3	98.2	6.0	104.1	142.2	5.7	73.2
<i>Australian Capital Territory</i>	128.8	173.2	7.6	180.8	249.0	4.2	72.6
<b>Australia</b>	<b>6 761.0</b>	<b>9 458.5</b>	<b>616.3</b>	<b>10 074.8</b>	<b>15 762.2</b>	<b>6.1</b>	<b>63.9</b>

(a) Annual average.

Source: ABS data available on request, Labour Force Survey.

In 2002–03 there were 10.1 million people in the Australian labour force, of whom 24.6% were born overseas (table 6.7). The labour force participation rate for persons born overseas was 57.7% compared with 67.7% for persons born in Australia. Migrants from main English speaking countries participated in the labour force at a higher rate than those from other than main English speaking countries. The unemployment rate for migrants from main English speaking countries (5.0%) was lower than that for both persons born in Australia (6.0%) and migrants from other than main English speaking backgrounds (7.5%).

Table 6.8 provides an overview of labour force status of persons at June 2003, according to the family relationship within the household. For couple families with dependants present, 83% of husbands (or male partners) were employed full-time, compared with 26% of wives (or female partners) (with a further 37% of wives employed part-time). Just over half of male lone parents with dependants (54%) were employed full-time compared with 22% of female lone parents with dependants. The unemployment rates for husbands and for wives were lower than for all other groups.

## Employed persons

People are considered to be employed if they were in paid work, or helping in a family business, for one hour or more in the reference week. Those people who were absent from work in the reference week are also considered to be employed, unless they had been on unpaid leave for more than four weeks. This section contains information about people who are employed, including whether they worked full-time or part-time, the industry and occupation they worked in, and the characteristics of their employment arrangements.

Relating employment levels to population levels enables evaluation of the strength of job growth compared to population growth. The measure relating these two levels is the employment/population ratio. Its usefulness lies in the fact that, while movements in the employment level reflect net changes in the levels of persons holding jobs, movements in the ratio reflect net changes in the number of persons employed relative to changes in the size of the population.

The overall employment/population ratio rose from 58.1% in 1997–98 to 60.0% in 2002–03; the latter represents a slight increase from 59.5% recorded in 2001–02 (table 6.9). In 2002–03, the employment/population ratio for males was considerably higher than for females (67.6% compared to 52.7%), which reflects the higher participation of males in the labour force.

### 6.7 LABOUR FORCE STATUS(a), By birthplace(b) — 2002–03

	Employed			Labour force '000	Not in labour force '000	Unemployment rate %	Participation rate %
	Full-time workers '000	Total '000	Unemployed '000				
Born in Australia	5 032.9	7 142.7	455.4	7 598.0	3 631.2	6.0	67.7
Born overseas	1 728.1	2 315.9	160.9	2 476.8	1 814.5	6.5	57.7
Main English speaking countries	723.7	965.9	50.9	1 016.5	577.0	5.0	63.8
Other than main English speaking countries	1 004.4	1 350.0	110.2	1 460.3	1 237.5	7.5	54.1
<b>Total</b>	<b>6 761.0</b>	<b>9 458.5</b>	<b>616.3</b>	<b>10 074.8</b>	<b>5 445.7</b>	<b>6.1</b>	<b>64.9</b>

(a) Annual average. (b) Excludes persons in institutions.

Source: ABS data available on request, Labour Force Survey.

## 6.8 LABOUR FORCE STATUS, Relationship in household(a) — June 2003

	Employed			Labour force '000	Not in labour force '000	Civilian population aged 15 and over '000	Unemploy- ment rate %	Participation rate %
	Full-time '000	Total '000	Unem- ployed '000					
<b>MALES</b>								
Family member	3 697.6	4 329.7	244.1	4 573.8	1 606.4	6 180.1	5.3	74.0
Husband or partner	3 034.9	3 362.2	107.6	3 469.7	1 129.0	4 598.8	3.1	75.4
With dependants	1 730.5	1 860.1	63.6	1 923.6	153.1	2 076.8	3.3	92.6
Without dependants	1 304.4	1 502.1	44.0	1 546.1	975.9	2 522.0	2.8	61.3
Lone parent	67.8	77.7	7.4	85.1	42.7	127.8	8.7	66.6
With dependants	26.1	28.3	*0.6	28.9	21.9	50.8	*2.2	56.8
Without dependants	41.7	49.5	6.8	56.3	20.7	77.0	12.1	73.1
Dependent student	6.2	178.4	33.8	212.1	282.2	494.3	15.9	42.9
Non-dependent child(b)	504.6	603.2	80.4	683.6	95.4	779.0	11.8	87.7
Other family person	84.1	108.3	14.9	123.2	57.0	180.2	12.1	68.4
Non-family member	651.7	783.3	72.7	855.9	401.5	1 257.5	8.5	68.1
Lone person	406.0	472.2	48.4	520.5	307.0	827.6	9.3	62.9
Not living alone	245.7	311.1	24.3	335.4	94.5	429.9	7.3	78.0
<b>Total</b>	<b>4 349.3</b>	<b>5 113.0</b>	<b>316.8</b>	<b>5 429.7</b>	<b>2 007.9</b>	<b>7 437.6</b>	<b>5.8</b>	<b>73.0</b>
<b>FEMALES</b>								
Family member	1 779.3	3 558.4	215.1	3 773.6	2 549.2	6 322.8	5.7	59.7
Wife or partner	1 313.6	2 561.1	90.2	2 651.3	1 818.3	4 469.6	3.4	59.3
With dependants	511.9	1 260.3	52.9	1 313.1	687.0	2 000.1	4.0	65.7
Without dependants	801.8	1 300.9	37.3	1 338.2	1 131.3	2 469.4	2.8	54.2
Lone parent	154.8	312.8	50.0	362.8	324.5	687.3	13.8	52.8
With dependants	41.5	62.5	*3.7	66.2	114.7	181.0	*5.6	36.6
Without dependants	113.3	250.4	46.2	296.6	209.8	506.4	15.6	58.6
Dependent student	*2.8	239.9	27.7	267.6	232.0	499.7	10.4	53.6
Non-dependent child(b)	262.3	369.4	36.2	405.6	52.8	458.4	8.9	88.5
Other family person	45.8	75.2	11.0	86.2	121.6	207.8	12.8	41.5
Non-family member	385.1	550.9	36.6	587.5	702.1	1 289.6	6.2	45.6
Lone person	243.2	339.4	20.7	360.2	618.5	978.6	5.8	36.8
Not living alone	141.9	211.5	15.9	227.4	83.6	311.0	7.0	73.1
<b>Total</b>	<b>2 164.3</b>	<b>4 109.3</b>	<b>251.7</b>	<b>4 361.1</b>	<b>3 251.3</b>	<b>7 612.4</b>	<b>5.8</b>	<b>57.3</b>
<b>PERSONS</b>								
Family member	5 476.9	7 888.1	459.2	8 347.3	4 155.6	12 502.9	5.5	66.8
Husband, wife or partner	4 348.5	5 923.3	197.7	6 121.0	2 947.3	9 068.3	3.2	67.5
With dependants	2 242.3	3 120.4	116.4	3 236.8	840.1	4 076.9	3.6	79.4
Without dependants	2 106.2	2 802.9	81.3	2 884.2	2 107.2	4 991.4	2.8	57.8
Lone parent	222.6	390.6	57.4	447.9	367.2	815.1	12.8	55.0
With dependants	67.5	90.7	*4.3	95.1	136.7	231.8	*4.6	41.0
Without dependants	155.0	299.8	53.0	352.9	230.5	583.4	15.0	60.5
Dependent student	9.0	418.3	61.5	479.8	514.2	994.0	12.8	48.3
Non-dependent child(b)	766.8	972.5	116.6	1 089.2	148.2	1 237.4	10.7	88.0
Other family person	129.9	183.5	26.0	209.4	178.6	388.1	12.4	54.0
Non-family member	1 036.8	1 334.2	109.3	1 443.5	1 103.6	2 547.1	7.6	56.7
Lone person	649.2	811.6	69.1	880.7	925.5	1 806.2	7.8	48.8
Not living alone	387.5	522.6	40.2	562.8	178.1	740.9	7.1	76.0
<b>Total</b>	<b>6 513.6</b>	<b>9 222.3</b>	<b>568.5</b>	<b>9 790.8</b>	<b>5 259.2</b>	<b>15 050.0</b>	<b>5.8</b>	<b>65.1</b>

(a) Civilians who were residents of private dwellings where family status was determined. Generally relationship in household is determined for more than 90% of all civilians aged 15 and over in the Labour Force Survey. (b) Aged 15 and over.

Source: ABS data available on request, Labour Force Survey.

### 6.9 EMPLOYED PERSONS, Employment/population ratios(a)

	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
	%	%	%	%	%	%
Males	66.9	67.2	67.6	67.6	67.4	67.6
Females	49.5	50.0	51.0	51.8	51.8	52.7
<b>Persons</b>	<b>58.1</b>	<b>58.5</b>	<b>59.2</b>	<b>59.6</b>	<b>59.5</b>	<b>60.0</b>

(a) The employment/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 and over in the same group.

Source: ABS data available on request, Labour Force Survey.

### Full-time and part-time employment

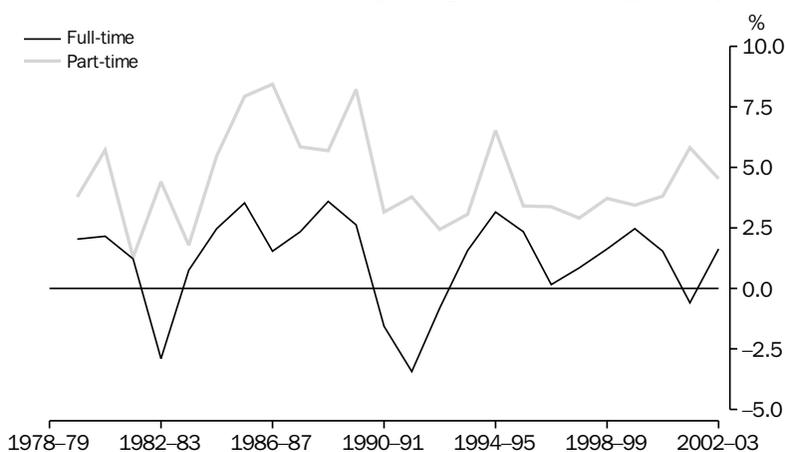
In the ABS Labour Force Survey, employed persons are regarded as either full-time or part-time, depending on the number of hours worked. Full-time workers are those who usually work 35 hours or more per week in all jobs, or, although usually working less than 35 hours a week, actually worked 35 hours or more during the reference week of the Labour Force Survey. 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 6.10 shows annual percentage changes in part-time and full-time employment since 1979–80. For most of this period part-time and full-time employment have followed much the same pattern. The major exceptions to this have been 1981–82 to 1983–84 and from 1999–2000 onwards. In every year part-time employment has increased at a greater rate than full-time

employment. Consequently, the proportion of part-time employed persons has also risen over the period, increasing from 15.7% in 1979–80 to 28.5% in 2002–03.

Following a period of strong economic growth in the late-1980s and early-1990s, and the subsequent recession of the early-1990s, employment growth fluctuated considerably. In 1988–89, growth in full-time employment peaked at 3.6%. Part-time employment grew strongly in 1989–90, peaking at 8.2%. Subsequently the rate of growth of full-time and part-time employment began to slow. At the onset of the recession in 1990–91, full-time employment fell by 1.6%. The impact of the recession and its effects on the demand for labour intensified in 1991–92 when full-time employment fell more strongly, recording a decrease of 3.4%. At the same time, the rate of growth of part-time employment increased slightly from 3.2% in 1990–91 to 3.8% in 1991–92.

6.10 EMPLOYED PERSONS, Percentage change in annual average employment



Source: ABS data available on request, Labour Force Survey.

Similar patterns are evident in 1982–83 and 2001–02 when decreases in full-time employment were accompanied by peaks in the growth of part-time employment. This was particularly marked in 1982–83.

In 2002–03 there were 9,458,500 employed persons, with 72.0% working full-time (table 6.11). Males were far more likely than females to work full-time (85.2% and 54.3% respectively). Part-time work was most prevalent among the younger (aged 15–19) and older (65 and over) age groups (67.1% and 52.5% respectively). For females, at least a third of each age group worked part-time, with the 20–24 and 25–34 year age groups having the lowest proportion of part-time workers (38.3% and 34.9% respectively).

### Employment by industry and occupation

The distribution of employed persons across industries and occupations, and the changes over time, provide an important insight into the structure of the labour market. Graph 6.12

provides information on the proportion of employed persons, by industry, for the years 1987–88 and 2002–03.

Since 1987–88, the industry composition of the labour market has changed considerably. Historically, the Manufacturing industry has been the dominant employing industry, but its contribution to the number of employed persons has been declining. As recently as 1990–91, the Manufacturing industry was the largest employer; however, it is now second to Retail trade, which has 15.4% of employed persons. Manufacturing has fallen from 16.1% of all employed persons in 1987–88, and 14.7% in 1990–91, to 12.0% in 2002–03. Employment in other traditional commodity-based industries, such as Agriculture, forestry and fishing, and Mining, has also declined over this period.

Over the period 1987–88 to 2002–03, service-based industries have increased their share of employed persons. Property and business services has increased markedly, from 7.0% to 11.6% of employed persons, to now rate as the third biggest employing industry, while Health has risen from 8.3% to 9.9%, and Accommodation, cafes and restaurants from 3.7% to 4.8%.

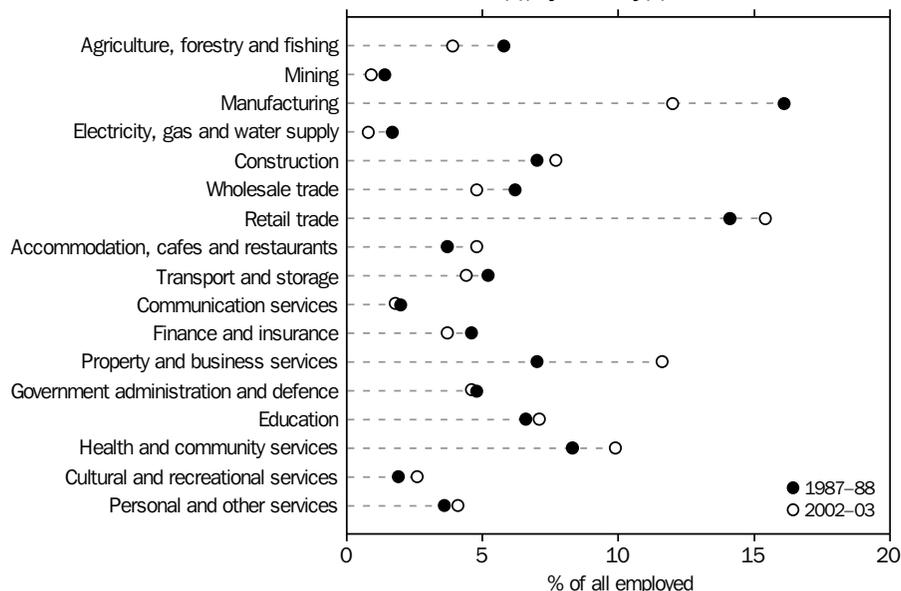
**6.11 EMPLOYED PERSONS(a), Full-time and part-time workers — 2002–03**

	Units	Age group (years)								Total
		15–19	20–24	25–34	35–44	45–54	55–59	60–64	65 and over	
<b>MALES</b>										
Full-time workers	'000	144.2	415.2	1 144.6	1 177.3	1 042.2	340.0	153.1	60.4	4 477.1
Part-time workers	'000	194.1	132.7	111.1	94.8	91.6	56.3	46.5	48.6	775.7
<b>Total</b>	<b>'000</b>	<b>338.3</b>	<b>547.8</b>	<b>1 255.6</b>	<b>1 272.1</b>	<b>1 133.9</b>	<b>396.3</b>	<b>199.6</b>	<b>109.0</b>	<b>5 252.7</b>
Proportion of part-time workers	%	57.4	24.2	8.8	7.5	8.1	14.2	23.3	44.6	14.8
<b>FEMALES</b>										
Full-time workers	'000	81.3	305.4	633.3	522.0	547.4	137.7	44.7	12.1	2 284.0
Part-time workers	'000	264.9	189.3	339.6	497.2	405.2	131.7	62.4	31.5	1 921.8
<b>Total</b>	<b>'000</b>	<b>346.2</b>	<b>494.7</b>	<b>973.0</b>	<b>1 019.2</b>	<b>952.6</b>	<b>269.4</b>	<b>107.1</b>	<b>43.6</b>	<b>4 205.8</b>
Proportion of part-time workers	%	76.5	38.3	34.9	48.8	42.5	48.9	58.3	72.3	45.7
<b>PERSONS</b>										
Full-time workers	'000	225.5	720.6	1 777.9	1 699.3	1 589.7	477.7	197.8	72.6	6 761.0
Part-time workers	'000	459.0	322.0	450.7	591.9	496.9	188.0	108.9	80.1	2 697.5
<b>Total</b>	<b>'000</b>	<b>684.5</b>	<b>1 042.5</b>	<b>2 228.6</b>	<b>2 291.3</b>	<b>2 086.5</b>	<b>665.7</b>	<b>306.7</b>	<b>152.7</b>	<b>9 458.5</b>
Proportion of part-time workers	%	67.1	30.9	20.2	25.8	23.8	28.2	35.5	52.5	28.5

(a) Annual average.

Source: ABS data available on request, Labour Force Survey.

### 6.12 EMPLOYED PERSONS(a), By industry(b)



(a) Annual average of quarterly data. (b) Classified according to the Australian and New Zealand Standard Industrial Classification.

Source: ABS data available on request, Labour Force Survey.

Table 6.13 shows the number of employed persons in each broad occupation group by age, for 2002–03. The most common occupation group was Professionals (18.6%), followed by

Intermediate clerical, sales and service workers (17.3%). Advanced clerical and service workers was the least prevalent occupation group (4.1%).

### 6.13 EMPLOYED PERSONS(a), By occupation(b) — 2002-03

	Units	Age group (years)								All age groups
		15-19	20-24	25-34	35-44	45-54	55-59	60-64	65 and over	
Managers and administrators	%	0.4	1.6	5.4	8.2	9.8	9.8	12.7	26.5	7.2
Professionals	%	1.6	13.1	22.0	20.8	21.2	18.8	17.3	17.9	18.6
Associate professionals	%	2.9	8.2	12.7	13.6	14.0	13.5	14.1	12.8	12.1
Tradespersons and related workers	%	12.2	15.8	14.4	12.8	10.6	10.6	11.1	7.7	12.7
Advanced clerical and service workers	%	0.9	3.6	4.2	4.3	4.6	5.1	5.0	4.7	4.1
Intermediate clerical, sales and service workers	%	16.0	24.5	17.9	16.7	16.0	15.7	12.7	9.6	17.3
Intermediate production and transport workers	%	7.0	7.1	8.1	9.1	9.1	10.1	9.2	5.9	8.5
Elementary clerical, sales and service workers	%	40.9	16.1	7.3	6.1	6.3	6.8	7.4	6.0	10.1
Labourers and related workers	%	17.9	10.1	8.0	8.4	8.4	9.5	10.5	9.0	9.3
All occupations	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	'000	676.1	1 034.7	2 227.5	2 294.0	2 087.1	669.1	305.1	147.7	9 441.4

(a) Annual average of quarterly data. (b) Classified according to the Australian Standard Classification of Occupations.

Source: ABS data available on request, Labour Force Survey.

There is a correlation between age and occupation, with a higher proportion of employed persons in the younger age groups employed in the lower skilled occupations, and a higher proportion of employed persons in the older age groups employed in the more highly skilled occupations. For example, less than 1% of 15–19 year olds and 2% of 20–24 year olds were employed as Managers and administrators, while at the other end of the age spectrum, in the age group 65 years and over, 26.5% were employed in this occupation group. In the lower age groups, 40.9% of persons aged 15–19 were employed as Elementary clerical, sales and service workers, and a further 17.9% as Labourers and related workers. The proportion of 20–24 year olds employed in these occupation groups was considerably lower (16.1% and 10.1% respectively), and continued to be lower in all other age groups.

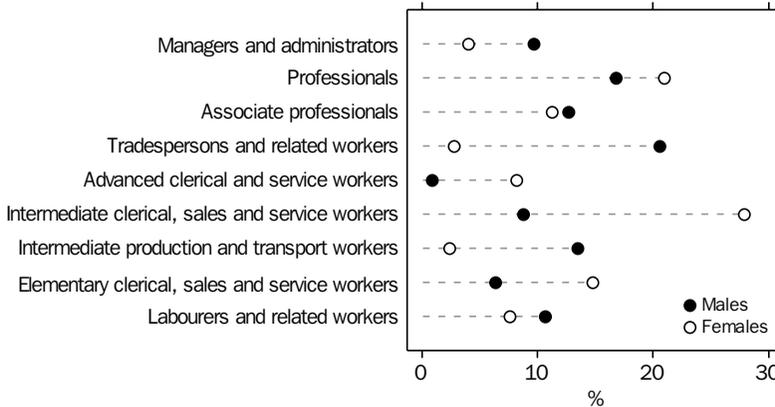
There are large gender differences in occupations. Females dominate clerical occupations, such as Advanced clerical and service workers,

Intermediate clerical, sales and service workers, and Elementary clerical, sales and service workers; while males dominate the trade occupations, including Tradespersons and related workers, and Intermediate production and transport workers (graph 6.14). For example, a higher proportion of males were employed as Tradespersons and related workers (20.6% compared to 2.8% for females), while a higher proportion of females were employed as Intermediate clerical, sales and service workers (27.9% compared to 8.8% for males).

### Characteristics of employment

Working life in Australia continues to change. There are more diverse employment arrangements, more flexible working time patterns, and more people working part-time hours. This section looks at the types of arrangements people are employed under, and the hours they work.

**6.14 EMPLOYED PERSONS(a), By occupation(b) — 2002–03**



(a) Annual average of quarterly data. (b) Classified according to the Australian Standard Classification of Occupations.

Source: ABS data available on request, Labour Force Survey.

## Employment type

The ABS Forms of Employment Survey for November 2001 collected information on persons employed in a range of situations and described their working arrangements. Employed persons, excluding contributing family workers and persons working for payment in kind only, were classified to one of five employment types on the basis of their main job, that is, the job in which they usually worked the most hours. The employment types are: employees with paid leave entitlements; self-identified casuals; employees without paid leave entitlements who did not identify as a casual; owner managers of incorporated enterprises; and owner managers of unincorporated enterprises.

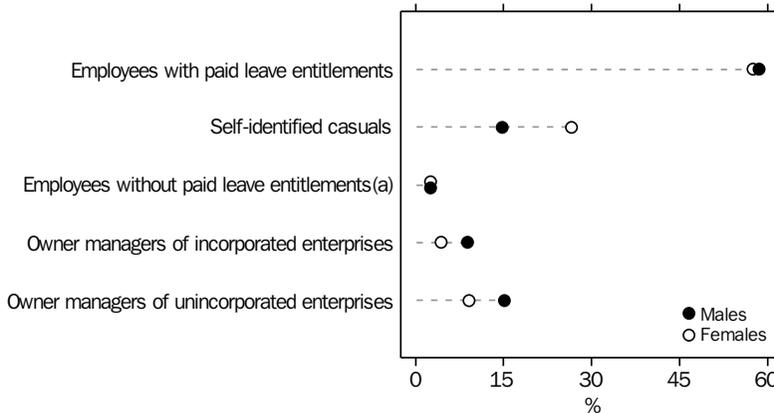
There were 9,058,500 employed persons surveyed in November 2001. The predominant employment type was employees with paid leave entitlements (58.1%). Other large groups were self-identified casuals (20.0%) and owner managers of unincorporated enterprises (12.5%).

Graph 6.15 shows that although the proportion of employed persons who were employees with paid leave entitlements was similar for males (58.6%) and females (57.5%), more females identified themselves as casual employees (26.6%) than males (14.7%). In contrast, the proportion of employed males working in their own business was higher than for females (24.1% compared to 13.5%).

## Hours worked

Hours data have a wide range of uses, including calculation of productivity, and monitoring working conditions. Information on hours worked allows the ABS to classify employed persons as full-time or part-time, and also to identify underemployed persons (in conjunction with measures of those wanting to work more hours). There are a number of measures of hours of work, and this section examines the number of hours that employed persons have actually worked in all jobs during the reference week. The *Usual hours* article in this chapter discusses other measures of hours worked.

6.15 EMPLOYMENT TYPE — November 2001



(a) Who did not identify as casual.

Source: *Forms of Employment, Australia, November 2001* (6359.0).

Average weekly hours worked is defined as aggregate hours worked by a group of employed persons during the reference week divided by the number of employed persons in that group.

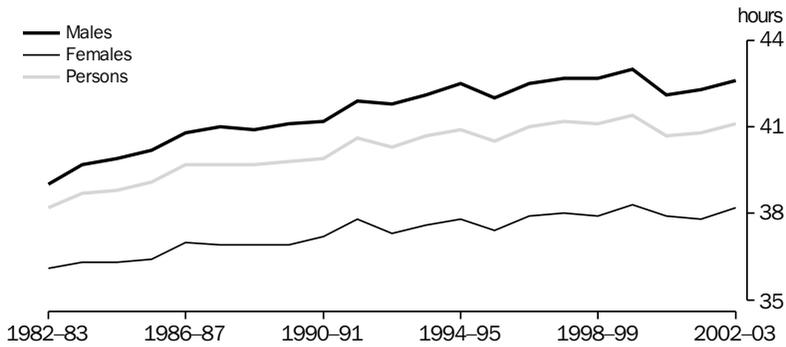
Graph 6.16 shows that the average weekly hours worked by full-time employed persons rose from 38.2 in 1982–83 to 41.4 in 1999–2000, an increase of 8.4%. In 2002–03, full-time employed persons worked an average of 41.1 hours per week.

As shown in graph 6.17, the average weekly hours worked in full-time employment differed across occupations, although males worked between two and five hours longer than females in all occupations. The greatest difference was in the

occupation Managers and administrators where, on average, males worked 5.1 hours per week longer than females.

Managers and administrators also recorded the highest average weekly hours for full-time employed males (50.3 hours per week) and females (45.2), followed by Associate professionals (46.7 and 42.4). The occupations with the lowest average weekly hours worked (by full-time workers) were Labourers and related workers for males (40 hours per week) and Intermediate clerical, sales and service workers for females (37.2).

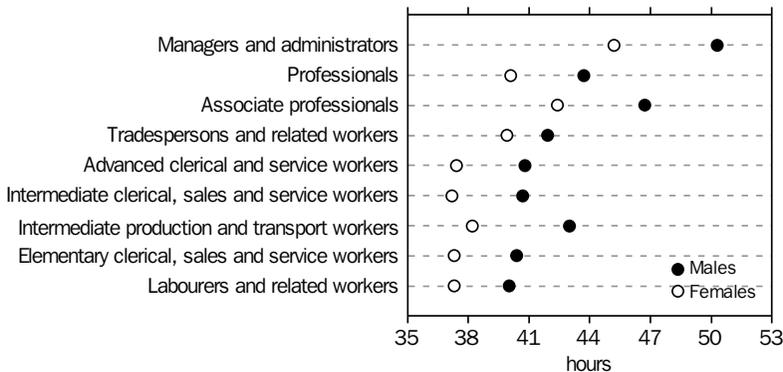
**6.16 AVERAGE WEEKLY HOURS WORKED(a), Full-time employed persons**



(a) Annual average.

Source: ABS data available on request, Labour Force Survey.

**6.17 AVERAGE WEEKLY HOURS WORKED(a), By occupation(b) of full-time employed persons — 2002-03**



(a) Annual average of quarterly data. (b) Classified according to the Australian Standard Classification of Occupations.

Source: ABS data available on request, Labour Force Survey.

When the hours of part-time workers are included, the overall average weekly hours worked for males (39.6) was almost 11 hours greater than for females (29.0), as shown in table 6.18. This was due partly to males working longer average weekly hours in full-time employment (43.6) than females (39.3), and also because females were more likely than males to work part-time.

**6.18 EMPLOYED PERSONS(a), Average weekly hours worked(b) — 2002–03**

	Males	Females	Persons
	hours	hours	hours
Full-time workers	43.6	39.3	42.1
Part-time workers	16.2	16.6	16.5
All workers	39.6	29.0	34.8

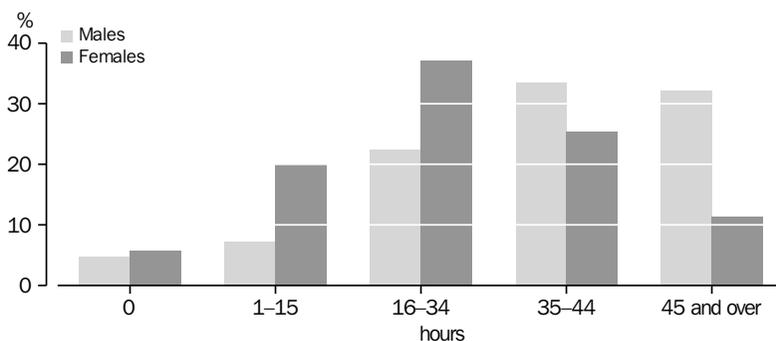
(a) Annual average. (b) Estimates refer to actual hours worked, not hours paid for.

Source: ABS data available on request, *Labour Force Survey*.

Graph 6.19 shows that, in June 2003, 33.5% of employed males worked between 35 and 44 hours per week, and a further 32.1% worked 45 hours or more per week. In contrast, 11.4% of employed females worked 45 hours or more per week. Over a third of employed females (37.2%) worked between 16 and 34 hours per week.

Graph 6.20 shows that, from 1983–84 to 2002–03, there was a steady increase in the number of hours worked by part-time workers as a percentage of the total number of hours worked. In 1982–83, 7.4% of all hours worked were in part-time employment; however, in 2002–03 this had risen to 13.5%. For males, 6.1% of the total number of hours worked were attributed to part-time employment in 2002–03, whereas for females the proportion was much greater (26.1%).

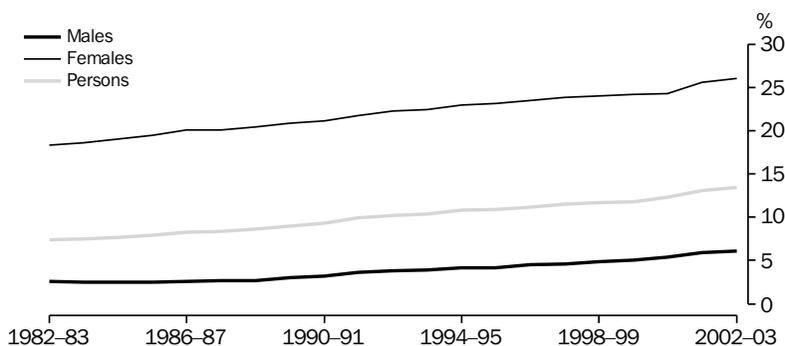
**6.19 EMPLOYED PERSONS(a), Hours worked in all jobs — June 2003**



(a) Includes employed persons who were away from work during the survey reference week.

Source: *Labour Force, Australia, Detailed — Electronic Delivery, June 2003 (6291.0.55.001)*.

## 6.20 PART-TIME HOURS AS A PROPORTION OF TOTAL HOURS WORKED(a)



(a) Annual average.

Source: ABS data available on request, Labour Force Survey.

## Labour mobility

Each year in Australia many people change their employer or business or the locality of their employment. Often this change is also accompanied by changes in industry and/or occupation, or change between full-time and part-time work. This article is based on data from the ABS Labour Mobility Survey which was last conducted in February 2002. The survey provides information about labour force mobility over a 12-month period. It is useful in analysing the dynamic nature of the labour force, job turnover and the ability of people to move between occupation and industry in response to changing demands for skills and labour.

### Job mobility and age

In February 2002, 15.1% of people who had worked at some time in the previous 12 months either changed employer/business or changed locality during the previous 12 months. Across all age groups, 11.8% of people changed employer/business without changing their locality. Only a small proportion of people changed their employer/business and locality (0.5%) or stayed with their same employer but changed locality (2.8%) (table 6.21).

### 6.21 JOB MOBILITY(a), By age group — February 2002

	Changed employer/business or locality				Total	Total
	Changed employer/business(a)	Changed locality only	Changed employer/business or locality(b)	Did not change employer/business or locality		
	%	%	%	%	%	'000
15-19	18.3	1.0	19.3	80.7	100.0	792.1
20-24	22.9	3.0	25.8	74.2	100.0	1 125.4
25-34	15.9	3.7	19.6	80.4	100.0	2 347.8
35-44	10.1	3.0	13.1	86.9	100.0	2 386.6
45-54	7.2	2.7	9.9	90.1	100.0	2 094.9
55-69	4.0	1.6	5.6	94.4	100.0	1 109.6
<b>All age groups</b>	<b>12.3</b>	<b>2.8</b>	<b>15.1</b>	<b>84.9</b>	<b>100.0</b>	<b>9 856.4</b>

(a) Persons who worked at some time during the year ending February 2002. (b) Comprises persons who changed employer/business only and persons who changed employer/business and locality.

Source: Labour Mobility, Australia, February 2002 (6209.0).

The most mobile age group were the 20–24 year olds. In this age group, 25.8% changed employer/business or locality during the year. The least mobile age group were the 55–69 year olds with just 5.6% changing employer/business or locality during the year.

## Industry

Table 6.22 shows the number and proportion of people leaving and entering industries during the year ended February 2002. While the net movement in the size of most industries was not large, some industries experienced more significant gross movements with a high proportion of people leaving and arriving in the industry during the year. Overall, 14.8% of persons employed at February 2002 arrived in the industry in which they were working during the year. The majority of these (61%) were not working at February 2001 and the remainder had changed jobs to enter the industry. Of persons employed at February 2001, 12.4% left the industry in which they were employed during the year. A little over half of these were not working at February 2002, and the remainder had left the industry when changing jobs during the year.

Accommodation, cafes and restaurants had the highest movements in both people entering and leaving the industry. Over one-quarter (26.6%) of persons working in the industry in February 2002 were new to the industry. Conversely, 20.0% of persons working in the industry in February 2001 were no longer working in the industry in February 2002. Retail trade also had high gross movements in people entering and leaving the industry during the year (19.7% and 15.7%, respectively).

The industries with the lowest proportion of people entering the industry during the year were Agriculture, forestry and fishing (9.4%), Education (9.9%) and Government administration (10.8%). Education also had one of the smallest proportions of people leaving the industry during the year (9.2%). Other industries which had only a low proportion of people leaving the industry during the year were Health and community services (8.0%), and Construction (9.2%).

**6.22 CHANGES IN EMPLOYMENT(a), By industry**

	Persons employed at February 2001			Persons employed at February 2002		
	Total	Left industry during the year		Total	Entered industry during the year	
	'000	'000	%	'000	'000	%
Agriculture, forestry and fishing	379.0	37.8	10.0	376.6	35.5	9.4
Mining	77.5	11.1	14.3	76.0	9.5	12.5
Manufacturing	1 098.4	131.1	11.9	1 098.6	131.2	11.9
Electricity, gas and water supply	63.8	7.2	11.2	65.1	8.4	12.9
Construction	704.6	64.8	9.2	722.5	82.8	11.5
Wholesale trade	428.0	56.7	13.2	442.1	70.8	16.0
Retail trade	1 312.9	205.8	15.7	1 379.4	272.3	19.7
Accommodation, cafes and restaurants	430.5	85.9	20.0	469.7	125.1	26.6
Transport and storage	413.4	58.1	14.1	402.9	47.6	11.8
Communication services	178.5	26.7	14.9	177.3	25.5	14.4
Finance and insurance	343.2	48.2	14.0	343.2	48.2	14.1
Property and business services	995.1	127.8	12.8	1 040.0	172.7	16.6
Government administration and defence	375.9	38.2	10.2	378.5	40.8	10.8
Education	612.0	56.3	9.2	617.0	61.3	9.9
Health and community services	837.3	67.3	8.0	884.8	114.7	13.0
Cultural and recreational services	229.0	34.1	14.9	236.4	41.8	17.6
Personal and other services	334.7	38.1	11.4	350.5	53.9	15.4
<b>All industries</b>	<b>8 813.9</b>	<b>1 095.1</b>	<b>12.4</b>	<b>9 060.7</b>	<b>1 341.9</b>	<b>14.8</b>

(a) During the year ending February 2002.

Source: *Labour Mobility, Australia* (6209.0).

## Duration of current job

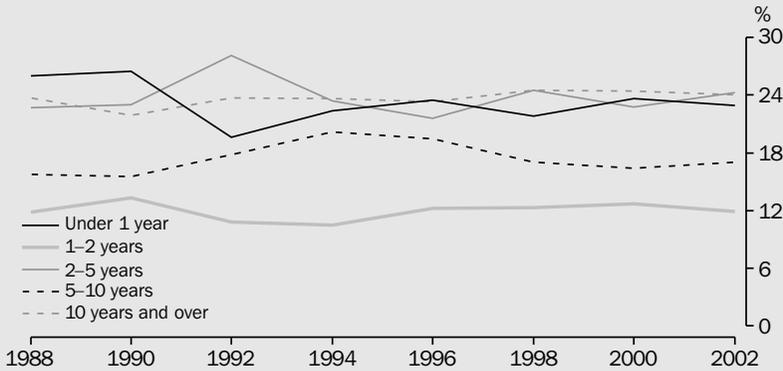
Nearly one-quarter (24.0%) of persons working at February 2002 had been in their current job for 10 years or more, and 22.9% had worked in their current job for less than one year. The remaining 53% had been in their job for between one and ten years.

The period of strong economic growth in the late 1980s was accompanied by strong growth in employment and corresponding increases in the proportion of people working in their current jobs for shorter durations (under two years). At the onset of recession in the early-1990s, the proportion of people who were in their jobs for short durations fell significantly. Between 1990

and 1992 the proportion of people who had been in their job for less than one year fell by 6.9 percentage points to 19.6%. Corresponding to this, the proportion of people who had been in their current job for 2–5 years increased by 5.1 percentage points and the proportion employed in their current job for 5–10 years increased by 2.3 percentage points.

Since 1992, the proportion of people who have been in their current job for less than one year has increased, but has not reached the same proportions as experienced in 1988 and 1990. The proportion of people who have been in their current job for 10 years or more has remained fairly constant, ranging between 23.6% and 24.0% (graph 6.23).

6.23 WORKING AT FEBRUARY 2002, Duration of current job



Source: *Labour Mobility, Australia* (6209.0).

## References

Australian Bureau of Statistics, *Labour Mobility, Australia*, cat. no. 6209.0, various issues, ABS, Canberra.

## Usual hours

When the new Labour Force Survey (LFS) questionnaire was introduced for the April 2001 survey, two new measures of weekly hours worked were included — actual hours worked in main job and usual hours worked in all jobs. These new measures complement the existing hours worked measure (actual hours worked in all jobs) that has been used since the beginning of the LFS in the 1960s and presented in the hours worked section earlier in this chapter.

This article looks at the new measures now available from the survey, discusses their differences, and gives examples of how they may be used.

### LFS hours worked data

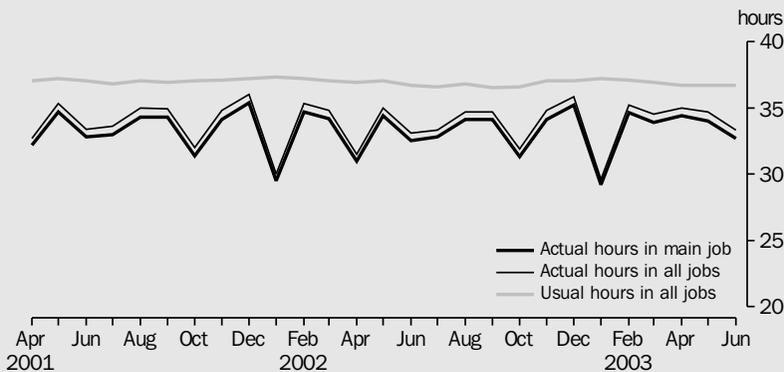
The LFS now records weekly hours worked data for employed persons on three different bases. The existing measure actual hours worked in all jobs refers to hours actually worked in the survey reference week, including overtime and excluding any time off. The new measure actual hours worked in main job refers to hours actually worked (including overtime and excluding any time off) in the job in which the most hours are usually worked. The new measure usual hours worked in all jobs refers to the normal working pattern over the past three months in all jobs, including overtime if that has been a regular part of work over that period.

The data for the two new hours worked measures are only available from April 2001. While earlier labour force surveys recorded whether or not persons actually working less than 35 hours (in all jobs) usually worked less than 35 hours per week, the information was only used to determine full-time/part-time status.

Graph 6.24 shows average weekly hours worked for employed persons for the three hours measures. As can be seen both average weekly hours actually worked measures are influenced by seasonal factors arising from social factors (customs in taking leave) and economic factors (workplace-related influences). Large movements can be seen to occur around the months of January, April and October over the period since April 2001. It can also be seen that the average weekly hours worked in main job series closely follows, but lies slightly below, the average weekly hours worked in all jobs series. This indicates that the number of hours worked in second and subsequent jobs is relatively small.

Average weekly hours usually worked in all jobs exhibits much lower levels of variability over the period since April 2001. This is because the usual hours worked series is not affected by the seasonal factors that lead to the fluctuations in the actual hours worked series.

6.24 EMPLOYED PERSONS, Average weekly hours worked



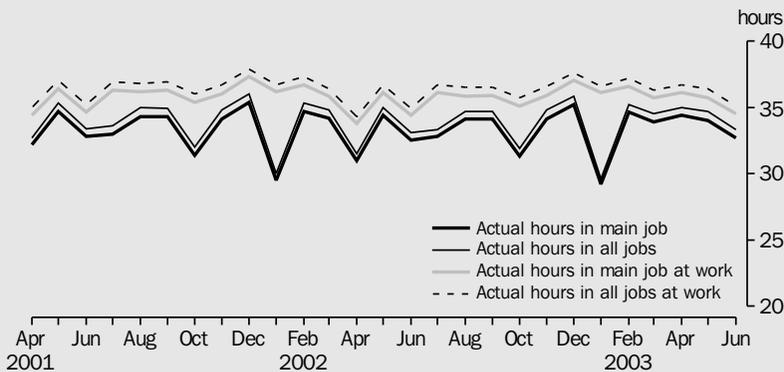
Source: ABS data available on request, Labour Force Survey.

A significant amount of the variation in average hours actually worked in all jobs (and main job) can be explained by people who worked no hours, that is, were absent from their job. The calculation of simple averages can disguise widely differing contributions between underlying groups, or changes in their behaviour. Adjusting the calculation for average hours by excluding those people absent from their job allows us to examine average weekly hours of employed persons at work. Graph 6.25 illustrates the difference between the two concepts. As can be seen, there is still variability in the people at work series, but the relative size the variation in

average weekly hours in the months of January, April and October each year are much smaller for the people at work series than the employed persons series.

Table 6.26 shows, for June 2003, hours worked classified by hour range categories. This table highlights significant differences between hours usually worked and hours actually worked. Usual hours worked in all jobs is concentrated in the groups 35–39 hours (19%) and 40 hours (20%), compared with 14% actually working 35–39 hours and 12% actually working 40 hours in the reference week.

**6.25 EMPLOYED PERSONS AT WORK, Average weekly hours worked**



Source: ABS data available on request, Labour Force Survey.

**6.26 EMPLOYED PERSONS, By hours worked — June 2003**

	Actual hours worked in main job		Actual hours worked in all jobs		Usual hours worked in all jobs	
	'000	%	'000	%	'000	%
0	505.0	5.3	496.5	5.2	28.6	0.3
1–15	1 295.3	13.6	1 242.5	13.0	1 155.4	12.1
16–29	1 509.9	15.9	1 473.2	15.5	1 227.4	12.9
30–34	1 308.5	13.7	1 288.6	13.5	501.1	5.3
35–39	1 308.4	13.7	1 304.4	13.7	1 849.5	19.4
40	1 166.2	12.2	1 145.6	12.0	1 934.0	20.3
41–44	373.9	3.9	394.5	4.1	328.6	3.5
45–49	648.6	6.8	672.7	7.1	762.3	8.0
50 and over	1 407.6	14.8	1 505.4	15.8	1 736.6	18.2
<b>Total</b>	<b>9 523.6</b>	<b>100.0</b>	<b>9 523.6</b>	<b>100.0</b>	<b>9 523.6</b>	<b>100.0</b>

Source: ABS data available on request, Labour Force Survey.

# Underemployed workers

Underutilised labour resources are often viewed as comprising people who are out of work, whether unemployed or out of the labour force completely. However, underutilised labour can also include some people who are in work: specifically, those who work fewer hours than they want to — the underemployed.

The ABS defines two categories of underemployed people: part-time workers who want, and are available for, additional hours of work; and full-time workers who worked part-time hours in the survey reference week for economic reasons (e.g. they had been stood down, put on short time or there was insufficient work available for them).

In September 2002, there were 574,300 underemployed persons (table 6.27). Of these, 8% (47,900 persons) worked part-time hours for economic reasons, for example stood down. Men were more likely than women to be underemployed for these reasons (15% of underemployed men in September 2002, compared with 3% of underemployed women).

Most underemployed people (92%) were part-time workers wanting more work. The 526,400 underemployed part-time workers accounted for 20% of all part-time workers. The majority of underemployed people were women. This is partly because women are far more likely to be working part-time than men. In September 2002, there were 1.9 million women working part-time, compared with 748,600 men.

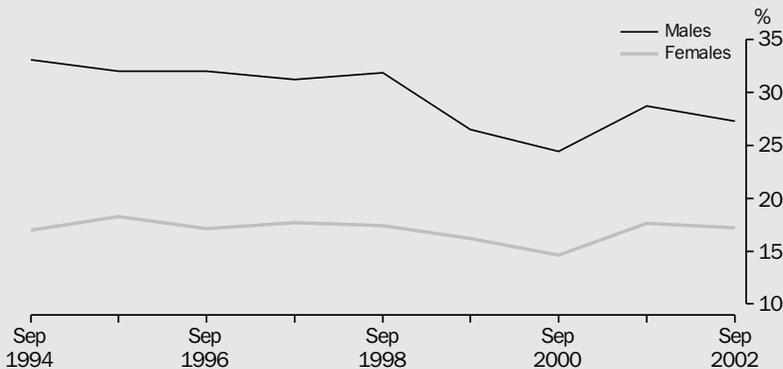
Men working part-time are more likely to be underemployed than women working part-time. In September 2002, 27% of all male part-time workers were underemployed, compared with 17% of female part-time workers. In September 1994, these proportions were 33% and 17% respectively (graph 6.28).

### 6.27 UNDEREMPLOYED WORKERS — September 2002

	Males '000	Females '000	Persons '000
Part-time workers wanting more hours who were available to start work with more hours	204.0	322.3	526.4
Full-time workers who worked less than 35 hours in the reference week for economic reasons	36.3	11.6	47.9
<b>Total</b>	<b>240.3</b>	<b>334.0</b>	<b>574.3</b>

Source: *Underemployed Workers, Australia, September 2002* (6265.0).

### 6.28 PART-TIME WORKERS, Proportion who were underemployed



Source: *Underemployed Workers, Australia* (6265.0).

### Preference for full-time work

While all underemployed workers want to work more hours, not all want to work full-time. Underemployed men are more likely to want full-time work than underemployed women. In September 2002, almost three-quarters (73%) of all underemployed male part-time workers wanted full-time work, compared with nearly half (49%) of underemployed female part-time workers.

### Job search activities

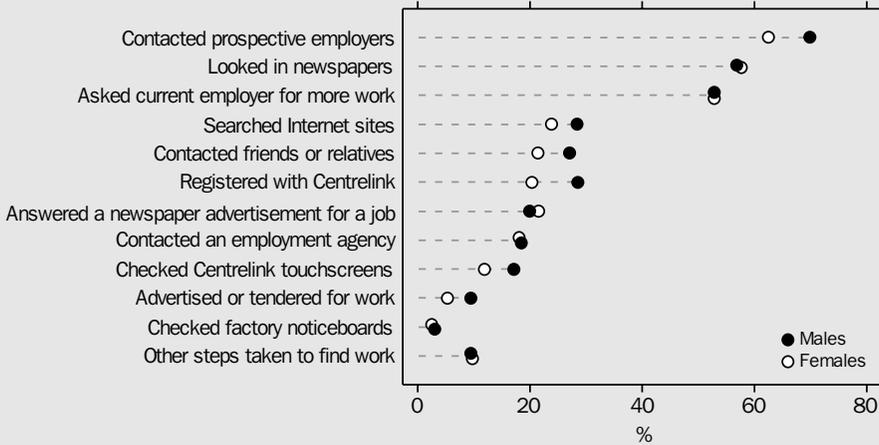
In September 2002, more than half (56%) of all underemployed part-time workers had actively looked for additional hours of work in the previous four weeks. The most common steps taken by these people to find additional work were contacting prospective employers (66%), looking in newspapers (57%) and asking their current employers for more work (53%). Almost one-quarter (24%) had registered with Centrelink (graph 6.29).

### Difficulties in finding work

In September 2002, almost one in three (30%) underemployed part-time workers looking for additional hours of work said their main difficulty in finding work with more hours was that there were no vacancies in their line of work, or simply no vacancies at all. For an additional 29%, the main difficulty was that there were too many applicants for available jobs, that they were considered too young or too old by employers, or that they lacked necessary skills or education.

Men were more likely than women to mention one of these five reasons as their main difficulty in finding additional work (62% of male part-time workers looking and available for additional work compared with 56% of females). Women were more likely than men to cite difficulties related to a lack of necessary skills or education (9% of males compared with 12% of females) and unsuitable hours (6% of males compared with 10% of females) (graph 6.30).

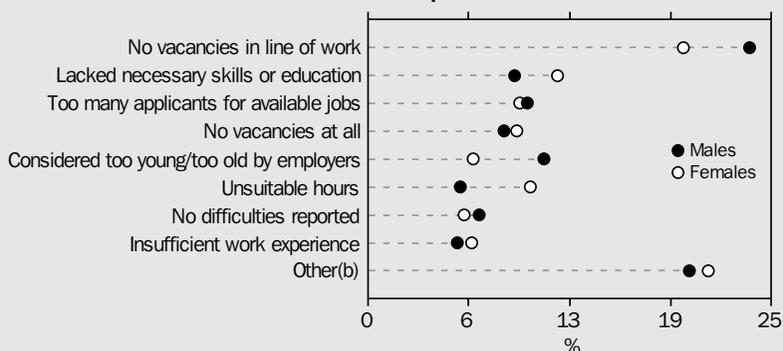
**6.29 UNDEREMPLOYED PART-TIME WORKERS(a), By job search activity(b) — September 2002**



(a) Underemployed part-time workers looking for additional hours of work. (b) All steps taken to find more work during the four-week period prior to the survey. Persons may appear in more than one category.

Source: ABS data available on request, Underemployed Workers Survey.

### 6.30 UNDEREMPLOYED PART-TIME WORKERS(a), Main difficulty in finding additional work — September 2002



(a) Underemployed part-time workers looking for additional hours of work. (b) Includes: own ill-health or disability; too far to travel/transport problems; language difficulties; difficulties with ethnic background; difficulties with childcare; other family responsibilities; and other difficulties.

Source: ABS data available on request, *Underemployed Workers Survey*.

## References

Australian Bureau of Statistics, *Underemployed Workers, Australia*, cat. no. 6265.0, various issues, ABS, Canberra.

## Unemployed persons

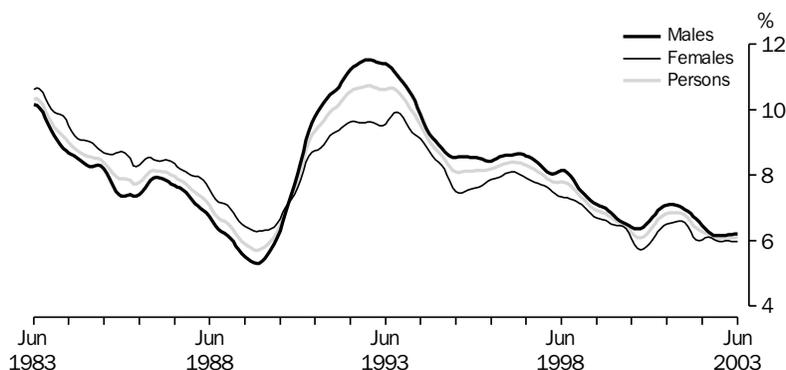
In the Labour Force Survey, people are considered to be unemployed if they satisfy three criteria: they are not employed; they are available for work; and they are taking active steps to find work.

Two important measures of unemployment are the number of persons unemployed and the unemployment rate. The unemployment rate, defined as the number of unemployed persons

expressed as a percentage of the labour force, offers an insight into the degree of slack in the labour market.

Movements in the unemployment rate over the past 20 years are dominated by the recessions of the early-1980s and early-1990s, and the subsequent periods of economic recovery (graph 6.31). In trend terms, the unemployment rate peaked at 10.7% in December 1992, then generally fell over the rest of the 1990s, to stand at 6.1% in June 2003.

### 6.31 UNEMPLOYMENT RATE: Trend estimates



Source: *Labour Force, Australia* (6202.0).

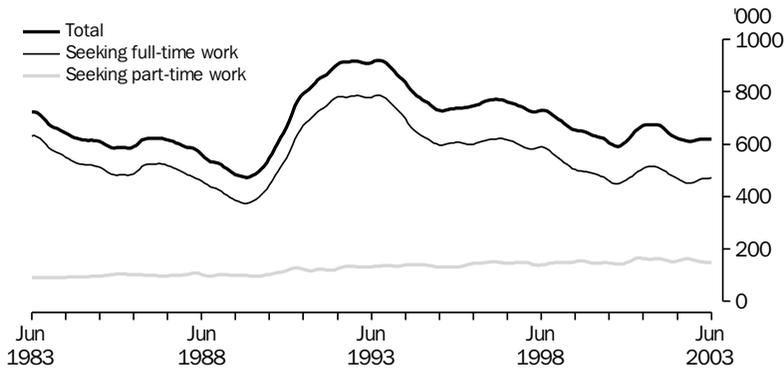
Historically, the unemployment rate for males has been lower than for females. However, just prior to the recession of the early-1990s, when unemployment increased dramatically, the male unemployment rate increased to a level above the female unemployment rate, and has remained higher ever since.

As graph 6.32 shows, unemployment has generally declined from the levels recorded during the last recession. For the unemployed seeking full-time work, the trend generally reflected the overall impact of the economic cycle. In contrast, over the last two decades or more, the trend for those seeking part-time work, while rising more strongly

in the course of a recession, has more generally continued to increase, rising from 89,700 persons (or 12% of unemployed persons) in 1983 to 147,700 persons (or 24% of unemployed persons) in 2003.

In recent years, the proportion of the unemployed who had experienced unemployment for 26 weeks or less has been rising steadily, while the proportion who experienced unemployment for 52 weeks and over (long-term unemployment) has been in decline. In 2002–03, 64.0% of unemployed persons had been unemployed for less than 26 weeks, while the long-term unemployed made up 22.1% of unemployment (table 6.33).

**6.32 UNEMPLOYED PERSONS: Trend estimates**



Source: *Labour Force, Australia* (6202.0).

**6.33 UNEMPLOYED PERSONS(a)(b), By duration of unemployment**

Weeks	Units	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
Under 8	%	27.9	29.8	34.0	35.8	35.0	36.1
8 to under 26	%	23.9	23.3	23.6	25.7	28.3	27.9
Under 26	%	51.8	53.1	57.6	61.5	63.3	64.0
26 to under 52	%	16.6	14.9	13.8	13.9	14.3	13.9
52 to under 104	%	14.5	13.4	10.8	9.7	9.0	9.1
104 and over	%	17.2	18.5	17.9	14.9	13.4	13.0
52 and over	%	31.7	31.9	28.7	24.6	22.4	22.1
<b>Total</b>	%	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Number	'000	764.2	718.2	661.4	647.7	656.8	616.3

(a) Annual averages. (b) Data have not been revised to reflect definitional changes introduced in April 2001. Data collected from April 2001 onwards are not strictly comparable with data collected in earlier periods. For further information, see 'Information Paper: Implementing the Redesigned Labour Force Survey Questionnaire' (6295.0).

Source: ABS data available on request, *Labour Force Survey*.

Educational qualifications have a significant bearing on labour market prospects. Table 6.34 shows the relationship between the level of highest educational attainment and duration of unemployment. Of unemployed persons with a bachelor degree or above in July 2002, 15.7% were long-term unemployed, compared to 31.7% of those who had completed Year 10 or below.

Unemployed persons may encounter a variety of difficulties in finding work, as shown in graph 6.35 and table 6.36. In the July 2002 survey, the most

commonly reported main difficulties in finding work were 'Too many applicants for available jobs' (14.7% compared with 11.5% in 2001), 'Considered too young or too old by employers' (13.4% compared with 11.7% in 2001), 'Insufficient work experience' (11.2%, compared with 11.6% in 2001). Those reporting 'No vacancies at all' fell from 10.7% of the unemployed in July 2001 to 6.6% in July 2002.

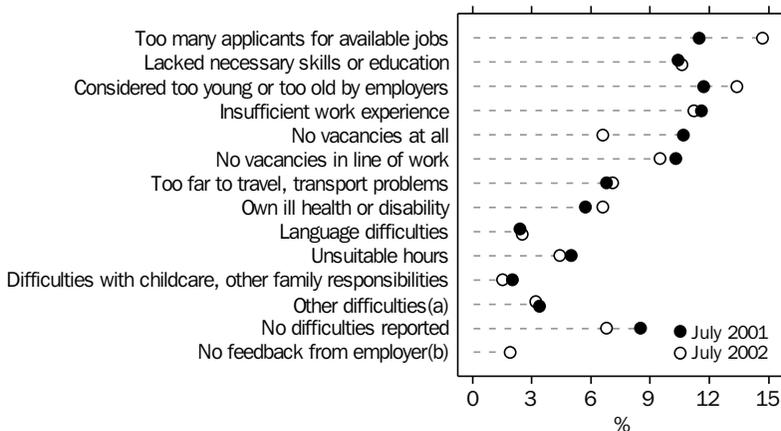
### 6.34 UNEMPLOYED PERSONS, Educational attainment(a) and duration of unemployment — July 2002

Level of highest educational attainment	Units	Duration of current period of unemployment (weeks)					Total(b)	Number(b)
		1 to under 8	8 to under 26	26 to under 52	52 to under 104	104 and over		
Bachelor degree or above	%	41.0	33.8	*9.5	*5.1	*10.5	100.0	47.7
Advanced diploma or diploma	%	35.6	29.6	*8.6	*14.0	*12.3	100.0	31.5
Certificate III / IV	%	26.4	35.5	13.0	14.6	10.7	100.0	65.5
Certificate I / II	%	*21.0	*20.6	*19.8	*20.3	*18.3	100.0	10.4
Certificate not further defined	%	**18.4	**16.7	**25.8	**22.1	**17.0	100.0	*1.7
Year 12(c)	%	37.4	25.2	15.8	9.8	11.7	100.0	123.0
Year 11(c)	%	32.0	30.5	15.4	10.2	11.9	100.0	57.6
Year 10 or below(c)	%	26.9	25.6	15.9	12.9	18.8	100.0	214.0
All unemployed persons	'000	173.5	154.7	80.9	65.1	80.7	—	554.8

(a) The levels of education are not necessarily listed in order from highest to lowest. See paragraphs 15–17 of the Explanatory Notes in 'Education and Work, Australia' (6227.0) for further details on how level of highest educational attainment is determined. (b) Includes no educational attainment, and level not determined. (c) Includes persons who are currently undertaking school study.

Source: *Job Search Experience, Australia, July 2002* (6222.0).

### 6.35 UNEMPLOYED PERSONS, Main difficulty in finding work



(a) Includes persons who reported difficulties because of ethnic background. (b) Response not offered in July 2001.

Source: *Job Search Experience, Australia, July 2002* (6222.0).

### 6.36 UNEMPLOYED PERSONS, Main difficulty in finding work — July 2002

	Units	Males	Females	Persons
Too many applicants for available jobs	%	14.6	14.8	14.7
Lacked necessary skills or education	%	10.6	10.5	10.6
Considered too young or too old by employers	%	13.1	13.7	13.4
Insufficient work experience	%	10.0	12.8	11.2
No vacancies at all	%	7.4	5.5	6.6
No vacancies in line of work	%	11.6	6.7	9.5
Too far to travel, transport problems	%	7.8	6.3	7.1
Own ill health or disability	%	8.4	4.2	6.6
Language difficulties	%	2.4	2.8	2.5
Unsuitable hours	%	1.8	8.0	4.4
Difficulties with childcare, other family responsibilities	%	*0.8	2.3	1.5
Other difficulties(a)	%	2.9	3.6	3.2
No difficulties reported	%	7.2	6.4	6.8
No feedback from employer	%	*1.5	2.5	1.9
Total	%	100.0	100.0	100.0
Number	'000	319.1	235.7	554.8

(a) Includes persons who reported difficulties because of ethnic background.

Source: *Job Search Experience, Australia, July 2002 (6222.0)*.

Males and females reported most of the more common difficulties in largely similar proportions. However, females were more likely to report insufficient work experience as their main difficulty (12.8% compared to 10.0% for males), as well as difficulties that relate to concerns outside of the workplace, such as 'Unsuitable hours' (8.0% to 1.8%) and 'Difficulties with childcare, other family responsibilities' (2.3% to 0.8%). Males were more likely to report their main difficulty as being related to the availability of work, for example, 'No vacancies at all' (7.4% compared to 5.5% for females) and 'No vacancies in line of work' (11.6% compared to 6.7% for females).

### Persons not in the labour force

Persons not in the labour force represent that group of the population who, during the reference week of a Labour Force Survey, are neither employed nor unemployed (diagram 6.2). Interest in this group centres primarily on their potential to participate in the labour force.

There were 3,826,800 persons aged 15–69 years not in the labour force at September 2002 (table 6.37). Some 21% of these persons not in the labour force (808,100) were marginally attached to the labour force. These people wanted to work and were either looking for work but not available to start work in the reference week, or available to start work but not actively looking for work. Of those persons not in the labour force, the proportion of females who were marginally attached (22.3%) was higher than that for males (19.0%). Of the marginally attached, 11.4% of males were actively looking for work compared to 6.6% of females.

In September 2002 there were 78,000 discouraged jobseekers. Discouraged jobseekers are persons who are marginally attached to the labour force, who want to work and are available to start work, but are not actively looking for work as they believe they will not find a job for labour market related reasons. Of males who were marginally attached to the labour force, 9.2% were discouraged jobseekers, compared to 9.8% of females.

### 6.37 CIVILIAN POPULATION AGED 15–69, Labour force status — September 2002

	Males '000	Females '000	Persons '000
<b>Civilian population aged 15–69 years</b>	<b>6 901.1</b>	<b>6 866.9</b>	<b>13 768.1</b>
<i>Persons in the labour force</i>	5 514.0	4 427.2	9 941.2
Employed	5 160.6	4 154.8	9 315.4
Unemployed	353.4	272.4	625.8
<i>Persons not in the labour force</i>	1 387.1	2 439.7	3 826.8
With marginal attachment to the labour force	263.0	545.2	808.1
Wanted to work and were actively looking for work	30.0	36.0	66.0
Were available to start work within four weeks	20.9	23.0	43.9
Were not available to start work within four weeks	9.2	13.0	22.1
Wanted to work but were not actively looking for work and were available to start work within four weeks	232.9	509.2	742.1
Discouraged jobseekers	24.4	53.6	78.0
Other	208.5	455.6	664.1
Without marginal attachment to the labour force	1 124.2	1 894.6	3 018.7
Wanted to work but were not actively looking for work and were not available to start work within four weeks	129.6	231.6	361.2
Did not want to work	894.0	1 607.2	2 501.2

Source: *Persons Not in the Labour Force, Australia, September 2002* (6220.0).

## Underutilised labour

The extent to which the available supply of labour is utilised is an important social and economic issue. The number of unemployed people and the unemployment rate are well known measures of labour underutilisation. In addition to information about unemployment, the ABS provides a wide range of data on available labour resources and the extent of their utilisation. These include data on persons with a marginal attachment to the labour force (in particular, discouraged jobseekers) and persons who are underemployed.

The ABS has developed a series of supplementary measures of labour underutilisation which were formed by grouping information on unemployed persons with that of other groups within the labour market whose labour is underutilised. Table 6.38 shows four measures — the official unemployment rate, the long-term unemployment rate and two supplementary indicators. Concepts and definitions associated with the unemployment rate and the long-term unemployment rate are discussed elsewhere in this chapter.

The labour force underutilisation rate represents the underutilisation of labour *within* the labour force. This is the sum of the number of persons unemployed and those in underemployment, expressed as a proportion of the labour force. Underemployed persons include part-time workers who want and are available to start work with more hours, and full-time workers who worked part-time hours in the reference week for

economic reasons initiated by their employer. In September 2002, there were 574,300 underemployed people in the labour force. The labour force underutilisation rate (incorporating both unemployed and underemployed people) was twice the size of the unemployment rate (12% compared with 6%).

The extended labour force underutilisation rate is the broadest of the ABS measures of underutilised labour. It includes, in addition to the unemployed and underemployed, some people who are not in the labour force, but nevertheless want paid work. They may be looking for work, or share other characteristics of the unemployed, such as being available to start work. People who want to work and meet some, but not all, of the criteria used to determine unemployment in ABS labour force statistics are considered to be marginally attached to the labour force. In September 2002, there were 78,000 people with marginal attachment to the labour force who did not actively look for work for labour market reasons (i.e. were discouraged jobseekers). There were also 43,900 people with marginal attachment to the labour force who were actively looking for work and, while available to start work within four weeks, were not available to start within the survey reference week. The extended labour force underutilisation rate, which combines these 121,900 people together with the unemployed and underemployed, was 13% in September 2002.

Differences in labour underutilisation between states and territories are primarily driven by differences in unemployment rates. In September 2002, Tasmania (16.3%), Queensland (13.2%),

South Australia (12.4%) and Western Australia (12.2%) all had labour force underutilisation rates above the national average (11.9%) (table 6.39).

### 6.38 LABOUR UNDERUTILISATION — September 2002

	Units	Males	Females	Persons
Unemployed	'000	355.5	273.0	628.5
Long-term unemployed	'000	89.5	50.6	140.1
Underemployed	'000	240.3	334.0	574.3
Marginally attached to the labour force(a)				
Actively looking for work, not available in reference week but available to start work within four weeks	'000	20.9	23.0	43.9
Discouraged jobseekers	'000	24.4	53.6	78.0
Labour underutilisation rates				
Long-term unemployment rate(b)	%	1.6	1.1	1.4
Unemployment rate(c)	%	6.3	6.1	6.2
Labour force underutilisation rate(d)	%	10.6	13.6	11.9
Extended labour force underutilisation rate(e)	%	11.4	15.0	13.0

(a) In this table, marginal attachment to the labour force includes only a subset of the groups usually included. (b) The long-term unemployment rate is the long-term unemployed (persons unemployed for 12 months or more) expressed as a proportion of the labour force. (c) The unemployment rate is the unemployed expressed as a proportion of the labour force. (d) The labour force underutilisation rate is the unemployed, plus the underemployed, expressed as a proportion of the labour force. (e) The extended labour force underutilisation rate is the unemployed, plus the underemployed, plus a subset of persons marginally attached to the labour force, expressed as a proportion of the labour force augmented by the marginally attached persons.

Source: Australian Labour Market Statistics, July 2003 (6105.0).

### 6.39 LABOUR UNDERUTILISATION, By states and territories — September 2002

	Long-term unemployment rate(a)	Unemployment rate(b)	Labour force underutilisation rate(c)	Extended labour force underutilisation rate(d)
	%	%	%	%
New South Wales	1.5	6.0	11.7	12.7
Victoria	1.3	6.0	11.1	12.2
Queensland	1.2	6.9	13.2	14.4
South Australia	1.8	6.4	12.4	13.6
Western Australia	1.1	6.3	12.2	13.2
Tasmania	3.1	9.3	16.3	17.8
Northern Territory	0.2	4.0	7.0	7.9
Australian Capital Territory	0.9	4.0	7.9	8.9
<b>Australia</b>	<b>1.4</b>	<b>6.2</b>	<b>11.9</b>	<b>13.0</b>

(a) The long-term unemployment rate is the long-term unemployed (persons unemployed for 12 months or more) expressed as a proportion of the labour force. (b) The unemployment rate is the unemployed expressed as a proportion of the labour force. (c) The labour force underutilisation rate is the unemployed, plus the underemployed, expressed as a proportion of the labour force.

(d) The extended labour force underutilisation rate is the unemployed, plus the underemployed, plus a subset of persons marginally attached to the labour force, expressed as a proportion of the labour force augmented by the marginally attached persons.

Source: Australian Labour Market Statistics, July 2003 (6105.0).

## Volume measures of labour force underutilisation

Labour underutilisation can also be measured in terms of the number of hours (or 'volume') of labour that is underutilised. Such measures may be more relevant for analysing the spare capacity of the labour force than measures based on the number of people whose labour is underutilised. The volume of underutilised labour in the labour force is derived as the number of hours of work sought by unemployed persons plus the number of additional hours of work offered by underemployed workers. The volume labour force underutilisation rate is the ratio of the total volume of underutilised labour in the labour force to the total volume of utilised and underutilised labour in the labour force.

Table 6.40 shows experimental volume measures of labour force underutilisation for September 2002. Separate rates relating to the volume of unemployment and the volume of underemployment can also be calculated from the way the volume labour force underutilisation rate is derived. For all three underutilisation measures (i.e. unemployment, underemployment and labour force underutilisation), the experimental volume rates were lower than the corresponding headcount rates.

## Earnings and benefits

Statistics on earnings are of interest to help evaluate the standard of living of employees, and to make policy decisions regarding income redistribution, social welfare, taxation and wage

fixation. Comprehensive earnings statistics are required by all levels of government, social and labour market analysts, industrial tribunals, trade unions, employer associations, academics and international agencies. Information about the benefits received by workers provides a broader picture of working conditions, and of rewards provided for work done.

The ABS concept of earnings is based on the definition adopted by the twelfth International Conference of Labour Statisticians in 1973. Earnings are considered to be remuneration to employees, for time worked or work done, as well as remuneration for time not worked (e.g. paid annual leave). Many employees also receive other benefits in addition to earnings, including long-service leave and superannuation.

The ABS produces a range of statistics on earnings paid to workers. The quarterly Survey of Average Weekly Earnings (AWE) and the biennial Survey of Employee Earnings and Hours (EEH) both provide a statistical measure of the gross remuneration paid to employees. The EEH survey also provides estimates of earnings for each of the pay setting methods (i.e. awards, individual agreements and collective agreements). The Survey of Employee Earnings, Benefits and Trade Union Membership, which is run annually as a Labour Force Supplementary Survey, provides information about the earnings of employees, as well the number and type of employee benefits received by workers. It does not, however, quantify the value of these benefits.

**6.40 EXPERIMENTAL VOLUME MEASURES(a) OF LABOUR UNDERUTILISATION — September 2002**

	Units	Males	Females	Persons
Volume of potential labour in the labour force				
Unemployed persons (hours of work sought)	'000 hours	12 044.2	7 474.4	19 518.6
Underemployed workers (additional hours of work offered)	'000 hours	4 263.7	4 828.5	9 092.2
Employed persons (usual hours of work performed)(b)	'000 hours	215 668.6	128 503.5	344 172.1
<b>Total</b>	<b>'000 hours</b>	<b>231 976.5</b>	<b>140 806.4</b>	<b>372 782.9</b>
Experimental volume measures of labour force underutilisation				
Volume unemployment rate	%	5.2	5.3	5.2
Volume underemployment rate	%	1.8	3.4	2.4
Volume labour force underutilisation rate	%	7.0	8.7	7.7

(a) Based on the number of hours of work sought and offered. (b) Actual hours worked in the reference week for underemployed full-time workers and usual hours worked for all other employed persons.

Source: *Australian Labour Market Statistics, July 2003 (6105.0)*.

The quarterly Wage Cost Index (WCI) measures the changes to wages and salaries of a representative mix of employee jobs. Unlike the AWE and EEH surveys, the WCI is unaffected by changes in the quantity or quality of work performed. The ABS is currently developing a labour price index, which will also reflect changes in the price of 'non-wage' components (e.g. superannuation and workers' compensation) which contribute to the cost to employers of employing labour. It is expected that the labour price index will be published from late 2004.

### Level of earnings

Data on the level of earnings reflect the variations within different population groups, and across industries and occupations, providing a more detailed picture of their comparative experiences. Differences in earnings are also of interest in reflecting the strength of labour demand and supply.

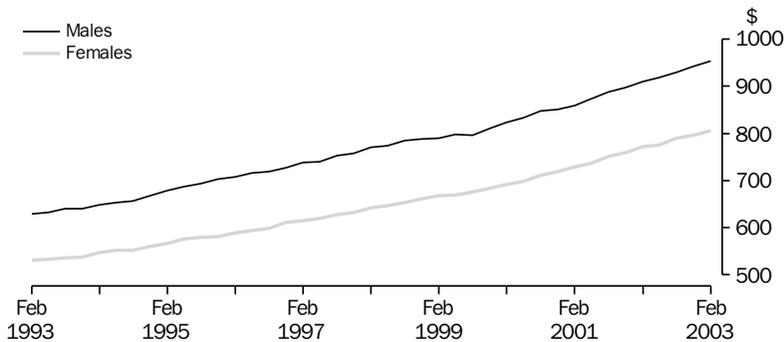
The AWE survey provides an estimate of the gross weekly earnings paid to employees by measuring earnings during a one-week reference period in the middle month of a quarter (excluding irregular earnings not related to the reference period). Data are collected from the payrolls of a sample of employers.

The AWE survey collects three types of earnings data. Average weekly ordinary time earnings for full-time adult employee jobs (commonly referred to as AWOTE) relate 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).

Graph 6.41 shows AWOTE from February 1993 to February 2003. Over the 10-year period, AWOTE for male employees and female employees each increased by 52%, from \$628.60 to \$954.10 for males and from \$530.60 to \$805.50 for females.

Table 6.42 shows that, in February 2003, the difference between male and female average weekly earnings was least for AWOTE (females earned 84% of the male figure of \$954.10) and greatest for all employees total earnings (females earned 65% of the male figure of \$862.60). The latter difference reflects the inclusion of part-time employees, as a higher proportion of female employees work part-time. In February 2003, 45% of female employees worked part-time compared to 14% of male employees.

**6.41 AVERAGE WEEKLY ORDINARY TIME EARNINGS(a)**



(a) For full-time adult employees.

Source: Average Weekly Earnings, Australia (6302.0).

### 6.42 AVERAGE WEEKLY EARNINGS — February 2003

	Males	Females	Persons
	\$	\$	\$
Full-time adult ordinary time earnings	954.10	805.50	900.40
Full-time adult total earnings	1 009.00	819.00	940.30
All employees total earnings	862.60	564.10	717.40

Source: *Average Weekly Earnings, Australia, February 2003* (6302.0).

Table 6.43 presents the male and female AWOTE for full-time adults by state and territory in February 2003. The highest weekly earnings for both males and females was in the Australian

Capital Territory. The lowest weekly earnings for males was in Queensland and the lowest for females was in Tasmania.

Graph 6.44 shows that, in February 2003, the Mining industry recorded the highest AWOTE for full-time adults of \$1,443.90 for males and \$1,054.30 for females. The industries with the lowest average were Accommodation, cafes and restaurants (\$674.30) and Retail trade (\$683.70).

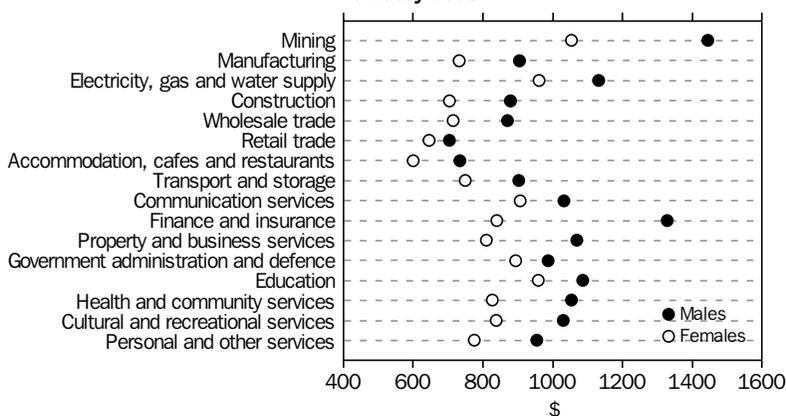
AWOTE for full-time adult females was less than for males in all industries. Full-time adult females earned approximately two-thirds (63%) of male full-time adult ordinary time earnings in the Finance and insurance industry, rising to 92% in the Retail trade industry.

### 6.43 AVERAGE WEEKLY EARNINGS, By state and territory — February 2003

	Full-time adult ordinary time earnings		
	Males	Females	Persons
	\$	\$	\$
New South Wales	1 016.50	842.10	950.90
Victoria	954.20	807.30	902.00
Queensland	856.60	754.50	820.10
South Australia	884.60	781.60	850.90
Western Australia	960.70	752.20	889.30
Tasmania	863.00	748.30	826.00
Northern Territory	936.80	807.90	880.30
Australian Capital Territory	1 122.40	916.10	1 031.80
<b>Australia</b>	<b>954.10</b>	<b>805.50</b>	<b>900.40</b>

Source: *Average Weekly Earnings, Australia, February 2003* (6302.0).

### 6.44 AVERAGE WEEKLY ORDINARY TIME EARNINGS(a), By industry(b) — February 2003



(a) For full-time adult employees. (b) Classified according to the Australian and New Zealand Standard Industrial Classification.

Source: *Average Weekly Earnings, Australia, February 2003* (6302.0).

Data on average weekly earnings are also available from the biennial EEH survey. This survey provides additional classifications of the data, such as category of employee, type of earnings and occupation. Average weekly total earnings for full-time adult employees by occupation for May 2002 are presented in graph 6.45. For both males and females, Elementary clerical, sales and service workers earned the lowest average weekly earnings of all the occupations (\$693.20 for males and \$578.40 for females), whereas the highest earnings were for Managers and administrators (\$1,525.50 for males and \$1,240.00 for females).

Men had higher average earnings than women in each occupation. For full-time adult employees, the proportional difference between male and female average weekly total earnings was smallest for Professionals (average earnings of females were 86% of those of males) and greatest for Intermediate production and transport workers (72%).

### How pay is set

Information on the methods of setting the main part of employees' pay is collected in the biennial EEH survey. Three different methods of setting pay are identified in EEH: awards, collective agreements and individual agreements. Data are

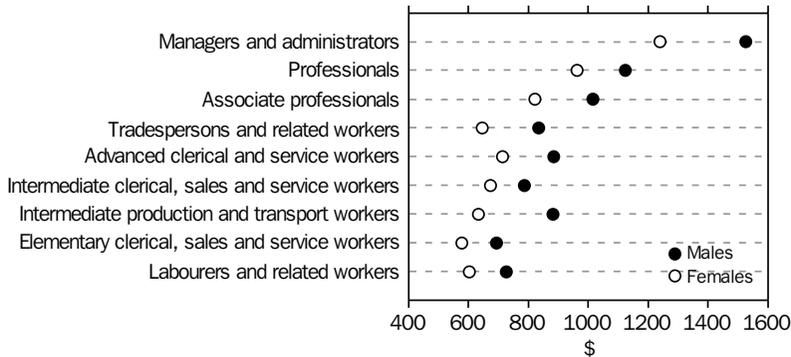
also collected on whether agreements (individual and collective) are certified, approved or registered with an industrial tribunal or authority.

Awards are legally enforceable determinations made by federal or state industrial tribunals that set the terms of employment, including pay. In the EEH survey, employees whose pay is set by an award only are those who have the main part of their pay set by an award and who are not paid more than the award rate of pay.

Collective agreements, which include enterprise and workplace agreements, are arrangements between one or more employers and a group of employees (or associations representing employees) that set the terms of employment, including pay, for a group of employees.

Individual agreements set the terms of employment, including pay, for an individual employee, and are agreed to by the individual. The agreement may be verbal or written. Employees whose pay is set by individual agreements include those who have registered individual agreements, those whose pay is set by an individual common law contract, employees receiving pay at more than the award rate by individual agreement, and working proprietors of incorporated enterprises who set their own rate of pay.

**6.45 AVERAGE WEEKLY TOTAL EARNINGS(a), By occupation(b) — May 2002**



(a) For full-time adult employees. (b) Classified according to the Australian Standard Classification of Occupations.

Source: *Employee Earnings and Hours, Australia, May 2002* (6306.0).

Table 6.46 shows that, in May 2002, the most common method of setting pay was individual agreements (41%), followed by collective agreements (38%) and awards only (20%). Half of all private sector employees had their pay set by individual agreements (50%). In contrast, only 6% of public sector employees had their pay set by individual agreements, with the majority covered by collective agreements (90%). Males were more likely than females to have their pay set by an individual agreement (48% compared to 35%), and less likely than females to have their pay set by an award only (15% compared to 26%). Part of the difference between male and female employees can be attributed to their different occupation and industry mix.

The methods of setting pay varied considerably across occupation groups. Employees in higher skilled occupation groups were more likely to have their pay set by an individual or collective agreement, while employees in lower skilled occupation groups were more likely to have their pay set by an award only (table 6.47). For example, 79% of Managers and administrators had their pay set by an individual agreement while less than 1% had their pay set by award only. In contrast, 23% of Elementary clerical, sales and service workers had their pay set by an individual agreement, while 41% had their pay set by an award only.

#### 6.46 METHODS OF SETTING PAY, By sector and sex — May 2002

	Award only	Collective agreement(a)	Individual agreement(a)	Total
	%	%	%	%
<b>Males</b>				
Private sector	17.7	25.8	56.6	100.0
Public sector	4.0	88.5	7.6	100.0
All sectors	15.1	37.3	47.5	100.0
<b>Females</b>				
Private sector	32.2	24.1	43.7	100.0
Public sector	5.1	90.9	4.0	100.0
All sectors	26.1	39.2	34.7	100.0
<b>Persons</b>				
Private sector	24.6	25.0	50.5	100.0
Public sector	4.6	89.8	5.6	100.0
<b>All sectors</b>	<b>20.5</b>	<b>38.2</b>	<b>41.3</b>	<b>100.0</b>

(a) Includes registered and unregistered agreements.

Source: *Employee Earnings and Hours, Australia, May 2002 (6306.0)*.

#### 6.47 METHODS OF SETTING PAY, By occupation(a) — May 2002

	Award only	Collective agreement(b)	Individual agreement(b)	Total
	%	%	%	%
Managers and administrators	*0.4	20.5	79.1	100.0
Professionals	7.4	55.7	36.9	100.0
Associate professionals	6.1	37.7	56.2	100.0
Tradespersons and related workers	25.7	27.9	46.4	100.0
Advanced clerical and service workers	12.1	24.4	63.4	100.0
Intermediate clerical, sales and service workers	25.2	35.1	39.7	100.0
Intermediate production and transport workers	17.7	46.1	36.2	100.0
Elementary clerical, sales and service workers	41.5	35.2	23.3	100.0
Labourers and related workers	34.4	38.1	27.5	100.0
<b>All occupations</b>	<b>20.5</b>	<b>38.2</b>	<b>41.3</b>	<b>100.0</b>

(a) Classified according to the Australian Standard Classification of Occupations, Second Edition. (b) Includes registered and unregistered agreements.

Source: *Employee Earnings and Hours, Australia, May 2002 (6306.0)*.

The methods of setting pay also varied considerably across industry groups. Table 6.48 shows that, in May 2002, Wholesale trade had the highest proportion of employees whose pay was set by individual agreements (80%), and Government administration and defence had the highest proportion of employees whose pay was set by collective agreements (87%). The Accommodation, cafes and restaurants industry had the highest proportion of employees whose pay was set by award only (61%).

Table 6.49 shows the average weekly total earnings of employees under the different

methods of setting pay. In May 2002, employees whose pay was set by individual agreements earned an average of \$781.70 a week, compared to \$755.40 for employees whose pay was set by collective agreements. The average weekly total earnings of employees whose pay was set by an award only was considerably lower (\$419.90). However, such broad level comparisons can be strongly affected by the association between certain employee characteristics (such as occupation, full-time/part-time status, sex and industry of employment) and the methods used to set pay.

#### 6.48 METHODS OF SETTING PAY, By industry(a) — May 2002

	Award only	Collective agreement(b)	Individual agreement(b)	Total
	%	%	%	%
Mining	**5.9	40.5	53.6	100.0
Manufacturing	12.5	37.5	50.0	100.0
Electricity, gas and water supply	*1.1	78.1	20.9	100.0
Construction	17.1	23.1	59.8	100.0
Wholesale trade	11.7	7.9	80.4	100.0
Retail trade	34.2	30.3	35.4	100.0
Accommodation, cafes and restaurants	61.2	*6.8	32.0	100.0
Transport and storage	16.4	40.3	43.3	100.0
Communication services	*2.4	69.1	28.4	100.0
Finance and insurance	*4.9	50.0	45.1	100.0
Property and business services	18.1	11.7	70.1	100.0
Government administration and defence	6.0	86.6	7.4	100.0
Education	7.8	83.5	8.7	100.0
Health and community services	30.3	49.5	20.1	100.0
Cultural and recreational services	10.9	31.2	57.8	100.0
Personal and other services	22.2	42.6	35.3	100.0
<b>All industries</b>	<b>20.5</b>	<b>38.2</b>	<b>41.3</b>	<b>100.0</b>

(a) Classified according to the Australian and New Zealand Standard Industrial Classification. (b) Includes registered and unregistered agreements.

Source: *Employee Earnings and Hours, Australia, May 2002 (6306.0)*.

#### 6.49 METHODS OF SETTING PAY, Average weekly total earnings — May 2002

	Award only	Collective agreement(a)	Individual agreement(a)	Total
	\$	\$	\$	\$
<b>Males</b>				
Full-time employees	639.00	993.90	977.30	945.20
Part-time employees	300.20	381.30	356.60	347.20
All employees	507.20	888.90	895.20	834.10
<b>Females</b>				
Full-time employees	553.60	836.10	778.20	766.60
Part-time employees	283.00	374.30	338.00	331.30
All employees	366.60	621.90	618.10	554.00
<b>Persons</b>				
Full-time employees	600.30	931.90	910.20	878.40
Part-time employees	287.40	376.20	344.40	335.80
All employees	419.90	755.40	781.70	697.60

(a) Includes registered and unregistered agreements.

Source: *Employee Earnings and Hours, Australia, May 2002 (6306.0)*.

## Changes in the price of labour

Changes in the price of labour are derived from quality adjusted average hourly rates of pay (excluding bonuses) of a representative sample of employee jobs. These data are compiled to form the WCI, which is published by the ABS each quarter. The WCI is a 'pure' price index which measures changes over time in wage and salary costs in the Australian labour market. The WCI is unaffected by changes in the quality and quantity of work performed.

As shown in table 6.50, increases in the indexes for total hourly rates of pay excluding bonuses varied across sectors and across states and territories. In the 12 months to March 2003, public sector wages grew at 4.0% and private sector wages grew at 3.5%. Since the March quarter 2000, the

percentage growth (from the corresponding quarter of the previous year) of public sector wages has been higher than or equal to the growth in private sector wages with the exception of the September quarter 2002.

For the states and territories, the highest annual percentage increase in wages from the March quarter 2002 to the March quarter 2003 was recorded by New South Wales (3.9%) and the lowest was recorded by Tasmania and the Northern Territory (both 3.1%). The Northern Territory recorded the smallest annual growth in the private sector WCI (3.0%), and South Australia the highest (3.8%). In the public sector Tasmania recorded the smallest annual growth (2.9%) and New South Wales the largest (4.9%).

**6.50 TOTAL HOURLY RATES OF PAY EXCLUDING BONUSES, By sector**

State/territory	Index numbers(a)					Percentage change from corresponding quarter of previous year
	March quarter 2002	June quarter 2002	September quarter 2002	December quarter 2002	March quarter 2003	March quarter 2003
<b>PRIVATE</b>						
New South Wales	115.6	116.2	117.9	118.7	119.7	3.5
Victoria	114.9	115.8	117.5	118.4	119.0	3.6
Queensland	113.9	114.4	115.4	116.8	117.5	3.2
South Australia	114.1	114.6	116.3	117.7	118.4	3.8
Western Australia	115.1	115.9	117.8	118.5	119.2	3.6
Tasmania	112.4	112.9	114.4	115.5	115.9	3.1
Northern Territory	112.7	113.1	114.9	115.4	116.1	3.0
Australian Capital Territory	115.0	115.6	117.2	117.8	118.9	3.4
Australia	114.9	115.6	117.2	118.1	118.9	3.5
<b>PUBLIC</b>						
New South Wales	117.9	118.0	119.0	120.0	123.7	4.9
Victoria	115.6	116.9	118.1	119.2	120.0	3.8
Queensland	116.5	117.5	118.7	119.0	120.8	3.7
South Australia	116.8	116.9	118.5	120.4	120.8	3.4
Western Australia	114.5	114.9	116.7	117.3	119.1	4.0
Tasmania	114.5	115.1	116.3	117.6	117.8	2.9
Northern Territory	115.8	115.9	116.7	117.1	119.4	3.1
Australian Capital Territory	113.1	113.5	115.2	116.4	117.6	4.0
Australia	116.4	116.9	118.2	119.1	121.1	4.0
<b>ALL SECTORS</b>						
New South Wales	116.1	116.6	118.2	118.9	120.6	3.9
Victoria	115.0	116.0	117.6	118.5	119.2	3.7
Queensland	114.6	115.2	116.3	117.4	118.4	3.3
South Australia	114.8	115.2	116.9	118.5	119.1	3.7
Western Australia	114.9	115.7	117.6	118.2	119.2	3.7
Tasmania	113.1	113.7	115.0	116.2	116.6	3.1
Northern Territory	113.9	114.1	115.6	116.0	117.4	3.1
Australian Capital Territory	113.8	114.3	116.0	116.9	118.1	3.8
Australia	115.2	115.9	117.4	118.3	119.4	3.6

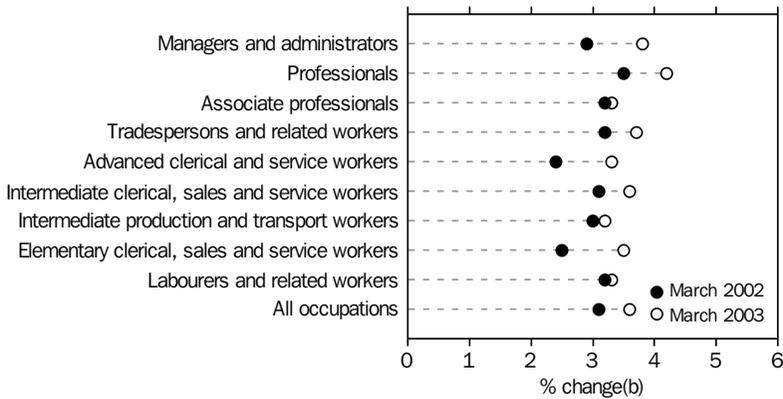
(a) Base of each index: September quarter 1997 = 100.0.

Source: Wage Cost Index, Australia (6345.0).

For Australia, the annual wages growth to March 2003 was greater than the annual growth to March 2002 (3.6% compared to 3.1%). As shown in graph 6.51, the rate of increase in wages across all major occupation groups was greater for the year ending March 2003 than for the year ending March 2002. In both periods, annual wages growth for Professionals (3.5% to March 2002 and 4.2% to March 2003) was greater than that for other major occupation groups. Intermediate production and transport workers recorded the lowest annual growth rate of 3.2% for the year ending March 2003.

Annual growth by industry is shown in graph 6.52. For the 12 months to March 2003, the increases in wages ranged from 1.5% for Communication services to 5.1% for Education. The 5.1% increase for Education is the largest annual movement recorded for this industry since the series commenced in September 1997. The annual growth rate of the WCI was higher to March 2003 than for the previous year for all industries other than Mining, Electricity, gas and water supply, Communication services, Finance and insurance, and Personal and other services, with the rate remaining the same for Property and business services.

**6.51 TOTAL HOURLY RATES OF PAY EXCLUDING BONUSES, By occupation(a)**

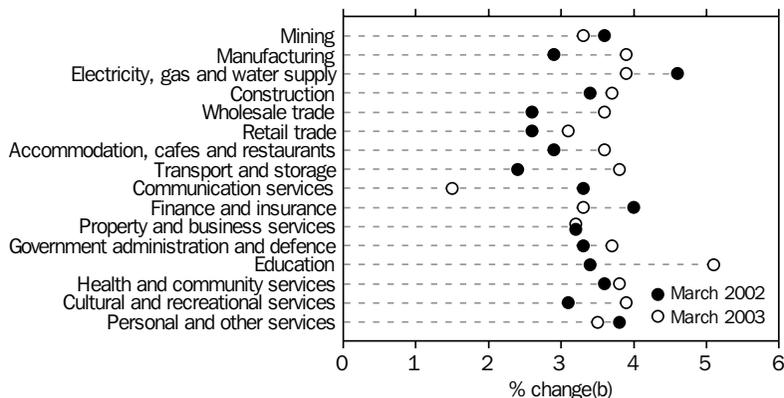


(a) Classified according to the Australian Standard Classification of Occupations.

(b) Percentage change from corresponding quarter of previous year.

Source: *Wage Cost Index, Australia (6345.0)*.

### 6.52 TOTAL HOURLY RATES OF PAY EXCLUDING BONUSES, By industry(a)



(a) Classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC). (b) Percentage change from corresponding quarter of previous year.

Source: Wage Cost Index, Australia (6345.0).

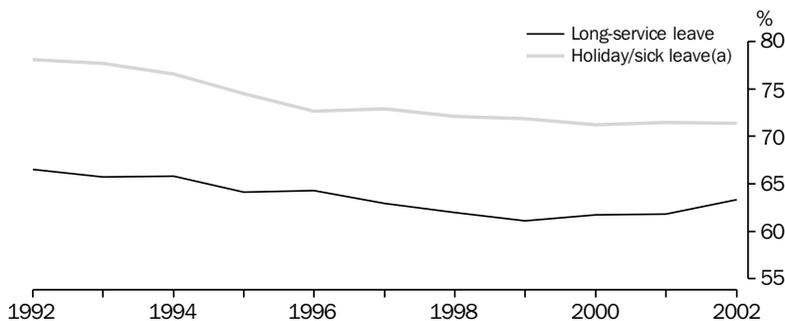
### Non-wage benefits

Types of non-wage benefits received by employees include leave benefits (such as holiday leave, sick leave, long-service leave, maternity/paternity leave), and superannuation. Data on these employment benefits are collected in the ABS Survey of Employee Earnings, Benefits and Trade Union Membership, covering the nature and type (but not value) of benefits.

### Leave benefits

As shown in graph 6.53, the proportion of employees entitled to paid holiday leave or sick leave declined over the period 1992–2002 (from 78% of all employees in 1992 to 71% in 2002), with most of the decline occurring between 1992 and 1996. Entitlement to long-service leave fell between 1992 and 1999 (from 66.5% to 61.1% of all employees), but has since increased to 63.3% in 2002.

### 6.53 EMPLOYEES IN MAIN JOB, By type of standard leave benefit received



(a) Of those persons entitled to paid holiday and/or sick leave, 97% were entitled to both types of leave.

Source: Employee Earnings, Benefits and Trade Union Membership, Australia (6310.0).

Table 6.54 shows the proportion of employees entitled to standard leave benefits by occupation. In August 2002, about three-quarters of male employees were entitled to paid holiday and/or sick leave. More than 80% of males were entitled to holiday and/or sick leave in five occupation groups: Managers and administrators,

Professionals, Associate professionals, Tradespersons and related workers, and Advanced clerical and service workers.

Just over two-thirds (68%) of females were entitled to paid holiday and/or sick leave. For females there were three occupation groups with more than 80% of employees entitled to these leave benefits: Managers and administrators, Professionals and Associate professionals.

#### 6.54 EMPLOYEES IN MAIN JOB, Leave entitlements — August 2002

Occupation(a)	Units	Sick leave and/or holiday leave(b)	Long-service leave
<b>MALES</b>			
Managers and administrators	%	85.1	71.8
Professionals	%	83.9	73.8
Associate professionals	%	83.7	70.5
Tradespersons and related workers	%	83.1	70.4
Advanced clerical and service workers	%	83.3	76.6
Intermediate clerical, sales and service workers	%	79.2	70.8
Intermediate production and transport workers	%	72.9	64.4
Elementary clerical, sales and service workers	%	52.2	41.3
Labourers and related workers	%	56.7	44.8
All occupations	%	76.5	65.4
Total number of employees	'000	3 262.8	2 791.8
<b>FEMALES</b>			
Managers and administrators	%	86.6	75.3
Professionals	%	83.8	78.1
Associate professionals	%	81.8	68.4
Tradespersons and related workers	%	68.6	53.0
Advanced clerical and service workers	%	75.3	64.5
Intermediate clerical, sales and service workers	%	68.1	61.0
Intermediate production and transport workers	%	58.6	53.2
Elementary clerical, sales and service workers	%	41.8	37.2
Labourers and related workers	%	48.2	41.5
All occupations	%	68.4	60.8
Total number of employees	'000	2 503.9	2 226.6
<b>PERSONS</b>			
Managers and administrators	%	85.5	72.6
Professionals	%	83.8	76.0
Associate professionals	%	82.9	69.6
Tradespersons and related workers	%	81.8	68.8
Advanced clerical and service workers	%	76.4	66.8
Intermediate clerical, sales and service workers	%	71.3	63.7
Intermediate production and transport workers	%	71.0	62.9
Elementary clerical, sales and service workers	%	45.5	38.7
Labourers and related workers	%	53.6	43.6
All occupations	%	72.7	63.3
Total number of employees	'000	5 766.7	5 018.4

(a) Classified according to the Australian Standard Classification of Occupations. (b) Of those persons entitled to paid holiday and/or paid sick leave, 97% were entitled to both types of leave.

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2002* (6310.0).

## Superannuation

Under the *Superannuation Guarantee Act* (Cwth) introduced in 1992, employers are obliged to make superannuation contributions on behalf of most employees. This has resulted in an increase in superannuation coverage provided by employers. As shown in graph 6.55, superannuation coverage increased from 80.3% of all employees in August 1992 to 89.9% in August 2002. There are some exempt employees: for example, employers are not obliged to contribute

to superannuation for employees aged less than 18 years who are working not more than 30 hours a week, or for employees on low earnings.

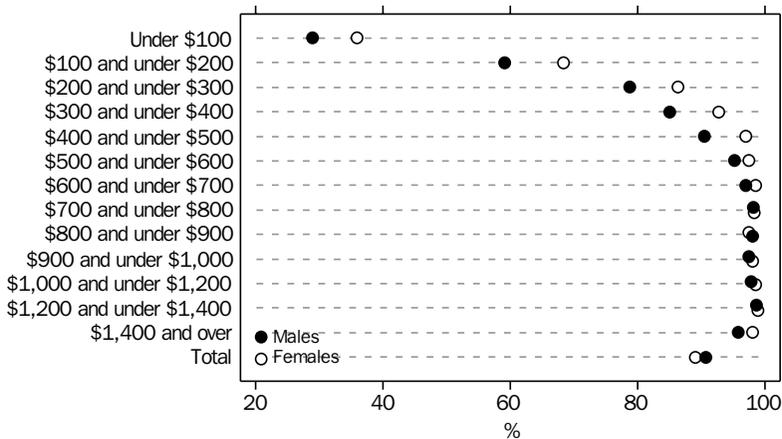
Graph 6.56 shows the proportion of employees entitled to superannuation by earnings group, in August 2002. Overall, the proportion of male and female employees entitled to superannuation was similar (males 90.6%, females 89.1%). In the lower earnings groups, females have higher superannuation coverage than males. In August 2002, 54.6% of female employees earning less than \$200 a week were entitled to superannuation, compared with 43.5% of male employees.

**6.55 EMPLOYEES IN MAIN JOB, Entitled to superannuation**



Source: *Employee Earnings, Benefits and Trade Union Membership, Australia* (6310.0).

**6.56 EMPLOYEES ENTITLED TO SUPERANNUATION IN MAIN JOB, By weekly earnings — August 2002**



Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2002* (6310.0).

Between August 1997 and August 2002, superannuation coverage provided by employers increased across most industries. The largest increase over this period was in Accommodation, cafes and restaurants, rising from 75.9% of all employees in August 1997 to 81.6% in August 2002.

In August 2002, superannuation coverage was highest in Government administration and defence (97.7%). Retail trade and Accommodation, cafes and restaurants had the lowest coverage (77.9% and 81.6% respectively). Retail trade and Accommodation, cafes and restaurants also have the lowest average earnings (graph 6.57 and graph 6.44).

## Industrial relations

Industrial 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. the Australian Industrial Relations Commission).

Historically, governments have regulated the Australian labour market to varying degrees. Changes to the structure or processes underpinning the industrial relations environment have generally followed changes in governments,

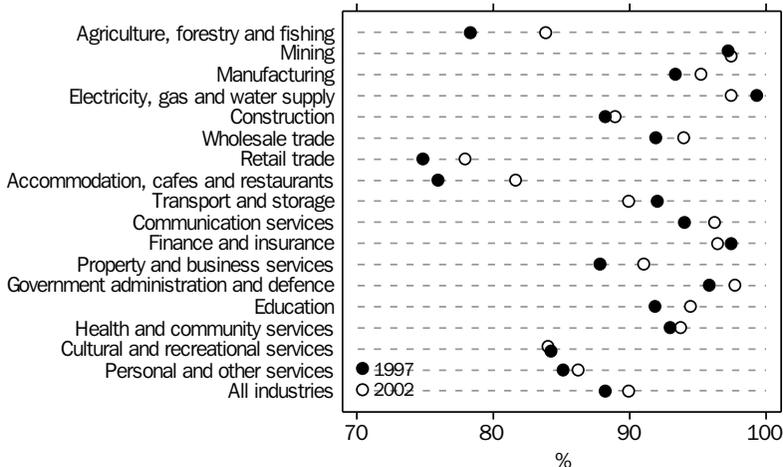
and periods of social or economic change. For most of the last century, employee-employer relationships were shaped by highly centralised Commonwealth and state tribunal-based systems of conciliation and arbitration. However, since the late-1980s, the industrial relations environment in Australia has undergone significant change, and is now characterised by more decentralised arrangements.

The field of industrial 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 industrial relations environment, including industrial disputes, trade union membership, and the methods used for setting pay (i.e. collective agreements, individual agreements and awards) (see *How pay is set* earlier in this chapter).

## Industrial disputes

An industrial dispute is a state of disagreement over a particular issue or group of issues between employees and employers. 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.

**6.57 EMPLOYEES ENTITLED TO SUPERANNUATION IN MAIN JOB, By industry(a)**



(a) Classified according to the Australian and New Zealand Standard Industrial Classification.

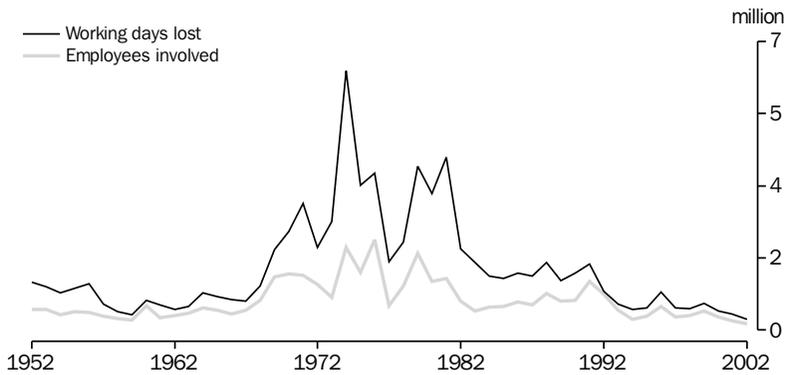
Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2002* (6310.0); *Weekly Earnings of Employees, Australia, August 1997* (6310.0).

This section presents statistics on industrial disputes involving the loss of 10 working days or more at the locations where the stoppages occurred. Working days lost refers to working days lost by workers directly or indirectly involved in disputes at those locations. Directly involved employees are those who actually participated in the dispute, while indirectly involved employees are those who ceased work at the location where the stoppages occurred, but who were not themselves parties to the dispute.

The number of working days lost per year, and the number of employees involved, have fluctuated from year to year, but have demonstrated a significant downward trend over the last two decades (graph 6.58).

Table 6.59 shows that 259,000 working days were lost in 2002, a fall of 34% from 2001. Over the same period the total number of employees involved in industrial disputes fell by 29% to 159,700. While the numbers of working days lost have generally been declining over the last six years, the number of disputes has been increasing. This indicates that the relative size of disputes, in terms of the length of the dispute or the number of employees involved, is decreasing. For example, in 1997 the average number of working days lost per dispute was 1,195, compared to 338 in 2002.

### 6.58 INDUSTRIAL DISPUTES



Source: *Industrial Disputes, Australia (6321.0)*.

### 6.59 INDUSTRIAL DISPUTES

	Disputes no.	Employees involved '000	Working days lost '000	Working days lost per dispute no.
1997	447	315.4	534.2	1 195
1998	519	348.4	526.3	1 014
1999	731	461.1	650.5	890
2000	698	325.4	469.1	672
2001	675	225.7	393.1	582
2002	766	159.7	259.0	338

Source: *Industrial Disputes, Australia (6321.0)*.

Table 6.60 shows that the number of working days lost per thousand employees has generally decreased over the last five years, falling from 75 in 1997 to 32 in 2002. Of the industries shown, Coal mining had the highest number in each year between 1997 and 2002, although the 357 working days lost per thousand employees in 2002 was considerably less than the number in 1997 (4,206). The Construction industry had the second highest number of working days lost per thousand employees in each of these years.

### 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 2002 there were 1,833,700 employees who were trade union members in their main job. As shown in table 6.61, this represents 23.1% of all employees, down from 24.5% in August 2001. The public sector has a

higher rate of unionisation, with 46.5% of employees having trade union membership, compared to 17.7% in the private sector. A higher proportion of males than females are trade union members (24.5% to 21.5%).

Trade union membership in Australia experienced growth throughout much of the 20th century, peaking at 61% in 1962 (graph 6.62). Between 1962 and 1970 trade union membership declined rapidly. This was followed by increasing membership during the 1970s. However, since then the proportion of employees who were 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 labour market, for example, declines in employment levels in traditionally highly unionised industries and the emergence of industries that are not highly unionised.

**6.60 WORKING DAYS LOST PER THOUSAND EMPLOYEES(a)**

Industry	1997 '000	1998 '000	1999 '000	2000 '000	2001 '000	2002 '000
Mining						
Coal	4 206	2 732	1 445	1 933	956	357
Other	19	23	35	60	33	20
Manufacturing						
Metal products; Machinery and equipment	189	71	282	170	258	88
Other	107	106	120	121	148	83
Construction	290	524	381	234	275	220
Transport and storage; Communication services	101	114	42	52	27	37
Education; Health and community services	73	57	165	79	8	3
Other industries(b)	11	7	7	9	7	9
<b>All industries</b>	<b>75</b>	<b>72</b>	<b>87</b>	<b>61</b>	<b>50</b>	<b>32</b>

(a) Classified according to the Australian and New Zealand Standard Industrial Classification. (b) Includes: Agriculture, forestry and fishing; Electricity, gas and water supply; Wholesale trade; Retail trade; Accommodation, cafes and restaurants; Finance and insurance; Property and business services; Government administration and defence; Cultural and recreational services; and Personal and other services.

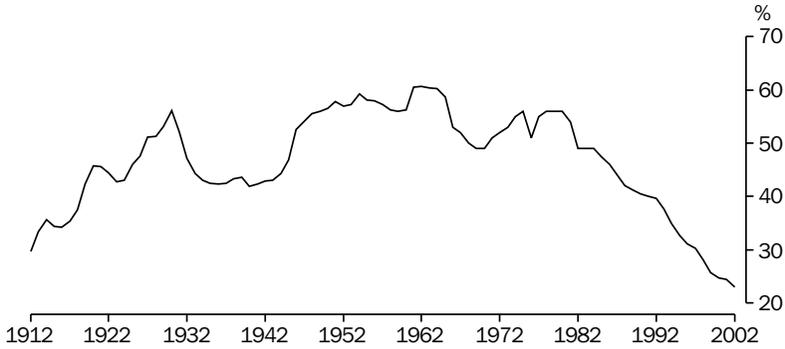
Source: *Industrial Disputes, Australia* (6321.0).

**6.61 TRADE UNION MEMBERSHIP — August 2002**

Sector	Males	Females	Persons
	%	%	%
Public	52.2	41.9	46.5
Private	19.4	15.5	17.7
All sectors	24.5	21.5	23.1

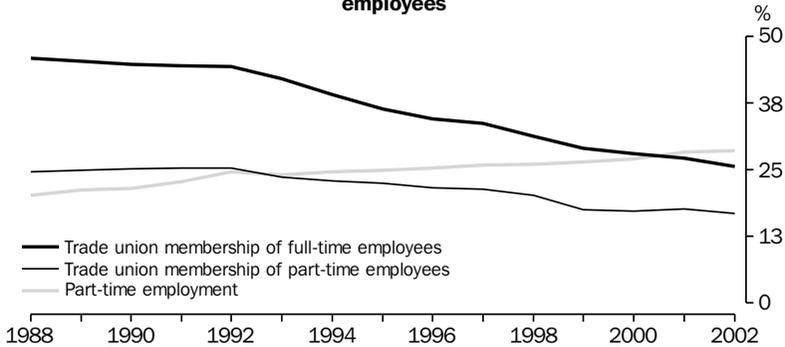
Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2002* (6310.0).

### 6.62 TRADE UNION MEMBERSHIP, Proportion of employees



Source: *Employee Earnings, Benefits and Trade Union Membership, Australia* (6310.0); *Labour Report, 1912–1958*; *Trade Union Members, Australia* (6325.0).

### 6.63 EMPLOYEES WHO WERE TRADE UNION MEMBERS, Full-time and part-time employees



Source: *Employee Earnings, Benefits and Trade Union Membership, Australia* (6310.0); *Labour Force, Australia* (6203.0).

Another factor in the decline in trade union membership is the increases in part-time and casual employment which historically have been less unionised than full-time employment. Graph 6.63 shows that the proportion of part-time employees has increased from 21% in 1989 to 29% in 2002. Over this same period the proportion of full-time and part-time employees who were trade union members has decreased, with trade union membership of full-time employees declining from 45% to 26%, and trade union membership of part-time employees declining from 25% to 17%.

The level of trade union membership varies considerably across industries, with Electricity, gas and water supply (48%), Education (42%) and Government administration and defence (38%)

being the most unionised in 2002 (graph 6.64). The least unionised industries were Agriculture, forestry and fishing (5%), Property and business services (7%) and Wholesale trade (7%).

Between 1997 and 2002, all 17 industries experienced a drop in their rate of unionisation. The largest falls occurred in the more unionised industries, with the proportion of employees who were trade union members in Communication services falling from 60% to 33%, Electricity, gas and water supply from 66% to 48%, Finance and insurance from 36% to 18%, and Mining from 44% to 29%.

While the fall in the proportion of trade union members in Communication services was greater than in Manufacturing, the fall in Manufacturing had a more significant impact on the overall number of trade union members, as Manufacturing has a much higher level of employment.

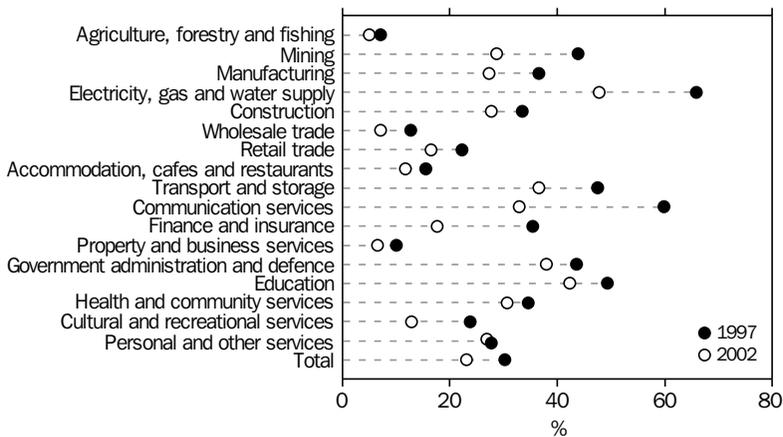
## Job vacancies

Job vacancy statistics can be used to assess changes in the demand for labour. The ABS conducts a quarterly Job Vacancies Survey. In this survey, a job vacancy is defined as a job available

for immediate filling on the survey reference date and for which recruitment action has been taken by the employer.

Graph 6.65 presents trend estimates of job vacancies for the period May 1983 to May 2003. It shows that the number of job vacancies rose from a low of 30,300 in August 1991, reflecting the labour market downturn in the early-1990s, to a peak of 115,000 in May 2000. Job vacancies then fell until November 2001, before rising to 109,400 in May 2003.

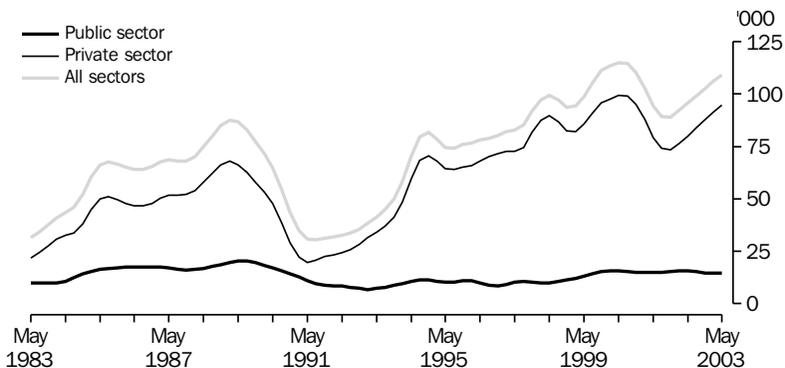
**6.64 EMPLOYEES WHO WERE TRADE UNION MEMBERS, By industry(a)**



(a) Classified according to the Australian and New Zealand Standard Industrial Classification.

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia (6310.0)*.

**6.65 JOB VACANCIES: Trend estimates**



Source: *Job Vacancies, Australia (6354.0)*.

Table 6.66 shows that the number of job vacancies (original estimates) in May 2003 was highest in the Property and business services industry (18,800) followed by Retail trade (18,100) and Health and community services (12,000).

**6.66 JOB VACANCIES, By industry(a) — May**

	1998	1999	2000	2001	2002	2003
	'000	'000	'000	'000	'000	'000
Mining	1.1	1.1	0.8	1.2	1.1	1.1
Manufacturing	9.3	13.7	*14.0	9.6	11.6	10.9
Electricity, gas and water supply	0.2	0.3	0.4	0.3	0.4	0.3
Construction	**8.9	**5.3	*5.2	*4.0	*9.2	*5.5
Wholesale trade	*8.7	*7.6	6.1	*6.9	4.4	*4.1
Retail trade	*14.9	*8.7	8.1	7.6	10.9	18.1
Accommodation, cafes and restaurants	*4.4	*8.6	*8.2	*5.9	*6.3	5.0
Transport and storage	**1.6	**2.6	2.9	1.5	2.4	*1.6
Communication services	0.3	1.4	1.8	0.7	0.4	0.5
Finance and insurance	3.2	3.2	5.6	5.1	4.0	5.0
Property and business services	*24.1	*18.5	21.8	16.5	14.2	*18.8
Government administration and defence	3.9	4.8	5.1	6.1	5.8	4.9
Education	4.0	3.3	7.4	3.9	3.1	5.0
Health and community services	7.8	7.8	9.9	11.2	11.1	12.0
Cultural and recreational services	1.3	*3.4	3.2	3.1	1.9	3.6
Personal and other services	**3.0	**3.0	*7.2	*3.8	*3.5	*3.1
<b>All industries</b>	<b>96.8</b>	<b>93.5</b>	<b>107.6</b>	<b>87.4</b>	<b>90.3</b>	<b>99.5</b>

(a) Classified according to the Australian and New Zealand Standard Industrial Classification.

Source: *Job Vacancies, Australia (6354.0)*.

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- ASCO — Australian Standard Classification of Occupations, Second Edition* (1220.0)
- Australian and New Zealand Standard Industrial Classification (ANZSIC)* (1292.0)
- Australian Labour Market Statistics* (6105.0)
- Average Weekly Earnings, Australia* (6302.0)
- Career Experience, Australia* (6254.0)
- Child Care, Australia* (4402.0)
- Education and Work, Australia* (6227.0)
- Employee Earnings and Hours, Australia* (6306.0)
- Employee Earnings, Benefits and Trade Union Membership, Australia* (6310.0)
- Employer Training Expenditure and Practices, Australia* (6362.0)
- Employment Arrangements and Superannuation, Australia* (6361.0)
- Forms of Employment, Australia* (6359.0)
- Industrial Disputes, Australia* (6321.0)
- Job Search Experience, Australia* (6222.0)
- Job Vacancies, Australia* (6354.0)
- Labour Costs, Australia* (6348.0)
- Labour Force, Australia* (6202.0)
- Labour Force, Australia, Detailed — Electronic Delivery* (6291.0.55.001), available as data cubes and spreadsheets on the ABS web site <<http://www.abs.gov.au>>
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- Labour Statistics: Concepts, Sources and Methods, 2001* (6102.0), available in the Statistical Concepts Library on the ABS web site <<http://www.abs.gov.au>>
- Locations of Work, Australia* (6275.0)
- Persons Not in the Labour Force, Australia* (6220.0)
- Superannuation: Coverage and Financial Characteristics, Australia* (6360.0)
- Underemployed Workers, Australia* (6265.0)
- Wage and Salary Earners, Public Sector, Australia — Electronic Publication* (6248.0.80.001)
- Wage Cost Index, Australia* (6345.0)
- Working Arrangements, Australia* (6342.0)
- Work-Related Injuries, Australia* (6324.0)
- Voluntary Work, Australia* (4441.0)

### Web sites

- Centrelink, <<http://www.centrelink.gov.au>>
- Australian Government, Department of Employment, Workplace Relations (DEWR), <<http://www.dewr.gov.au>>
- International Labour Organisation (ILO), <<http://www.ilo.org>>

# Labour force status of Aboriginal and Torres Strait Islander peoples

The Census of Population and Housing, conducted in August 2001, provides the main source of detailed information on the labour force characteristics of Aboriginal and Torres Strait Islander peoples. This article presents selected census information on the employment (including industry and occupation), and unemployment of Indigenous Australians.

## Overview

Of Indigenous persons aged 15 years and over for whom labour force status was reported in the 2001 census, 52% were reported to be participating in the labour force by being either employed at the time of the census (42% employment to population ratio) or unemployed (10%), while 48% were not in the labour force (table S6.1).

The Indigenous employment to population ratio of 42% includes 7% of Indigenous persons aged 15 years and over who were reported to be employed in Community Development Employment Projects (CDEP), principally in remote areas of Australia.

The unemployment rate for Indigenous persons expresses the number of unemployed persons as a proportion of those Indigenous Australians participating in the labour force.

## Participation in the labour force

The 52% Indigenous participation rate at the time of the 2001 census was about the same proportion as at the 1996 census (53%). The participation rate in 2001 was higher for men (60%) than for women (45%).

**S6.1 SUMMARY LABOUR FORCE INDICATORS, By Remoteness Areas<sup>1</sup> — August 2001**

	Indigenous persons				Non-Indigenous persons			
	Major Cities	Regional(a)	Remote(b)	Australia	Major Cities	Regional(a)	Remote(b)	Australia
	%	%	%	%	%	%	%	%
<b>Participation rate(c)</b>								
Males aged 15–64	67.4	60.9	58.1	62.1	81.5	79.3	87.2	80.9
Females aged 15–64	51.4	46.0	41.8	46.5	66.8	63.5	71.0	65.8
Persons aged 15–64	59.1	53.2	49.8	54.1	74.0	71.4	79.8	73.3
Persons aged 15 and over	57.3	51.3	47.6	52.1	64.3	61.0	73.4	63.4
<b>Unemployment rate</b>								
Males	22.1	26.4	12.7	21.8	7.4	8.5	4.9	7.7
Females	17.7	20.9	10.9	17.6	6.2	7.1	4.0	6.5
Persons	20.1	24.0	11.9	20.0	6.9	7.9	4.5	7.2
<b>Employment to population ratio(c)</b>								
Males	51.2	43.4	48.7	47.0	66.9	63.0	76.8	65.8
Females	40.9	34.9	35.4	36.7	53.3	49.5	62.1	52.2
Persons	45.8	39.0	41.9	41.7	59.9	56.2	70.0	58.9

(a) Combines Inner Regional and Outer Regional areas. (b) Combines Remote and Very Remote areas. (c) Persons whose labour force status is unknown have been excluded from the calculation of rates.

Source: ABS data available on request, 2001 Census of Population and Housing.

The participation rate for non-Indigenous persons aged 15 years and over was 63% in both 2001 and 1996, about 10 percentage points higher than the Indigenous rate. However, these comparisons do not take any account of the different age structures of the Indigenous and non-Indigenous populations. For example, for the non-Indigenous population aged 15 years and over, 16% were aged 65 years and over, while this older age group accounted for only 5% of the Indigenous population aged 15 years and over. The participation rates in this older age group are much lower than the overall participation rates in both the Indigenous and non-Indigenous populations. When the population is restricted to persons aged 15–64 years, the difference in labour force participation rates widens considerably, 54% for Indigenous persons aged 15–64 years compared with 73% for non-Indigenous persons.

For the Indigenous population, the labour force participation rate declined with increasing geographic remoteness.

## Persons not in the labour force

Some people are not actively engaged in the labour market for a variety of reasons, including participation in schooling, age, illness, caring responsibilities and/or lack of labour market

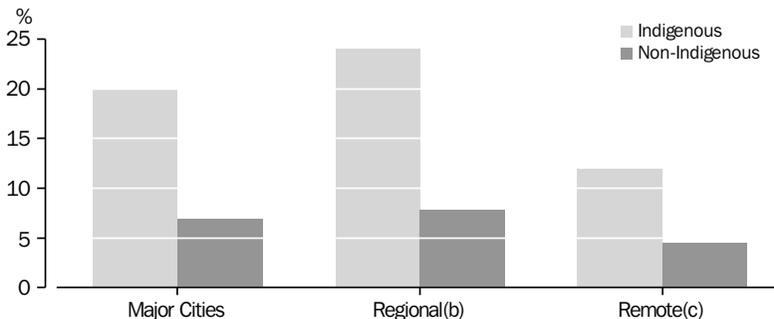
opportunities in their area. The proportion of the population which is not participating in the labour force provides an indicator, beyond the proportion of unemployed persons, of the potential additional workforce in the population. In every age group except young people aged 15–17 years, the proportion of Indigenous persons who were not in the labour force was about 20 percentage points higher than the proportion of non-Indigenous persons.

## Persons unemployed

The 2001 census unemployment rate (the number of people unemployed expressed as a proportion of the total labour force) for Indigenous persons was 20% compared with 23% in 1996. Over three-quarters (78%) of unemployed Indigenous persons were looking for full-time work. Indigenous persons in the labour force were almost three times as likely as non-Indigenous persons to be unemployed.

Indigenous persons living in Regional areas and Major Cities had the highest unemployment rates (24% and 20% respectively) (graph S6.2). The relatively low Indigenous unemployment rate in Remote areas (12%) should be considered in conjunction with low levels of labour force participation, high levels of participation in CDEP, and limited mainstream labour market opportunities.

**S6.2 UNEMPLOYMENT RATES(a), By Remoteness Areas — August 2001**



(a) Persons aged 15 years and over. (b) Combines Inner Regional and Outer Regional areas. (c) Combines Remote and Very Remote areas.

Source: ABS data available on request, 2001 Census of Population and Housing.

Within the Indigenous population, unemployment rates were higher for men (22%) than women (18%) and generally declined with increasing age, consistent with the pattern in the non-Indigenous population. Unemployment rates were comparatively high among young people aged 15–17 years (32%) and 18–24 years (27%). In both these age groups the Indigenous unemployment rate was roughly double the non-Indigenous rate. In the 25–34 years and the 35–44 years age groups the Indigenous unemployment rate was nearly three times the non-Indigenous rate (graph S6.3).

## Persons in employment

The 42% Indigenous employment to population ratio in 2001 is little changed from 41% in 1996. A higher proportion of men (47%) than women (37%) were in employment. The employment to population ratio for non-Indigenous persons was 59% in 2001 and 57% in 1996.

The proportion of Indigenous persons in employment was higher in Major Cities (46%) and lower in Regional (39%) and Remote areas (42%).

## Community Development Employment Projects (CDEP)

The CDEP scheme is a significant feature of labour force participation by Indigenous peoples, particularly, but not exclusively, in sparsely settled regions. The CDEP scheme

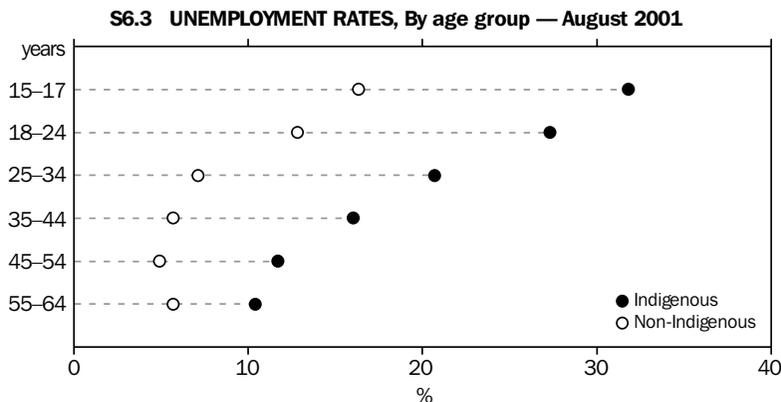
enables members of Aboriginal or Torres Strait Islander communities to work and train in activities managed by local Aboriginal or Torres Strait Islander community organisations, principally in remote areas where the local labour market might not otherwise offer employment opportunities.

CDEP participation is collected in the census only on the Special Indigenous Form used in discrete Aboriginal and Torres Strait Islander communities (where the majority of CDEP employment is located). CDEP participation is not identified on the standard census form completed by Indigenous persons living in urban and regional areas where CDEP schemes are also active. In the 2001 census, 17,800 Indigenous persons were identified as CDEP participants, equivalent to about 60% of the total number of participants (32,000) recorded Australia-wide for administrative purposes at that time.

Of Indigenous CDEP participants identified in the 2001 census, the majority (69%) were in Very Remote areas and a further 10% were in Remote areas.

Compared with all Indigenous persons who were employed, Indigenous persons identified as CDEP participants were:

- twice as likely to report part-time hours (74% compared with 38%)
- more likely to report working in a low skill occupation (79% compared with 60%)
- one-third as likely to report a non-school qualification (9% compared with 29%).



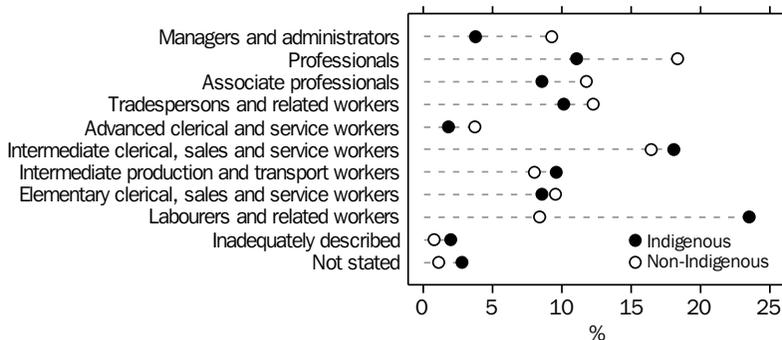
Source: ABS data available on request, 2001 Census of Population and Housing.

## Employment by industry and occupation

The main industries in which Indigenous persons were employed in 2001 were Government administration and defence (20%), Health and community services (12%) and Retail trade (9%). The main industries in which non-Indigenous persons were employed were Retail trade (15%), Manufacturing (12%) and Property and business services (11%).

The main occupation groups for employed Indigenous persons were Labourers and related workers (24%) and Intermediate clerical, sales and service workers (18%), while the main occupation groups for non-Indigenous persons were Professionals (18%) and Intermediate clerical, sales and service workers (16%) (graph S6.4).

**S6.4 EMPLOYED PERSONS(a), By occupation — August 2001**



(a) Persons aged 15 years and over.

Source: *Population Characteristics, Aboriginal and Torres Strait Islander Australians, 2001 (4713.0)*.

## Endnote

1 ABS (Australian Bureau of Statistics) 2001, *Statistical Geography, Volume 1: Australian Standard Geographical Classification (ASGC), 2001*, cat. no. 1216.0, ABS, Canberra.

## References

*Population Characteristics, Aboriginal and Torres Strait Islander Australians, 2001*, cat. no. 4713.0, ABS, Canberra.

## INCOME AND WELFARE

The economic wellbeing or standard of living of individuals is largely dependent on the economic and social resources available to provide for their consumption of goods and services and for participation in society. Such resources may be in the form of cash income received from wages and salaries, investments, income support from government, and the like. Other resources can also contribute to the level of consumption of goods and services, including personal resources such as savings, and other sources of wealth; the resources of government and welfare organisations provide services such as aged care, respite care and child care; and, the resources of family and friends who provide assistance when needed.

Government programs aim to help the economically disadvantaged 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, students, families with children, and Indigenous Australians. Others provide income support for other special groups, such as war veterans, war widows and their families, and students. In addition to providing income security, government programs help those with low incomes to meet specific needs. Assistance is also provided for a range of goods and services through pensioner concession and health cards. Other types of programs aim to provide assistance with employment, and advocacy for people with disabilities.

This chapter provides information on the levels and sources of income of Australia's population and on the levels of wealth. Information is provided on the main income support programs of the Australian Government, describing the eligibility requirements, numbers of beneficiaries and government expenditure on these programs. These topics are covered in the sections: *Income and community support programs* (contributed by the Australian Government Department of Family and Community Services); *Aged care programs* (contributed by the Australian Government Department of Health and Ageing); and *Services provided to veterans and their families* (contributed by the Australian Government Department of Veterans' Affairs).

This chapter contains two articles focusing on Indigenous issues, namely *Incomes of Aboriginal and Torres Strait Islander peoples* and *Strengthening Indigenous families and communities*.

# Household income and wealth

## Income

This section provides indicators of the level and distribution of after tax (disposable) household cash income, after adjusting for household size and composition. The estimates of disposable income are derived from the gross cash income data collected in the 2000–01 Survey of Income and Housing Costs (SIHC), after deducting estimates of income tax liability and the Medicare levy. Gross cash income is defined as regular and recurring cash receipts from:

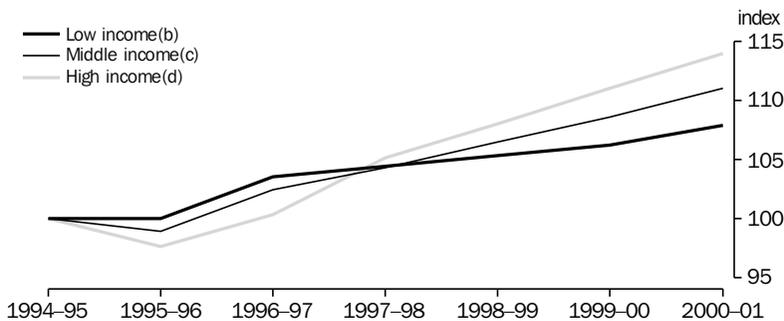
- wages and salaries
- profit or loss from own unincorporated business
- investment income in the form of interest
- rent and dividends
- private transfers in the form of superannuation and child support
- cash transfers from government pensions and allowances.

The restriction to cash incomes is one of practical measurement and is assessed to provide a reasonable, broad picture of the level and distribution of income. However, readers are

advised that the relative mix of cash and non-cash incomes across sub-populations will be different, and can change over time.

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 income estimates are therefore adjusted by an equivalence scale 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 income estimate for any household in this section is expressed as the amount of disposable cash 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 the latter.

**7.1 INDEXES OF REAL MEAN EQUIVALISED DISPOSABLE HOUSEHOLD INCOME(a)**



(a) Base for each index is 1994–95 = 100.0. (b) Persons in the second and third income deciles after being ranked by their equivalised disposable household income. (c) Persons in the fifth and sixth income deciles after being ranked by their equivalised disposable household income. (d) Persons in the ninth and tenth income deciles after being ranked by their equivalised disposable household income.

Note: No survey was conducted in 1998–99. The values shown in the graph for that year are simple interpolations between the survey values for 1997–98 and 1999–2000.

Source: *Household Income and Income Distribution, Australia (6523.0)*.

In 2000–01 there were approximately 18.9 million people living in private dwellings in Australia, up by 7% on the number of people in 1994–95. In real terms, equivalised disposable household income for all people, on average, increased by 12% between 1994–95 and 2000–01, from \$419 to \$469 per week. As illustrated in graph 7.1, over that same period the real mean (or average) income of low income people increased by 8% (from \$227 to \$245 per week), with the increase spread reasonably evenly over the period. The real mean income of middle income and high income people increased by 12% (from \$497 to \$555 per week) and 14% (from \$792 to \$903 per week), respectively.

### Household characteristics

Households with different income levels tend to differ with respect to other characteristics, as shown in table 7.2. Wages and salaries were the principal source of income for households with middle and high income levels, while government pensions and allowances dominated for low income households. However, low income households had the highest incidence of full ownership of their home, reflecting the high proportion of elderly people in the low income category.

Middle income households were larger on average than high income households (2.9 persons compared to 2.5) but contained considerably less earners (1.3 compared to 1.9). Low income households only had an average of 0.3 earners, and an average size of 2.3 persons.

The range of income levels across the population partly reflects the different life stages that people have reached. Of the household composition groups included in table 7.3, younger couples without children show the highest average income. Their mean equivalised disposable household income was \$692 per week, with the average number of earners in the household being 1.8. For couples with dependent children only, and with the eldest child being under five, the average numbers of earners dropped by about one-quarter, to 1.4. Because those households consisted of an average of 3.4 persons, compared to 2.0 in couple only households, their mean equivalised disposable household income of \$466 per week was about one-third lower than the \$692 per week disposable income of the younger couple only households. Mean equivalised disposable incomes were higher for households with non-dependent children, reflecting higher numbers of earners in those households, but were lower for households comprising older couples and lone persons, where the numbers of earners declined substantially.

People aged 65 and over had the lowest mean equivalised disposable household incomes, with lone persons' incomes (\$274 per week), somewhat lower than older couple only household incomes (\$321 per week). Elderly lone persons were more likely than elderly couples to have government pensions and benefits as their principal source of income (79% compared to 72%), while couples were more likely to fully own their home (88% compared to 74%).

## 7.2 HOUSEHOLD CHARACTERISTICS BY INCOME GROUP — 2000–01

	Units	Low income(a)	Middle income(b)	High income(c)
Mean equivalised disposable household income per week	\$	245	413	903
Has PSI of wages and salaries(d)	%	15.2	73.7	87.9
Has PSI of government pensions and allowances(d)	%	75.9	6.1	—
Owns home without a mortgage	%	51.5	38.1	30.4
Owns home with a mortgage	%	15.8	34.8	46.4
Rents from state/territory housing authority	%	8.7	2.3	**0.2
Rents from private landlord	%	19.5	21.3	21.1
Average number of persons in the household	no.	2.3	2.9	2.5
Average number of earners in the household	no.	0.3	1.3	1.9

(a) Persons in the second and third income deciles after being ranked by their equivalised disposable household income.

(b) Persons in the fifth and sixth income deciles after being ranked by their equivalised disposable household income. (c) Persons in the ninth and tenth income deciles after being ranked by their equivalised disposable household income. (d) Principal source of income.

Source: *Household Income and Income Distribution, Australia, 2000–01* (6523.0).

### 7.3 INCOME AND HOUSEHOLD CHARACTERISTICS BY HOUSEHOLD COMPOSITION — 2000–01

Household composition	Average number of persons	Average number of earners	Proportion with govt. benefits as PSI(a)	Mean equivalised disposable household income per week	Proportion owning home without mortgage
	no.	no.	%	\$	%
Lone person aged under 35	1.0	0.8	13.7	513	6.9
Couple only, reference person under 35	2.0	1.8	*2.8	692	6.9
Couple with dependent children only					
Eldest child under 5	3.4	1.4	9.4	466	8.9
Eldest child 5–14	4.2	1.5	9.9	434	20.6
Eldest child 15–24	4.2	1.6	8.1	481	33.0
Couple with					
Dependent and non-dependent children only	4.9	2.4	*6.7	502	39.5
Non-dependent children only	3.3	2.2	11.0	597	61.2
Couple only, reference person 55–64	2.0	0.9	28.2	475	72.6
Couple only, reference person 65 and over	2.0	0.1	71.7	321	88.5
Lone person 65 and over	1.0	—	79.2	274	73.7
One-parent, one-family households with dependent children	3.0	0.7	53.0	329	13.8

(a) Principal source of income.

Source: *Household Income and Income Distribution, Australia, 2000–01 (6523.0)*.

Households comprising one parent with dependent children had a mean equivalised disposable household income of \$329 per week, similar to that of elderly couples (\$321 per week), but only 14% of the one parent households fully owned their home and therefore a substantially greater proportion had to make mortgage or rental payments from their income. Of those households, 53% had government pensions and benefits as their principal source of income.

#### States and territories

There are considerable differences in the average levels of household income per week between the states and territories, with three having mean equivalised disposable household incomes below the national average of \$469 per week (table 7.4). Tasmania's mean weekly income was 17% below the national average income level, followed by South Australia (9% below) and Queensland (6% below). The Northern Territory has the highest mean equivalised disposable household income (34% above the national average). This high income level reflects in part the younger age profile of the Northern Territory. However, it also reflects the exclusion from the results of sparsely settled areas of the Northern Territory which,

if included, would be likely to significantly reduce the mean incomes in the Northern Territory. The Australian Capital Territory recorded the second highest mean equivalised disposable household income (24% above the average), also reflecting in part its relatively younger population. New South Wales and Victoria both recorded mean incomes at 3% above the national average, with Western Australian incomes at about the national level.

There are also considerable differences between the incomes recorded in capital cities in Australia compared to those earned elsewhere. At the national level, mean equivalised disposable household income in the capital cities was 20% above that in the balance (rest) of state. In each state (separate information is not available for the Northern Territory and Australian Capital Territory) the mean incomes in the capital city were above those in the balance of state. The largest difference was recorded for New South Wales where the capital city incomes were 30% above the average incomes across the balance of the state.

### 7.4 HOUSEHOLD INCOME PER WEEK, By state and territory — 2000–01

	NSW	Vic.	Qld	SA	WA	Tas.	NT(a)	ACT(a)	Aust.(a)
<b>CAPITAL CITY</b>									
Gross household income per week									
Mean income	1 191	1 049	928	856	1 033	796	1 353	1 275	1 062
Median income	949	846	787	731	842	652	1 180	1 150	860
Equivalentised disposable household income per week									
Mean income	528	498	456	442	487	421	630	581	499
Median income	460	453	422	392	419	385	547	564	443
<b>BALANCE OF STATE</b>									
Gross household income per week									
Mean income	780	879	846	722	854	686	n.a.	n.a.	816
Median income	621	702	631	539	749	570	n.a.	n.a.	645
Equivalentised disposable household income per week									
Mean income	405	441	426	383	426	369	n.a.	n.a.	416
Median income	351	384	364	320	395	328	n.a.	n.a.	361
<b>ALL HOUSEHOLDS</b>									
Gross household income per week									
Mean income	1 029	1 002	883	822	985	732	1 353	1 275	972
Median income	808	803	701	665	815	612	1 180	1 150	773
Equivalentised disposable household income per week									
Mean income	482	483	439	426	471	391	630	581	469
Median income	423	433	388	368	408	350	547	564	414

(a) Capital city estimates for the NT and ACT relate to total NT excluding sparsely settled areas and total ACT respectively.

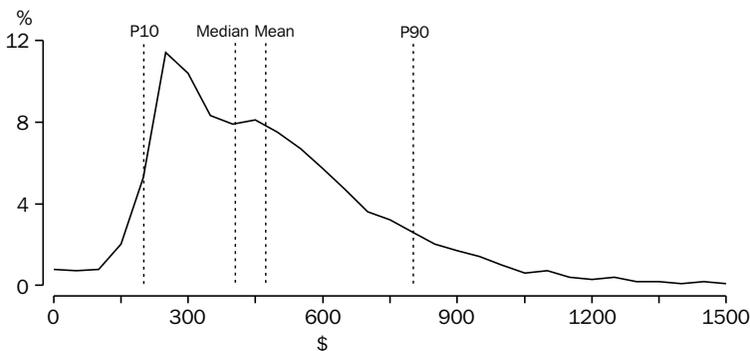
Source: Household Income and Income Distribution, Australia, 2000–01 (6523.0).

### Summary income distribution indicators

While the mean (or average) equivalentised disposable household income of all households in Australia in 2000–01 was \$469 per week, the median (i.e. the midpoint when all people are ranked in ascending order of income) was

somewhat lower at \$414. This difference reflects the typically asymmetric distribution of income where a relatively small number of people have relatively very high household incomes, and a large number of people have relatively lower household incomes, as illustrated in graph 7.5.

### 7.5 DISTRIBUTION OF EQUIVALISED DISPOSABLE HOUSEHOLD WEEKLY INCOME — 2000–01



Note: Income is presented in \$50 ranges.

Source: Household Income and Income Distribution, Australia, 2000–01 (6523.0).

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 the rest) are shown. In 2000–01, P90 was \$802 per week and P10 was \$202 per week, giving a P90/P10 ratio of 3.97. Various percentile ratios for the years 1994–95 to 2000–01 are shown in table 7.6. Changes in these ratios can provide a picture of changing income distribution over time.

Another measure of income distribution is provided by the income shares going to groups of people at different points in the income distribution. The table shows that, in 2000–01, 10.5% of total equivalised disposable household income went to people in the 'low income' group, with 38.5% going to the 'high income' group.

The Gini coefficient is a single statistic that lies between 0 and 1 and is a summary indicator of the degree of inequality of income distribution, with values closer to 0 representing a lesser degree of inequality, and values closer to 1 representing greater inequality. For 2000–01, the Gini coefficient was 0.311. The coefficients for earlier years are shown in table 7.6.

The indicators in table 7.6 are based on data collected in sample surveys, they may differ from the results that would have been obtained from data collected from the whole population. After taking into account the likelihood of such

variability, the extent and pattern of growth in the various indicators suggests some rise in income inequality over the second half of the 1990s.

## Distribution of wealth

There is considerable interest in the composition and distribution of wealth across Australian households, and how this is changing over time. However, distributional wealth data have not been collected in Australia on a regular basis in the past. This section reports the findings of an exploratory study which constructed experimental distributional wealth data for Australia, using modelling techniques. A fuller explanation of the wealth model can be found in *Working Papers in Econometrics and Applied Statistics: No 2002/1 Experimental Estimates of the Distribution of Household Wealth, Australia, 1994–2000* (1351.0).

### The distribution of wealth between different types of households

Average and median household wealth increased as the age of the household reference person increased, peaked in the 55–64 age group, and then declined. This illustrates how households build their wealth while householders are working, then draw upon this wealth in retirement (graph 7.7). As expected, this pattern is different from the distribution of income across age groups, which falls away more rapidly for older households.

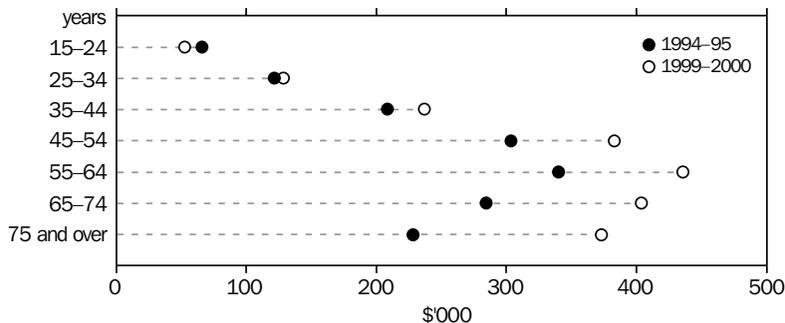
## 7.6 SELECTED INCOME DISTRIBUTION INDICATORS, EQUIVALISED DISPOSABLE HOUSEHOLD INCOME

	Units	1994–95	1995–96	1996–97	1997–98	1999–2000	2000–01
Ratio of incomes of households at top of selected income percentiles							
P90/P10	ratio	3.77	3.74	3.66	3.77	3.89	3.97
P80/P20	ratio	2.56	2.58	2.54	2.56	2.64	2.63
P80/P50	ratio	1.55	1.57	1.56	1.56	1.57	1.56
P20/P50	ratio	0.61	0.61	0.61	0.61	0.59	0.59
Percentage share of total income received by persons with							
Low income(a)	%	10.8	10.9	11.0	10.8	10.5	10.5
Middle income(b)	%	17.7	17.7	17.8	17.6	17.6	17.7
High income(c)	%	37.8	37.3	37.1	37.9	38.4	38.5
Gini coefficient	no.	0.302	0.296	0.292	0.303	0.310	0.311

(a) Persons in the second and third income deciles after being ranked by their equivalised disposable household income. (b) Persons in the fifth and sixth income deciles after being ranked by their equivalised disposable household income. (c) Persons in the ninth and tenth income deciles after being ranked by their equivalised disposable household income.

Source: *Household Income and Income Distribution, Australia, 2000–01* (6523.0).

### 7.7 AVERAGE HOUSEHOLD NET WORTH, By age group(a)



(a) Age of reference person.

Source: *Working Papers in Econometrics and Applied Statistics: No 2002/1 Experimental Estimates of the Distribution of Household Wealth, Australia, 1994-2000 (1351.0)*.

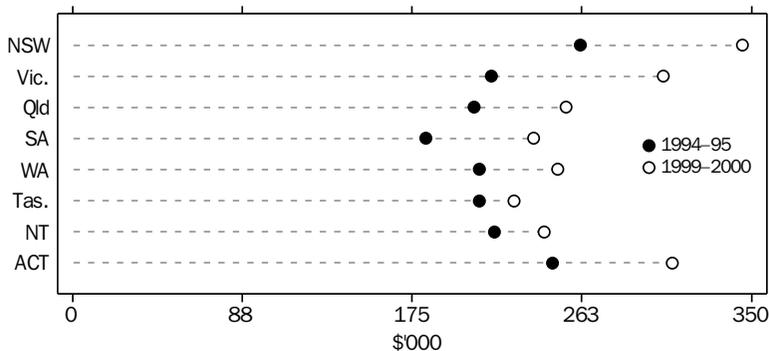
For many households, the major assets are their owner occupied dwelling and their superannuation assets. Growth in the value of these assets led to strong growth in the average wealth of households in middle and older age groups (i.e. those where the age of the reference person is over 44).

The distribution of wealth between different types of households is closely linked to the effects of both age and income level on wealth accumulation. Couple households had higher

average net worth than lone-parent or lone-person households with reference people of a similar age. This is to be expected, as couples may have had access to two incomes for much of their lives.

Average net worth grew in all states and territories between 1994-95 and 1999-2000. Average net worth was highest in New South Wales, where average dwelling values were higher than those in other states (graph 7.8).

### 7.8 AVERAGE HOUSEHOLD NET WORTH, By state and territory



Source: *Working Papers in Econometrics and Applied Statistics: No 2002/1 Experimental Estimates of the Distribution of Household Wealth, Australia, 1994-2000 (1351.0)*.

## Incomes of Aboriginal and Torres Strait Islander peoples

This article presents information on the incomes of Aboriginal and Torres Strait Islander peoples. It is based on the gross (before tax) income of persons aged 15 years and over, as reported in the 1996 and 2001 Censuses of Population and Housing.

Income is reported in 'income ranges' in the census. To create household income estimates, an income value was estimated for each person by assigning them the median value for the reported range, as derived from the 1999–2000 Survey of Income and Housing Costs (SIHC). The estimated values for each person were then aggregated to create household income.

Household income is used to indicate the economic resources available to the members of the household. 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 income estimates are therefore adjusted by an equivalence scale 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 income estimate for any household is expressed as the amount of cash 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 the latter.

In 2001, the mean equivalised gross household income of Indigenous persons was \$364 per week compared to \$585 per week for non-Indigenous persons (table 7.9). The income of Indigenous persons living in major cities was \$435 per week, 20% higher than the mean income for all Indigenous persons. Indigenous incomes in areas designated as 'very remote' average \$267 per week, 27% below the mean

income for all Indigenous persons. For non-Indigenous persons, mean equivalised household incomes in the major cities were also higher than the average for non-Indigenous (\$622 per week compared to \$585 per week). However, for non-Indigenous persons, average incomes were as high in the very remote areas as in the major cities.

An analysis of Indigenous persons in 2001, by income quintiles (table 7.9), shows that 72% of Indigenous persons are within the bottom two income quintiles. Indigenous persons in major cities are more evenly distributed through the income quintiles, although only 9% of Indigenous persons living in major cities have incomes in the highest quintile. In very remote areas, 91% of Indigenous persons are in the bottom two income quintiles.

Graph 7.10 illustrates the difference in income distribution between Indigenous and non-Indigenous persons. The graph shows that a greater proportion of Indigenous persons have income at the lower end of the income distribution. Both income distributions peak at approximately \$250 per week which is close to the average rate of government benefits. However, the proportion of Indigenous people with income around this level is approximately twice as high as the proportion of non-Indigenous persons.

Mean equivalised gross household income of Indigenous persons grew by 11% over the period, from \$329 per week to \$364 per week (table 7.11). Non-Indigenous incomes grew by 13%, between 1996 and 2001, slightly more than Indigenous incomes. The proportion of Indigenous persons in the bottom income quintile increased from 42% to 45%, with decreases in all other quintiles.

## 7.9 GROSS HOUSEHOLD WEEKLY INCOME DISTRIBUTION, By Remoteness Area(a)

	1996						2001	
	Units	Total(b)	Major Cities	Inner Regional	Outer Regional	Remote	Very Remote	Total
Mean equivalised gross household weekly income								
Indigenous	\$	329	435	360	352	356	267	364
Non-Indigenous	\$	517	622	506	502	579	622	585
All persons	\$	513	618	501	494	554	453	579
Income quintiles(c)								
Indigenous								
Lowest quintile	%	42.1	35.2	43.5	44.9	46.1	63.2	45.0
Second quintile	%	27.5	24.9	28.8	28.4	27.3	28.0	27.2
Third quintile	%	15.7	17.0	14.5	14.6	12.9	5.4	13.5
Fourth quintile	%	9.1	13.5	8.7	8.3	8.5	2.3	8.9
Highest quintile	%	5.6	9.5	4.4	3.9	5.2	1.1	5.3
All persons	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Non-Indigenous								
Lowest quintile	%	19.4	17.2	23.4	25.1	21.6	18.0	19.3
Second quintile	%	19.8	17.9	24.2	23.7	18.9	17.4	19.8
Third quintile	%	20.0	19.7	21.4	20.6	19.1	19.1	20.1
Fourth quintile	%	20.1	21.5	18.3	17.6	19.8	21.0	20.4
Highest quintile	%	20.7	23.7	12.8	13.0	20.7	24.5	20.3
All persons	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All persons								
Lowest quintile	%	20.0	17.6	24.0	26.2	24.3	39.5	20.1
Second quintile	%	20.0	18.0	24.3	23.9	19.8	22.4	20.0
Third quintile	%	19.9	19.7	21.2	20.3	18.4	12.6	20.0
Fourth quintile	%	19.8	21.3	18.0	17.1	18.5	12.1	20.1
Highest quintile	%	20.3	23.4	12.5	12.5	18.9	13.3	19.9
All persons	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of persons in private dwellings for census								
Indigenous	no.	1 911 909	114 213	75 599	84 160	30 847	66 744	371 563
Non-Indigenous	no.	14 483 693	11 203 175	3 416 649	1 642 157	236 503	71 997	16 570 481

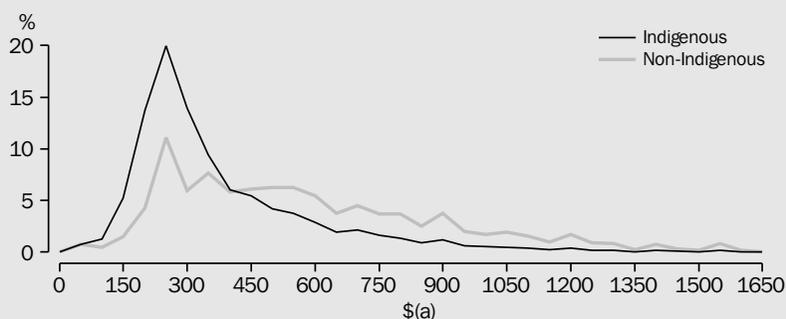
(a) See 'Statistical Geography, Volume 1, Australian Standard Geographical Classification (ASGC), 2001' (1216.0). (b) Data in this table for 1996 are expressed in 2001 prices, using movements in the Consumer Price Index. (c) Income quintiles are formed by ranking all persons in ascending order of household income and then dividing the population into five equally sized groups, each containing 20% of the persons in the population.

Source: ABS data available on request, 1996 and 2001 Censuses of Population and Housing.

Table 7.11 provides details of the mean equivalised gross household income per week levels of Indigenous persons across the states and territories of Australia. The mean equivalised gross household income of Indigenous persons in the Northern Territory was \$288 per week, 21% below the Indigenous national mean income level of \$364 per week. Two other states had Indigenous incomes below the national average: Western Australia at \$344 per week (6% below) and South Australia at \$351 per week (4% below).

The Australian Capital Territory had the highest mean income for Indigenous persons at \$559 per week, 54% above the Indigenous national average. Victoria recorded the second highest mean income for Indigenous persons at \$415 per week, 14% above the average; New South Wales recorded the third highest average income for Indigenous persons at \$387 per week, 6% above the average; with Tasmania and Queensland incomes at about the national average.

### 7.10 DISTRIBUTION OF EQUIVALISED GROSS HOUSEHOLD WEEKLY INCOME — 2001



(a) Data are presented in \$50 income ranges.

Source: ABS data available on request, 2001 Census of Population and Housing.

### 7.11 MEAN EQUIVALISED GROSS HOUSEHOLD WEEKLY INCOME, By Remoteness Area(a)

	1996						2001
	Total(b)	Major Cities	Inner Regional	Outer Regional	Remote	Very Remote	Total
	\$	\$	\$	\$	\$	\$	\$
<b>INDIGENOUS</b>							
New South Wales	344	450	357	318	314	305	387
Victoria	365	468	373	336	283	n.a.	415
Queensland	332	426	351	358	365	309	368
South Australia	316	387	370	322	382	279	351
Western Australia	317	388	360	346	387	271	344
Tasmania	348	n.a.	382	375	371	396	379
Northern Territory	266	n.a.	n.a.	425	341	241	288
Australian Capital Territory	463	560	n.p.	n.a.	n.a.	n.a.	559
<b>Total</b>	<b>329</b>	<b>435</b>	<b>360</b>	<b>352</b>	<b>356</b>	<b>267</b>	<b>364</b>
<b>NON-INDIGENOUS</b>							
New South Wales	543	658	514	463	507	527	614
Victoria	513	620	507	475	463	n.a.	589
Queensland	492	582	485	631	597	578	549
South Australia	469	552	500	479	509	468	535
Western Australia	525	588	522	523	607	704	576
Tasmania	442	n.a.	516	444	456	528	491
Northern Territory	618	n.a.	n.a.	685	700	760	694
Australian Capital Territory	648	748	672	n.a.	n.a.	n.a.	748
<b>Total</b>	<b>517</b>	<b>622</b>	<b>506</b>	<b>502</b>	<b>579</b>	<b>622</b>	<b>585</b>
<b>ALL PERSONS</b>							
New South Wales	537	654	509	455	476	472	608
Victoria	510	618	505	472	461	n.a.	586
Queensland	486	579	481	520	570	481	542
South Australia	466	549	497	473	505	404	531
Western Australia	518	584	518	514	586	524	568
Tasmania	438	n.a.	511	439	451	517	486
Northern Territory	523	n.a.	n.a.	661	620	364	579
Australian Capital Territory	645	744	669	n.p.	n.p.	n.a.	744
<b>Total</b>	<b>513</b>	<b>618</b>	<b>501</b>	<b>494</b>	<b>554</b>	<b>453</b>	<b>579</b>

(a) See 'Statistical Geography, Volume 1, Australian Standard Geographical Classification (ASGC), 2001' (1216.0). (b) Data in this table for 1996 are expressed in 2001 prices, using movements in the Consumer Price Index.

Source: ABS data available on request, 1996 and 2001 Censuses of Population and Housing.

Analysing the ratio of Indigenous to non-Indigenous mean equivalised gross household income per week by Remoteness Area, highlights that very remote areas had the lowest ratio of Indigenous to non-Indigenous incomes with Indigenous persons receiving 43% of the level of non-Indigenous income. Within very remote areas, Northern Territory has the lowest ratio of Indigenous and non-Indigenous incomes (32%) followed by Western Australia (39%).

At the state and territory level, Tasmania had the highest Indigenous to non-Indigenous income ratio, with Indigenous incomes being 77% of the

income of non-Indigenous persons. The Australian Capital Territory followed closely with Indigenous incomes at 75% of the non-Indigenous income. The Northern Territory had the lowest ratio, where Indigenous income was 42% of the incomes of non-Indigenous persons. Western Australia had the second lowest mean Indigenous income level with an Indigenous to non-Indigenous income ratio of 60%.

Between 1996 and 2001, the Australian Capital Territory had the highest real mean income growth for Indigenous persons (21%), followed by Victoria (14%) and New South Wales (13%).

## Income and community support programs

*This section was contributed by the Australian Government Department of Family and Community Services.*

The Australian income support system, administered by the Australian Government Department of Family and Community Services (FaCS), provides financial assistance to a variety of groups, including families, job seekers, the aged, people with a disability, carers, mature age people, students and Indigenous Australians. Over 4 million individuals are direct beneficiaries of the FaCS portfolio's income support payments at any one time. In June 2003, 1.8 million families with more than 3.5 million children were receiving fortnightly family payments through the Family Tax Benefit. Recent and ongoing reforms to the income support system in Australia aim to improve social and economic participation while retaining a strong and effective safety net for people unable to support themselves.

The main income support payments provided by the Australian (Commonwealth) Government for the financial years 1999–2000 to 2002–03 are listed in table 7.12. Details of the payments in effect in the 2002–03 financial years, together with associated statistics, are presented in this chapter.

Most allowance types are adjusted once or twice a year in line with movements in the Consumer Price Index (CPI) to maintain purchasing power. Pension payments are adjusted in line with the CPI and male total average weekly earnings, ensuring

the single pension rate does not fall below 25% of male total average weekly earnings. Many income support payments are subject to income, assets and activity tests, to ensure benefits are targeted to those in greatest need. Details of the rates in effect at 30 June 2003 are listed in table 7.13.

Since September 1997, Centrelink has delivered most income support payments on behalf of FaCS. Centrelink is a statutory agency established to deliver a range of Australian Government services to the Australian community. It operates under the *Services Delivery Agency Act 1997* (Cwlth). Centrelink provides advice about payment entitlements, provides referrals to Centrelink specialist staff for additional assistance, and may refer customers to other departments, agencies or community organisations where appropriate. The Department of Veterans Affairs delivers the Service Pension to eligible veterans and their families.

Numbers of income support customers referred to in this section generally relate to June of the reference year. These numbers are taken from extracts of administrative data as close to 30 June as possible. The dates of extracts, however, can vary between payment types. All financial data refers to the full financial year.

In July 2002, FaCS introduced a new method to more accurately measure the number of people receiving labour market and related allowance payments. Under the new method, eligibility and entitlement determine whether a customer is included in the count, not whether payment is actually made. This method is simpler and more consistent with the way Pension and Parenting customers are counted.

## 7.12 INCOME SUPPORT PAYMENTS(a)(b)

	1999-2000	2000-01	2001-02	2002-03
	\$'000	\$'000	\$'000	\$'000
Family assistance				
Family Allowance(c)	6 573 857	-39 532	-37 291	-1 306
Family Tax Payment(c)	531 927	-2 286	-3 348	-2 620
Family Tax Benefit(c)	—	10 076 463	10 927 703	10 473 856
Maternity Allowance(d)	195 809	217 899	216 887	216 634
Double Orphan Pension	1 779	1 977	1 976	2 052
Youth and student support				
Youth Allowance	2 002 830	2 101 915	2 213 719	2 235 020
Austudy	253 870	249 258	280 794	270 623
Student Financial Supplement	290 681	161 510	500 967	114 359
Fares Allowance	569	644	525	1 304
Child care support				
Child Care Benefit(e)	—	1 037 137	1 315 912	1 364 358
Child Care Cash Rebate(e)	164 447	-14 597	63	20
Child Care for eligible parents undergoing training(f)	11 050	7 301	11 067	12 985
Labour market assistance				
Newstart Allowance	4 954 450	4 918 349	5 078 220	4 831 069
Parenting Payment	5 494 230	5 325 681	5 571 718	5 731 117
Mature Age Allowance	367 250	352 596	364 210	381 155
Partner Allowance	646 460	728 679	817 599	860 768
Widow Allowance	270 825	324 919	389 550	429 662
Bereavement Allowance	782	719	813	986
Pensioner Education Supplement	49 571	58 248	65 784	68 574
Special Benefits	98 704	114 778	119 811	116 286
Support for people with a disability				
Disability Support Pension	5 238 449	5 849 799	6 404 351	6 851 608
Mobility Allowance	53 379	59 367	67 852	74 975
Wife Pension (DSP)	486 740	446 564	401 969	351 491
Sickness Allowance	90 575	95 554	93 724	85 528
Support for carers				
Carer Payment	369 723	480 944	595 810	702 649
Carer Allowance(g)	412 334	533 247	645 722	744 488
Support for the aged				
Age Pension	14 037 940	15 616 477	16 665 653	17 740 214
Aged Persons Savings Bonus	—	1 581 231	23 723	-144
One-off Payment to Seniors(h)	—	536 581	(f)10 454	-2
Self Funded Retirees' Supplementary Bonus	—	582 828	28 519	569
Telephone allowance for Commonwealth Seniors Health Card Holders	—	—	8 668	11 668
Widow Class B Pension	89 849	84 296	59 787	39 804
Wife Pension (age)	240 751	233 080	216 160	195 071
<b>Total Special Appropriations(i)</b>	<b>42 926 761</b>	<b>51 753 433</b>	<b>53 118 246</b>	<b>53 891 837</b>

(a) Outlays on Pensions, Allowances and Family Tax Benefits include expenditure on rent assistance. Details of rent assistance are included in 'Chapter 8, Housing'. (b) Negative values are recoveries from previous years. (c) Family tax benefit replaced Family Allowance and Family Tax Payment on 1 July 2000. (d) Maternity Allowance includes Maternity Immunisation Allowance. (e) Child Care Benefit commenced on 1 July 2000 and incorporated the Child Care Cash Rebate. (f) Not included in the Special Appropriations total as they are Other Administered Expenses. (g) Carer allowance was introduced on 1 July 1999. It combined Child Disability Allowance with Domiciliary Nursing Care Benefit, which was the responsibility of the Department of Health and Ageing. (h) Program included both an annual and a special appropriation. Program now ceased and recoveries relate to the annual appropriation (i) Components do not add to total as some minor allowances and appropriation adjustments are excluded.

Source: Department of Family and Community Services.

**7.13 MAXIMUM RATES FOR INCOME SUPPORT  
PAYMENTS AND BENEFITS  
— 30 June 2003**

	\$
Age Pension(a)	
Single	440.30
Couple(b)	367.50
Age Pension Savings Bonus	variable
Austudy(a)	
Single or partnered, no children	310.10
Single, with children	406.40
Partnered, with children	340.60
Bereavement Allowance(c)	440.30
Carer Allowance(a)	87.70
Child Care Benefit	
Approved care(d)	
Non-school age child	2.74
School age child	2.33
Registered care(d)	
Non-school age child	0.46
School age child	0.39
Disability Support Pension(a)	
Single	440.30
Couple(b)	367.50
Double Orphan Pension(a)	44.00
Education Entry Payment(e)	208.00
Family Tax Benefit Part A(a)	
For each dependent child	
Aged under 13 years	130.48
Aged 13–15 years	165.48
Aged 16–17 years	42.00
Aged 18–24 years	56.42
Family Tax Benefit Part B(a)	
Age of youngest child	
Aged under 5 years	112.00
Aged 5–15 years	78.12
Aged 16–18 years and full-time students	78.12
Maternity Allowance One-off lump sum, per birth	822.72
Maternity Immunisation Allowance One-off lump sum	208.00
Mobility Allowance	66.20
Newstart Allowance(a)	
Single	
Aged 21 or over, no children	380.10
Aged 21 or over, with children	411.10
Aged 60 or over, after 9 months	416.90
Partnered(b)	342.80
Parenting Payment(a)	
Sole parents	440.30
Partnered parents	342.80
Partner Allowance(a)	342.80
For footnotes see end of table.	...continued

**7.13 MAXIMUM RATES FOR INCOME SUPPORT  
PAYMENTS AND BENEFITS  
— 30 June 2003 — continued**

	\$
Pensioner Education Supplement(a)	
At least 50% study load	62.40
At least 25% study load	31.20
Student Financial Supplement Scheme	
Maximum loan, per year	7 000.00
Youth Allowance(a)	
Single, no children	
Aged under 18 years, at home	169.70
Aged 18 years and over, at home	204.20
Away from home	310.10
Single with children	406.40
Partnered with no children	310.10
Partnered with children	340.60

(a) Per fortnight. (b) Each. (c) Per fortnight for a maximum of seven fortnights. (d) Per hour. (e) One-off.

Note: For Carer Payment, Widow Class B Pension, Wife Pension (Age) and Wife Pension (DSP) see Age Pension. For Mature Age Allowance, Sickness Allowance, Widow Allowance see Newstart Allowance. Special Payment generally as for Newstart/Youth Allowance.

Source: Centrelink.

The change increased the count of Newstart Allowance customers by around 4%, Youth Allowance (other) by around 7% and other allowance payments, such as Partner Allowance and Widow Allowance, by around 1%. The allowance customer numbers in this chapter have been updated and are consistent with this new methodology.

## Income support programs

### Family assistance

Family assistance policies are formulated to provide income support to families to assist with the costs of raising children, including newborns, in a way that recognises the needs and choices of both single and dual income families.

Family Tax Benefit Part A helps people with the cost of raising dependent children. It is paid to families with children up to 21 years and young people between 21 and 24 who are studying full-time (and not receiving Youth Allowance or a similar payment).

Family Tax Benefit Part B provides extra assistance for families with only one main income earner, particularly those with children under 5. It is paid to families for children up to the age of 16 and children aged between 16 and 18 years who are studying full-time.

As at end of June 2003, Centrelink paid fortnightly instalments for Family Tax Benefit Part A to 1.8 million families to provide support for 3.5 million children, and Family Tax Benefit Part B was paid to 1.2 million families to provide support for 2.3 million children.

Both payments are administered by the Family Assistance Office and are available as a direct payment from Centrelink, either fortnightly or as a lump sum, or via tax instalment deductions or an end of year lump sum payment through the tax system. Some Family Tax Benefit recipients can receive fortnightly payments for part of the tax year with the balance as a lump sum at the end of the tax year. Both payments are subject to income tests.

Maternity Allowance is a one-off lump sum paid at around the time of the birth of a baby, designed to help meet the costs associated with the birth. Claimants must be eligible for Family Tax Benefit Part A. There is also a Maternity Immunisation one-off payment. To be eligible for this, claimants must have been paid Maternity Allowance or be eligible for Family Tax Benefit Part A.

Double Orphan Pension is not means tested and is a payment for children who have at least one deceased parent and who cannot have contact with the other parent (e.g., because that parent is a long-term prisoner or their whereabouts is unknown).

Table 7.14 shows the number of recipients and expenditure for Family Assistance.

#### 7.14 RECIPIENTS AND EXPENDITURE FOR FAMILY ASSISTANCE

	Units	2000-01	2001-02	2002-03
Family Tax Benefit				
Centrelink				
Recipients(a)				
Part A — fortnightly instalments(b)	no.	1 801 285	1 795 355	1 785 123
Part B — fortnightly instalments(b)	no.	1 181 069	1 199 233	1 223 572
Lump sum payments(c)	no.	n.a.	40 319	59 323
Claims lodged with ATO but paid by Centrelink	no.	n.a.	16 792	14 016
Total payments (Part A and Part B)(d)	\$'000	10 076 463	10 927 703	10 473 856
Australian Taxation Office				
Recipients(a)				
Paid by tax instalment deduction or on assessment	no.	n.a.	80 326	83 762
Payments				
Paid by tax instalment deduction or on assessment(e)	\$'000	(f)11 000	171 380	193 796
Reconciliation credits(e)	\$'000	n.a.	164 570	217 975
Maternity Allowance				
Recipients	no.	210 120	212 237	207 029
Payments(d)(g)	\$'000	217 899	216 887	216 634
Maternity Immunisation Allowance				
Recipients	no.	203 939	206 803	203 900
Payments(d)(g)	\$'000	n.a.	n.a.	n.a.
Double Orphan Pension				
Recipients	no.	1 242	1 207	1 137
Payments(d)	\$'000	1 977	1 976	2 052

(a) Recipients who claimed assistance using more than one payment method for the year are included in each category.

(b) Number of recipients at 30 June. (c) Includes recipients of Family Tax Benefits reconciliation credits. 2001-02 figures refer to total payments made in the 2001-02 tax year for the 2000-01 tax year. 2002-03 figures refer to total payments made in the 2002-03 tax year for the 2001-02 tax year. FTB lump sum payment commenced in 2001-02. (d) Expenditure refers to total payments in the year ending 30 June. (e) Data are presented on an accruals accounting basis. Most Australian Taxation Office payments of Family Tax Benefit are paid on assessment of taxation returns. Thus, most payments made in 2002-03 relate to the taxpayer's entitlements for the previous financial year. (f) Estimated. (g) Separate expenditure figures are not available for Maternity Allowance and Maternity Immunisation Allowance.

Source: Department of Family and Community Services; Department of the Treasury.

## Youth and student support

Youth and student support policy is aimed at promoting a family orientation in developing youth policy. It is formulated to help low- to middle-income families by providing income support for young people undertaking education or training or seeking work. The policy is also trying to develop new partnership arrangements within and across levels of government and with community organisations to support innovations in youth and family support arrangements around young people's transitions to independence and adulthood.

Youth Allowance is the main income support payment for people aged 16–20 years actively seeking employment and for full-time students 16–24 years old. It is subject to an individual income and assets test and a parental income and assets test. A person may be exempt from the parental test if they meet the Youth Allowance independence criteria. In addition a person must undertake approved activities that may include full-time study or a combination of activities such as job search, work for the dole, literacy and

numeracy courses, part-time education, part-time employment and voluntary work. People on Youth Allowance, who are not full-time students, may be required to undertake Mutual Obligation activities.

The rate of Youth Allowance is determined on whether the person is single, partnered, if they have children, if they live at home or need to live away from home.

Austudy payment is paid to students 25 years and over whose financial circumstances are such that without financial help, full-time study would not be possible. The rate of Austudy is dependent on whether the person is single or partnered, whether they have children and whether the person is a 'long-term income support student'.

Eligible students receiving Youth Allowance, Austudy or Pensioner Education Supplement, who live away from home to study, can receive a Fares Allowance which contributes to travel costs.

Table 7.15 shows the number of Youth and Student Support recipients and expenditure by payment type.

**7.15 RECIPIENTS(a) AND EXPENDITURE FOR YOUTH AND STUDENT SUPPORT**

	Units	1999–2000	2000–01	2001–02	2002–03
<b>Youth Allowance</b>					
Full-time students	no.	315 346	314 635	313 068	304 946
Other	no.	85 661	90 913	90 339	87 486
<i>Total</i>	no.	401 007	405 548	403 407	392 432
Total payments	\$'000	2 002 830	2 101 915	2 213 719	2 235 020
<b>Austudy</b>					
Recipients	no.	43 228	42 490	41 187	38 779
Total payments	\$'000	253 870	249 258	280 794	270 623
Student financial supplement payments(b)	\$'000	290 681	161 510	500 967	114 359
Fare allowance payments	\$'000	569	644	525	1 304

(a) Number of recipients at 30 June. (b) The Government announced on 24 April 2003 that no loans would be issued under the Student Financial Supplement Scheme from 1 January 2004. The closure of the Scheme from 1 January 2004 does not affect repayment arrangements.

Source: Department of Family and Community Services.

## Child care support

Child care support policies have been developed to help families to participate in the economic and social life of the community through providing support for child care.

Child Care Benefit (CCB), which replaced Childcare Assistance and the Childcare Rebate from 1 July 2000, helps families with the cost of child care, with financial assistance proportionally higher for lower income families. Eligible families can have the benefit paid directly to the child care service to reduce their ongoing fees. Alternatively they can receive the benefit as a lump sum refund at the end of the financial year. Families using informal carers (i.e. care provided by a friend or neighbour), rather than formal care in an approved service are eligible for the minimum rate of CCB. This is paid for up to 50 hours per week of work related child care.

The Jobs, Education and Training (JET) program assists jobless parents to improve their employment prospects by participating in study, work or job search activities. All parents eligible for JET assistance (mainly single parents) are on very low incomes and are aiming to enter or re-enter the workforce. The JET Child Care program provides assistance with child care to parents undertaking approved activities. Assistance can be provided with paying child care fees so parents usually only have to make a small co-payment of \$2 per day. Flexible child care services are also provided for targeted vulnerable groups, such as creches associated with educational activities for teenage parents and creches located in Indigenous communities.

Table 7.16 shows the number of recipients and expenditure for CCB.

## Labour market assistance

Labour market assistance programs are designed to help people of working age through providing income support to those seeking work or undertaking other activities such as training or community work or caring for children. Most income support payments are subject to a means test, which assesses family income and assets.

There are two main income support payments for labour market assistance: Newstart Allowance (NSA) and Parenting Payment.

NSA is paid to people aged 21–64 years who are unemployed and actively searching for work. They must be willing to undertake suitable paid work, which includes full-time, part-time or casual employment. They may also qualify if undertaking a vocational training course, participating in a labour market program or undertaking other agreed activities to improve their employment prospects.

NSA jobseekers may be asked to undertake Mutual Obligation activities, in addition to their job search, after six months of unemployment and annually thereafter. Mutual Obligation requires people to take part in activities to improve their skills and work habits. It aims to enhance the person's job prospects and competitiveness in the labour market, promotes involvement in community work and facilitates transition from welfare to employment. From 1 July 2002, Mutual Obligation requirements apply to all job seekers up to 49 years of age. People aged 50 and over on NSA have a Personal Adviser to ensure that their requirements are appropriate, and that they have access to appropriate services.

**7.16 RECIPIENTS(a) AND EXPENDITURE FOR CHILD CARE SUPPORT**

	1999–2000		2000–01		2001–02		2002–03	
	no.	\$'000	no.	\$'000	no.	\$'000	no.	\$'000
Child Care Benefit(b)								
Approved service	—	—	630 156	—	672 000	—	n.a.	—
Registered carers	—	—	47 236	—	53 900	—	n.a.	—
Total expenditure	—	—	— 1 037 137	—	— 1 315 912	—	— 1 364 358	
Child Care for Eligible Parents								
Undergoing Training	8 592	11 050	13 276	7 301	(b)18 352	11 067	(c)12 941	12 985

(a) Number of families at 30 June. (b) Does not include five months of data for NT and seven months of data for the ACT.

(c) Number of children in childcare assisted through JET. Due to improved recording methods, comparisons between previous years and 2003 are not appropriate.

Source: Department of Family and Community Services.

Other payments for labour market assistance include: Mature Age Allowance, Partner Allowance, Widow Allowance, Bereavement Allowance and Special Benefit. Mature Age Allowance, Partner Allowance and Widow Allowance all recognise the labour market difficulties faced by some older unemployed people who have no recent workforce experience. Bereavement Allowance is a short-term payment for recently widowed people without dependent children, payable for up to 14 weeks. Special Benefit provides assistance to people in severe financial need and for whom no other pension, allowance or other support is available.

Since 20 September 2003, the non-activity tested Mature Age Allowance and Partner Allowance have been closed to new entrants. People receiving Mature Age or Partner Allowance immediately before 20 September 2003 can stay on these payments while they remain eligible. The closure of Mature Age Allowance and Partner Allowance complements other measures in the Australian Government's Australians Working Together (AWT) initiative that are designed to improve the job prospects of older Australians of workforce age. Most people who would have qualified for these payments will be eligible for NSA. This gives them full access to support services and programs to help them increase their economic and social engagement, including the new flexible participation requirements and individually focused support for recipients aged 50 and over.

Parenting Payment is paid to single and partnered low-income parents who are primary carers for children under 16. The policy recognises the important contribution made by parents caring for children at home and aims to ensure parents' future options are not being limited by long periods out of the workforce. From September 2003, parents whose youngest child is aged 13 and over will have a participation requirement of 150 hours in each six month period in activities like study, training or part-time work. These activities are intended to help prepare them for future workforce engagement. Assistance is being provided to these customers through the services of specially trained Centrelink Personal and JET Advisers.

Pensioner Education Supplement, Education Entry Payment and Employment Entry Payment provide supplementary financial assistance to help with the costs of taking up study and entering the workforce. Work for the Dole (WfD) Supplement and Community Development Employment Project

(CDEP) Participant Supplement provide supplementary financial assistance to help with the costs of participating in the WfD and CDEP programs.

Table 7.17 shows the number of labour market assistance recipients by expenditure and payment type.

### **Support for people with a disability**

The policy to support people with disabilities is designed to promote independence and self-reliance through the provision of rehabilitation services, specialist employment services and other services for people with a disability. It also aims to help support people with a disability with limited means through the provision of income support.

Disability Support Pension (DSP) is the main form of income support for people with a physical, intellectual or psychiatric impairment resulting in an inability to work for at least 30 hours per week at award wages, or be retrained for work, for at least two years. DSP is income and assets tested. However, the permanently blind are exempt from the income test. DSP for people aged 21 years and over is paid at the same rate as Age Pension. Youth rates apply to those aged under 21 years. These are largely tied to Youth Allowance rates, but include a supplement of \$87.70 per fortnight. Youth rates are not subject to parental income or assets tests.

From September 2002, the Better Assessment and Early Intervention measure, part of the AWT package of measures, provides for an increased focus on the assessment of work capacity for people who are ill, injured or have a disability and on the early identification of interventions, such as rehabilitation and employment assistance, to help people maximise their economic and social participation.

Other support for people with a disability includes Mobility Allowance and Sickness Allowance. Mobility Allowance is intended to help those who are involved in paid work, vocational training or voluntary work or a combination of these, who are unable to use public transport without substantial assistance. Sickness Allowance may be paid to people between 21 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.

### 7.17 LABOUR MARKET ASSISTANCE(a)

	Units	1999-2000	2000-01	2001-02	2002-03
<b>Newstart Allowance</b>					
Short-term (less than 12 months)					
Males	no.	159 340	186 789	162 441	146 266
Females	no.	69 038	72 959	66 142	59 262
Persons	no.	228 378	259 748	228 583	205 528
Long-term (12 months and over)					
Males	no.	251 420	232 878	229 067	216 097
Females	no.	100 980	92 065	97 171	100 052
Persons	no.	352 400	324 943	326 238	316 149
Total payments	\$'000	4 954 450	4 918 349	5 078 220	4 831 069
<b>Parenting Payment</b>					
Single					
Males	no.	28 463	31 661	32 966	33 909
Females	no.	368 851	385 000	394 880	403 049
Persons	no.	397 314	416 661	427 846	436 958
Total payments	\$'000	3 407 804	3 861 774	4 145 834	4 350 133
Partnered(b)					
Persons	no.	592 077	205 379	191 576	181 405
Total payments	\$'000	2 086 426	1 463 907	1 425 884	1 380 984
<b>Mature Age Allowance</b>					
Recipients	no.	41 792	38 907	40 132	41 078
Total payments	\$'000	367 250	352 596	364 210	381 155
<b>Partner Allowance</b>					
Recipients	no.	89 391	92 107	102 330	102 810
Total payments	\$'000	646 460	728 679	817 599	860 768
<b>Widow Allowance</b>					
Recipients	no.	33 077	36 789	41 277	43 209
Total payments	\$'000	270 825	324 919	389 550	429 662
<b>Special Benefit</b>					
Recipients	no.	11 260	12 691	13 091	12 228
Total payments	\$'000	98 704	114 778	119 811	116 286
<b>Bereavement Allowance</b>					
Recipients	no.	44	51	41	55
Total payments	\$'000	782	719	813	986
<b>Pensioner Education Supplement</b>					
Recipients	no.	40 925	46 569	50 361	52 923
Total payments	\$'000	49 571	58 248	65 784	68 574

(a) Number of recipients at 30 June. (b) From 1 July 2000 the basic component of Parenting Payment (partnered) was incorporated into Family Tax Benefit. As a result 375,233 customers were transferred from Parenting Payment (partnered) to Family Tax Benefit Part B.

Source: Department of Family and Community Services.

Wife Pension (DSP) provides an income for a woman who is a partner of a DSP recipient, is aged below Age Pension age and is not receiving any other payment in her own right. This payment is gradually being phased out, with new grants of Wife Pension ceasing after 30 June 1995.

Table 7.18 shows the number of recipients of support for people with a disability, and expenditure by payment type.

### Support for carers

There are two forms of Australian Government financial assistance that may be available in a caring situation — Carer Payment and Carer Allowance.

Carer Payment provides income support to people who, due to the demands of their caring role, are unable to support themselves through substantial workforce participation. Carer Payment is subject to income and assets tests and is paid at the same rate as other social security pensions.

Carer Allowance is a supplementary payment that is available to people who provide daily care and attention at home for an adult or child with a disability or severe medical condition. Carer Allowance is not income or assets tested. It can be paid in addition to a social security income support payment.

Table 7.19 shows the number of support for carer recipients and expenditure by payment type.

**7.18 SUPPORT FOR PEOPLE WITH A DISABILITY(a)**

	Units	1999–2000	2000–01	2001–02	2002–03
Disability Support Pension					
Males	no.	382 351	392 354	406 893	412 777
Females	no.	219 929	231 572	252 022	260 557
Persons	no.	602 280	623 926	658 915	673 334
Total payments	\$'000	5 258 449	5 849 799	6 404 351	6 851 608
Wife Pension (DSP)					
Recipients	no.	59 935	51 225	44 238	37 880
Total payments	\$'000	486 740	446 564	401 969	351 491
Mobility Allowance					
Recipients	no.	35 154	37 574	41 456	44 239
Total payments	\$'000	53 379	59 367	67 852	74 975
Sickness Allowance					
Recipients	no.	10 733	10 942	9 522	8 927
Total payments	\$'000	90 575	95 554	93 724	85 528

(a) Number of recipients at 30 June.

Source: Department of Family and Community Services.

**7.19 SUPPORT FOR CARERS(a)**

	Units	1999–2000	2000–01	2001–02	2002–03
Carer Payment					
Recipients	no.	47 550	57 190	67 260	75 937
Total payments	\$'000	369 723	480 944	595 810	702 649
Carer Allowance(b)					
Recipients	no.	194 887	235 041	272 045	299 609
Total payments	\$'000	412 334	533 247	645 722	744 488

(a) Number of recipients at 30 June. (b) Carer Allowance was introduced on 1 July 1999. It combined Child Disability Allowance with Domiciliary Nursing Care Benefit, which was the responsibility of the Department of Health and Ageing. Figures do not include Health Care Card only customers.

Source: Department of Family and Community Services.

## 7.20 SUPPORT FOR AGED(a)

	Units	1999–2000	2000–01	2001–02	2002–03
Age Pension(b)					
Males	no.	654 557	684 219	710 170	735 263
Females	no.	1 075 303	1 101 335	1 100 609	1 118 749
Persons	no.	1 729 860	1 785 554	1 810 779	1 854 012
Total payments	\$'000	14 037 940	15 616 477	16 665 653	17 740 214
Widow B Pension					
Recipients	no.	8 892	6 456	5 130	2 986
Total payments	\$'000	89 849	84 296	59 787	39 804
Wife Pension (Age)(b)					
Recipients	no.	31 406	26 476	23 730	20 230
Total payments	\$'000	240 751	233 080	216 160	195 071

(a) Number of recipients at 30 June. (b) Includes the Pension Savings Bonus Scheme from 1 July 1998 (first payments were made in 1999–2000); and amounts paid by the Department of Veterans' Affairs in relation to the Aged Pension, related Wife Pension and Disability Support Pension.

Source: Department of Family and Community Services.

### Support for the aged

Policies relating to support for the aged are designed to help retirees make best use of their own financial resources to maintain their standard of living, and to support the aged with limited means through providing income support. They are also intended to provide information and foster opportunities for older people to participate in the community.

The principal form of support is the Age Pension. Age Pension age for men is 65 and for women is being progressively raised to 65 by 2014. The qualifying age for women depends on their date of birth, with the minimum age increasing by six months at two year intervals until it reaches 65 for those born on or after 1 January 1949.

Other payments available for older Australians include Wife Pension and Widow B Pension. These payments were designed to provide financial assistance to women below the pension age who are either the partner of an age pensioner or who have lost the financial support of a male partner through death, separation or divorce. The concepts behind these payments have been updated to reflect a more modern society and consequently these payments have been closed to new entrants. From 1 July 1995 for Wife Pension, and from 21 March 1997 for Widow B Pension, payments have been confined to women already receiving the payment on those dates.

The ageing of the Australian population will increase the financial commitment of the Australian economy to support the aged. It is expected that Age Pension expenditure will increase from 3.0% of gross domestic product to 4.6% by 2050.

Table 7.20 shows the number of recipients and expenditure by payment type for support for the aged.

### Other support programs

#### Family assistance support

Family assistance support programs help support and strengthen families through services to enhance family relationship, lower the incidence of family breakdown and prevent child abuse.

The aim of the Stronger Families and Communities Strategy is to enhance the strength of families and communities. The Strategy is a four year program that commenced in 2000–01. It takes a prevention and early intervention approach to helping families and communities build resilience and the capacity to deal with problems before they develop. It encourages the development of practical and innovative projects that address locally identified issues.

The Strategy focuses on three important family areas: early childhood and families with young children; marriage and relationships; and balancing work and family. It targets the following groups:

- families with young children
- isolated families
- families at risk
- young people, particularly in rural and regional Australia
- emerging non-traditional community leaders such as older women and young people
- Indigenous families and communities.

A longitudinal study of child health and development was also initiated under the Strategy.

The Australian Government has been funding the Family Relationships Services Program (FRSP) since the early-1960s. The Program aims to enable children, young people and adults to develop and sustain safe, supportive and nurturing family relationships and to minimise the emotional, social and economic costs associated with disruption to family relationships. The Australian Government Attorney-General's Department (AGD) contributes part of the funding for the FRSP.

Early Intervention and Parenting projects are aimed at preventing child abuse, improved parenting skills and strengthening families. A key focus of these projects is meeting the special needs of families in rural and remote areas, Indigenous families and families from multicultural backgrounds. Opportunities are also provided for children under five, and their carers, to interact with other children and their carers.

The Australian Government Financial Counselling Program provides free financial counselling services to people in low-income groups experiencing financial crises due to circumstances such as unemployment, sickness, credit over-commitment and family breakdown.

### **Youth and student support**

Youth and community support programs develop new partnerships within and across levels of government and with community organisations to support innovations in youth and family support arrangements around young people's transition to independence and adulthood.

The Strengthening and Supporting Families Coping with Illicit Drug Use Measure provides funding to state and territory governments to provide services to families where a young person is suffering from the effects of illicit drug use.

Reconnect is an early intervention program for young people, aged between 12 and 18 years, who are homeless or at risk of homelessness, and their families. Reconnect services offer counselling, adolescent mediation and practical support to both young people and their families.

The Youth Activities Services Program provides innovative structured activities and positive peer support programs after school, over the weekend and during vacations for 11–16 year olds in disadvantaged areas.

The Youth Activities Services Family Liaison Worker Program provides practical support and guidance for young people aged 11–16 and their families, to help them deal with difficulties such as family conflict and lack of communication, and refer them to specialist services as required.

The Job, Placement, Employment and Training (JPET) program assists young people, 15–21 years of age who are homeless or at risk of homelessness, to overcome personal and social barriers and engage more fully in the life of their communities to achieve greater social and economic participation.

Green Corps is a youth development and environmental training program for young people aged 17–20 years. The program provides young people with the opportunity to conserve, preserve and restore Australia's natural environment and cultural heritage. Each Green Corps project involves 10 young people for 26 weeks who receive an allowance. Projects are located mainly in regional and remote areas of Australia and focus on areas where environmental and heritage restoration, protection and conservation is a high priority.

The Mentor Marketplace Program encourages the use of mentoring to increase outcomes for young people, particularly those at greatest risk of disconnection from their families, community, education and work.

The Transition to Independent Living Allowance (TILA) provides one-off assistance (with a value of up to \$1,000) to young people between 15–25 years of age who are approaching their independence and making the transition from state-supported care arrangements to independent living. TILA targets young people in greatest need exiting care arrangements.

### **Child support**

The Child Support Scheme is a joint FaCS and AGD scheme, administered by the Child Support Agency (CSA). The scheme is the framework for 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 to do so. Parents may transfer their assessed liability privately, or have it collected and transferred through CSA. Parents are required to take reasonable action to obtain child support if they wish to receive Family Tax Benefit Part A at more than the basic rate.

The total amount transferred between parents in 2002–03 was \$1.9b. This includes child support assessed by CSA and transferred directly between parents, as well as child support assessed and collected by CSA. In 2002–03, 50.6% of all parents registered with CSA transferred their child support privately, with minimal CSA intervention. It is the first year that over half of CSA's client base made private transfer arrangements.

### **Child care**

Child care support policies are designed to help families balance their work and parenting roles by providing flexible child care services to promote quality child care, contributing to the development and education of children; and provide a focus for early intervention initiatives for vulnerable families and children.

Child care services include centre-based long-day care, family day care, in-home care, before and after school hours care, vacation care, occasional care, and Multi-functional Aboriginal Children's Services. Flexible services that can combine various models of care are also available to meet the needs of families in rural and remote areas.

### **Housing support**

Housing support policies are in place to assist low and moderate income householders access appropriate affordable housing, and provide supporting initiatives to assist homeless people.

The Supported Accommodation Assistance Program is a joint Australian Government and state/territory government program, which provides transitional, supported accommodation and a range of related support services to people who are homeless or at imminent risk of homelessness. It also aims to resolve crisis, re-establish family links where appropriate and re-establish the capacity of clients to live independently of the program.

FaCS housing assistance programs are discussed further in *Chapter 8, Housing*.

### **Community support**

Community support programs and policies cover a wide range of goals and outcomes. They include developing community capacity and self-reliance by supporting leadership, volunteering and innovative local responses. Another goal is to help people in rural and regional areas access services that support their special needs and to take advantage of opportunities. They are also designed to help improve the living conditions of

Indigenous peoples and other culturally and linguistically diverse communities. Other goals and outcomes involve encouraging partnerships between business, community and government sectors, helping in crisis situations and assisting low-income families and individuals with living costs.

The Stronger Families and Communities Strategy recognises that strong communities have strong leadership, skills and knowledge, partnerships between public and private sectors, and a solid core of committed volunteers. The Strategy aims to strengthen these characteristics in communities where they are weak and so increase their capacity to meet the challenges of economic and social change and to cope with the pressures that lead to family and social breakdown. The communities targeted by the Strategy include those communities ready and willing to tackle local problems, rural and regional communities, as well as communities facing particular challenges and communities at risk.

The Volunteer Small Equipment Grants 2003, part of the Stronger Families and Community Strategy, funds \$3m nationally to organisations that provide family support and strengthen local communities. Grants of up to \$5,000 are available to help organisations purchase equipment that directly assists volunteers by making their volunteering activities easier, safer or more enjoyable.

The National Skills for Volunteers Program is also part of the Stronger Families and Communities Strategy, providing skills development opportunities to volunteers designed to improve the standard of service to the communities those volunteers support. This is provided through a number of strategies including the National Volunteer Skills Centre and National Skills Development Grants. Grants with a rural and remote training focus are being funded to find sustainable support strategies for volunteers in rural, regional and remote Australia. Other strategies include providing funding for volunteers in FaCS funded areas such as Emergency Relief and jointly funding the National Arts and Museums Regional Volunteer Skills Project with the Department of Communication, Information Technology and the Arts.

The Volunteer Management Program supports matching, referral and training activities through funding to 26 volunteer resource centres, including 17 regional centres. The aim of the program is to enhance the operation of family and community services that involve volunteers by

increasing the number of effectively trained and placed volunteers in those services. People interested in volunteering can approach these services and be matched to volunteering work. Organisations who need volunteers can also approach volunteer resource centres. In addition, the volunteer resource centres provide training to volunteers and volunteer managers.

The Voluntary Work Initiative also refers and matches people to volunteer positions. It aims to improve the take-up and effectiveness of voluntary work among income support customers of working age. Volunteering Australia manages the Voluntary Work Initiative on behalf of FaCS.

Under the AWT initiative, changed participation requirements for 40–49 year old job seekers applied from 1 July 2002. Further participation requirements will apply from 20 September 2003 to older customers on Newstart Allowance and Parenting Payment customers whose youngest child has reached the age of thirteen.

These changes will increase the number of income support customers being referred to volunteer resource centres funded under the Voluntary Work Initiative program. AWT provides additional funding to boost the volunteer matching and referral capacity of voluntary resource centres throughout Australia and assists community organisations in offering suitable volunteer places.

The Emergency Relief Program provides grants to charitable, community and religious organisations so that they can assist individuals and families in emergency financial crisis. The program also provides training support for paid and voluntary workers in the sector. The Volunteer Management Program provides funding for centres to provide referral services to community organisations and training for volunteer managers.

Remote Area Allowance offsets some of the additional costs associated with living in remote areas of Australia. It recognises that income support customers do not receive the full benefits of the zone tax offset amounts that are available to taxpayers. A quarterly Telephone Allowance payment is paid to pensioners, long-term allowance customers and eligible Australian Government Seniors Health Card holders to assist with the cost of domestic telephone services. Pharmaceutical Allowance is paid to pensioners and some other income support customers to help with the cost of Pharmaceutical Benefit Scheme prescription items.

Australian Government Concessions Cards, (the Pensioner Concession Card, the Health Care Card and the Australian Government Seniors Health Card), are also part of Community Support policies. They are issued mainly to assist eligible individuals and/or their families with the cost of Pharmaceutical Benefits Scheme prescription items.

### **Labour market assistance**

Labour market assistance policies are designed to foster a culture of self-reliance in the community by promoting appropriate understanding, expectations and behaviours.

The AWT initiative, which is being progressively implemented from 1 July 2002, provides assistance to people of workforce age including job seekers, parents, people with disabilities, the unemployed, mature age people and Indigenous Australians. Initiatives include a Working Credit to encourage people on income support to take up full-time, part-time or irregular casual work, Training Credits, a Literacy and Numeracy Training supplement, more places in employment services and initiatives to assist Indigenous Australians.

The Personal Support Programme (PSP), which commenced on 1 July 2002, helps those people on income support payments who face multiple non-vocational obstacles to employment. These barriers include homelessness, drug and alcohol problems, psychiatric disorders or domestic violence problems. The PSP has broad objectives that recognise social as well as economic participation. Social outcomes are often more achievable and appropriate to participants with these sorts of multiple barriers to employment.

Personal Advisers are providing extra help to a range of eligible customers including those at a high risk of long-term dependency on income support or, in the case of parents and some mature age customers, because they will face activity requirements for the first time after July 2003. Personal Advisers work with people to identify goals and options, and to develop a plan to achieve them. They make sure people get the right help by referring them to service providers, linking them to other community support specialists within and outside Centrelink such as psychologists, and keeping in touch with them about their progress. Over 450 Personal Advisers commenced in Centrelink offices throughout Australia in September 2002, which will rise to 850 by 2005.

JET is a joint program of the FaCS, the Department of Employment and Workplace Relations and the Department of Education, Science and Training. JET is a voluntary program that assists with skill development and entry or re-entry into the paid workforce. Assistance provided includes: development of a plan to achieve labour market readiness; access to education, training and employment assistance; referrals to government and community services; and child care assistance. People receiving Parenting Payment, Widow Allowance, Partner Allowance, Widow B Pension, Carer Payment and some Special Benefit recipients are eligible to participate in JET.

The Voluntary Work Initiative was introduced in 1996 and aims to improve the take-up and effectiveness of voluntary work among income support customers of working age, particularly Newstart and Youth Allowance customers. Initiatives are also being developed that aim at increasing take-up by Indigenous customers and customers of a multicultural background, as well as extension of the program to meet the needs of new AWT customers from 1 July 2002. Volunteering Australia manages the scheme on behalf of FaCS.

### **Support for people with a disability**

The Australian Government and state/territory governments share responsibility for providing specialist disability services under the Commonwealth–State/Territory Disability Agreement (CSTDA). The Government is responsible for providing employment assistance for people with disabilities while the state/territory governments provide non-employment services such as respite and accommodation. The Government contributes funds towards the states and territories' service responsibilities.

The Disability Employment Assistance Program funds organisations under the *Disability Services Act 1986* (Cwlth) to provide employment support to people with a disability who require assistance to gain and/or retain paid employment. This assistance may be provided in the open labour market or within a supported employment setting.

In addition to this support, the Australian Government also funds programs designed to encourage employers to provide durable job opportunities for people with disabilities: workplace modifications; supported wage assessments; wage subsidies; and the provision of information and job placement services.

The Australian Government also funds an Advocacy program which is designed to enable people with a disability to more fully participate in community life, and achieve and maintain their rights as citizens. The Advocacy program involves families of individuals where possible and appropriate. Advocacy is a shared Commonwealth–State responsibility under the CSTDA.

Other services supporting people with disabilities funded by the Government include:

- carer respite centres which provides short-term and emergency respite for carers of young people with severe or profound disabilities who have been unable to access existing state respite care
- print disability services which provide materials in alternative format such as audiotape and Braille to people who, because of their disabilities, are unable to read, hold or manipulate printed materials in standard form
- information and captioning services which assist people with disabilities to access information on recreation, tourism, sport and the arts, and captioned entertainment videos for people who are deaf or hearing impaired.

Support for people with disabilities is also provided through rehabilitation services to improve function and independence in people with a disability so they can gain or retain suitable employment, or live independently.

### **Retirement planning assistance**

The National Information Centre on Retirement Investments (NICRI) is an independent consumer service funded by the Australian Government. It provides the public with free information on planning and saving for retirement, investment options and effective use of financial resources in retirement. NICRI provides investment information, not investment advice.

NICRI delivers its services to the public through a toll-free telephone inquiry service, a web site, and presentations at external seminars and Centrelink Financial Information Service seminars. NICRI also provides an extensive range of information leaflets.

The Financial Information Service (FIS) program, delivered by specialised Centrelink officers, aims to ensure that clients, potential clients and others planning their retirement have sufficient information to make effective use of their private

resources for self support, informed decisions about retirement issues and adequate financial preparation for a retirement that allows participation in their community. FIS Officers provide investment information, not investment advice.

FIS also runs a seminar program across Australia for pre-retirees, retirees, people becoming redundant or retrenched, and rural communities. They provide information for intermediaries such as financial, welfare, community and industry groups. The seminars are directed at changing community attitudes and approaches to

retirement planning, and assisting and encouraging pre-retirees to commence planning for retirement.

FaCS portfolio publications for retirees and pre-retirees aim to give seniors information on a range of issues. The publications are distributed through Centrelink, NICRI, financial planners, solicitors, accountants and community groups. They are also available on the web sites for FaCS and Centrelink.

## Strengthening Indigenous families and communities

*This article was contributed by the Australian Government  
Department of Family and Community Services.*

The Family and Community Services (FaCS) portfolio was established in 1998 with responsibility for a broad range of social policy issues. Strengthening families and communities and encouraging social and economic participation are key outcomes, which are achieved through a number of support programs, including:

- income support
- housing assistance
- various community support and development programs
- disability services
- child care services
- family support, including family payments, child support and financial counselling.

Special consideration is given to the needs of young people and students, people living in rural and remote areas, Aboriginal and Torres Strait Islander peoples, and people from diverse cultural and linguistic backgrounds.

There are almost half a million Aboriginal and Torres Strait Islander people resident in Australia, comprising 2.4% of the Australian population. As

a result of higher fertility and mortality rates, the Indigenous population profile features a median age of 20 years compared with 36 years for the non-Indigenous population. Life expectancy at birth is about 20 years less than for non-Indigenous persons.

By almost all socioeconomic indicators, Indigenous persons are the most disadvantaged group in Australia. Indigenous persons experience much higher unemployment rates, lower average incomes, lower participation and achievement in the education system, much higher rates of incarceration, higher infant mortality rates, and poorer health and housing situations than non-Indigenous persons. Suicide rates are also higher, and many in Indigenous communities suffer major alcohol and other substance abuse problems.

For those living in remote locations, access to employment, education and training opportunities, to health and welfare services, to adequate housing, and to essential facilities such as banking and communications are often problematic. In urban areas, Indigenous people often face difficulties accessing mainstream services and facilities, and private sector jobs.

FaCS is addressing Indigenous issues on a number of fronts. Attention to appropriate and effective service delivery of income support entitlements continues to be a major focus, especially in remote areas. Various welfare reform measures aim to provide more individually tailored support to those facing multiple employment barriers, and encourage more social and economic participation.

Many of the Indigenous projects funded under programs such as the Stronger Families and Communities Strategy, the Family and Community Networks Initiative and Reconnect are focused on enabling community-based groups to address aspects of Indigenous disadvantage. Other programs, such as the Indigenous Parenting and Wellbeing Program focus entirely on Indigenous family strengthening. The Child Abuse Prevention Program, the National Disability Advocacy Program, and the National Illicit Drugs Strategy also fund a number of Indigenous-focused projects. All include elements of local capacity building, cultural appropriateness and self-governance, with Indigenous people integrally involved in planning, designing and delivering local initiatives.

FaCS also funds many Indigenous childcare centres, playgroups and disability services, and provides funds to the states and territories for Indigenous housing programs and crisis accommodation.

FaCS' total expenditure on Indigenous-specific programs, services and projects for 2002–03 was \$213.2m, including \$48.6m for Centrelink's Indigenous Services. This does not include spending on individual income support entitlements.

The importance of holistic, integrated approaches to addressing multi-faceted and inter-related issues applies to the way government agencies provide support to Indigenous communities. FaCS is working closely with a number of Australian Government, and state and territory departments in several Indigenous Community Coordination pilots, which seek to provide joined-up government responses to community-identified priorities. Learning from this initiative should result in

improving government's capacity to respond appropriately and flexibly to community needs and circumstances.

### **Cape York Family Income Management (FIM) project**

This project was established to improve the living standards and functioning of Indigenous families in Aurukun, Coen and Mossman Gorge through assisting families to better manage income to cover essential living costs, reduce and manage debts, and save for individual and group goals. The process requires dealing with family issues, relationships, expectations and responsibilities in order to develop a family agreement and budget plan.

Agreed dollar amounts are directly deducted from income support or wages and paid into FIM accounts. This money is then used to pay essential household bills and to save for group or individual purposes. In addition, negotiation with local schools and businesses has enabled the establishment of education, nutrition and pharmacy accounts, contributing to education and health improvements.

Westpac Banking Corporation has provided considerable in-kind assistance through a volunteer secondment program, assisting FIM community workers with technical aspects, accounts management systems, community education and awareness-raising, and information products. The Australian Institute of Family Studies is assisting participants and workers with the action learning and evaluation aspects of the project.

The project is managed locally in each site, with overall coordination provided by a FIM Working Group comprised of community, business and government representatives. The project has been extremely successful with outcomes to date including reduction in family conflict, reduction in spending on alcohol and gambling, purchase of many white goods, furniture items, cars and leisure goods, increased consumer capacity to support local business development, health improvements, better school attendance, and increased motivation to work or study. Expansion to three or four more communities is underway.

## Helping Our Kids — Magani Malu Kes Townsville Ltd

This project aims to improve outcomes for Indigenous families through supporting parenting and vocational skills and training, including linking them with other available services, projects and programs. A local Indigenous youth group is benefiting from daily contact with elders and adults attending training under the Helping Our Kids project, enhancing their sense of connectedness to family and community, and encouraging them to take responsibility for their actions and participate themselves in training and other activities.

A playgroup has also been established within vocational training times at Magani House, resulting in an increase in the number of young

parents participating in training. These parents have stated that they would not have contemplated a future in the workforce if they had not been exposed to the training aspect of the Helping Our Kids project. For the children, seeing their parents participate in and value further training provides positive reinforcement for them to value their own education. In addition, while children are present at Magani House their parents can take advantage of the child health screenings and immunisation programs. To date the Helping Our Kids project has resulted in the facilitation of seven Indigenous traineeships and one new business venture.

## Aged care programs

*This section was contributed by the Australian Government Department of Health and Ageing.*

The Australian (Commonwealth) Government, in conjunction with the state and territory governments and the local governments has put together systems for the delivery of health, income support, and housing and community services to support the ageing people of Australia. All these systems are major areas of concern for all three levels of government, and are described in the National Strategy for an Ageing Australia.

### National Strategy for an Ageing Australia

Recognising the significant implications of population ageing across a number of public policy areas, the Australian Government has developed the National Strategy for an Ageing Australia. The Strategy arose from a series of consultations with key stakeholders and from public submissions to six discussion papers put together by the Government. The strategy identifies key issues, a number of goals and some broad, practical actions to meet these goals. It provides a basic framework to address current issues facing older people and to prepare for future demographic changes as Australia's population ages over the next 50 years. It also highlights that the ageing of Australia's population

is an issue for all Australians — governments, businesses, community organisations and individuals.

The main themes of the National Strategy, as discussed in the Terms of Reference for the strategy are:

- healthy ageing issues — health promotion, physical activity
- independence and self provision issues — retirement income, pensions, employment for mature age workers issues and superannuation
- world-class care issues — health and care issues across the spectrum
- attitude, lifestyle and community support issues — housing, transport, lifelong learning, tourism, business opportunities, families and intergenerational issues.

### System of aged care programs

The main purpose of aged care programs is to support healthy ageing for older Australians and quality, cost effective care for frail older people and support for their carers. The system of aged care programs in Australia is structured around two main forms of care delivery: residential and community care. There are various other associated aged care programs such as Day Therapy Centres, Multi-purpose Services and Advocacy Systems, that also form part of the aged care system (diagram 7.21).

## **Aged Care Assessment Program**

The Australian Government provides grants to state and territory governments specifically to operate Aged Care Assessment Teams (ACATs). In 2002–03, the Government contributed \$41.9m for the operation of 119 ACATs throughout Australia, as well as an evaluation unit in each state.

ACATs assess the care needs of people and their eligibility for accessing the required services. The main professional groups represented on ACATs are geriatricians, social workers, nurses, physiotherapists, occupational therapists, psychologists and psychogeriatricians.

ACATs assess the whole care needs of an individual, using a multi-disciplinary and multi-dimensional approach. As part of the holistic assessment process, a person's medical, physical, social, psychological and restorative care needs are assessed before a care approval is made. ACATs are also well positioned to provide advice on aged care services and to act as an interface between aged care services and the health care system.

Clients need to be assessed as eligible by an ACAT before they can receive a subsidy for residential care, a Community Aged Care Package, or some forms of flexible care, such as under the Extended Aged Care at Home (EACH) Program.

## **Residential Aged Care Program**

The aim of the Residential Aged Care Program is to enhance the quality of life of older Australians through support for the provision of a cohesive framework of high quality and cost effective residential care services for frail older people. There are two types of residential aged care, high level care ('nursing home') and low level care ('hostel'). Aged care places are allocated in proportion to the number of people aged 70 years and older.

The Australian Government subsidises the costs for each person in a residential care setting. The level of funding depends on the care needs of the resident. Also, residents can be asked to pay fees

and charges. Each aged care home that provides care is required to meet specific care and building standards and to be accredited by the Aged Care Standards and Accreditation Agency in order to receive Government funding. Capital funding is available on a competitive basis to support residential aged care where the aged care provider is unable to fund necessary building works. Australian Government expenditure on residential aged care in 2002–03 is shown in table 7.22.

## **Community care programs**

The main aim of these programs is to assist people being maintained in their own homes. The main programs are the Home and Community Care, the Community Aged Care Packages and the Extended Aged Care at Home program.

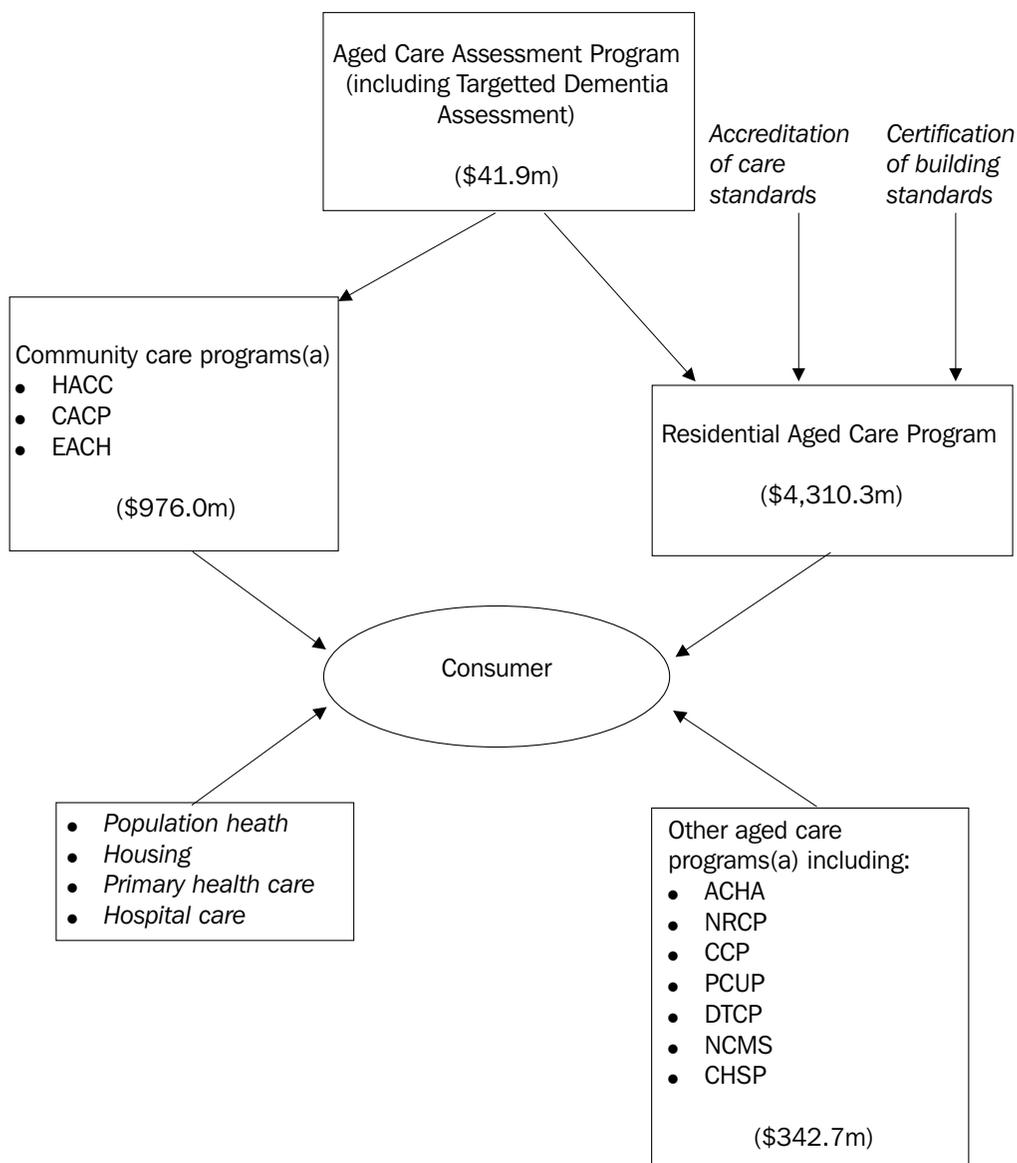
## **Home and Community Care (HACC) Program**

The HACC Program is a joint Australian Government and state government cost-shared program which provided \$1,100m nationally for the 2002–03 financial year to service provider organisations. Of the total, the Australian Government made available \$674.1m or 60%, with the states and territories providing the remaining 40%.

The Australian Government provides funding for HACC, but the day-to-day administration, priority setting and approval of project allocations is the responsibility of the state and territory governments.

The aim of the HACC Program is to provide basic maintenance and support services to enable frail older people (and younger people with disabilities) to remain living in their home and the community and to prevent premature admission to long-term residential care. HACC funded services also assist the carers of these groups. The types of HACC funded services available include home maintenance and modification, as well as domestic assistance, food services, personal care, community nursing, transport and respite care.

7.21 AGED CARE SYSTEM, Australian Government expenditure — 2002–03



(a) Individual programs are described within this chapter.

Source: Department of Health and Ageing.

## 7.22 COMMONWEALTH EXPENDITURE ON RESIDENTIAL AGED CARE(a)

	Residential Care (recurrent)		Residential Care (capital)	
	\$m		\$m	
	2001–02	2002–03	2001–02	2002–03
New South Wales	1 441.9	1 543.0	7.0	4.5
Victoria	973.0	1 046.9	4.6	3.6
Queensland	698.9	774.7	2.8	4.2
South Australia	382.8	347.8	0.8	3.9
Western Australia	322.6	417.6	1.5	2.6
Tasmania	117.1	125.1	1.8	3.8
Northern Territory	11.8	36.1	1.2	0.7
Australian Capital Territory	39.2	19.1	0.1	0.1
<b>Australia(b)</b>	<b>3 987.3</b>	<b>4 310.3</b>	<b>19.7</b>	<b>23.3</b>

(a) Includes expenditure by the Department of Health and Ageing and the Department of Veterans' Affairs, in accrual terms. Actual expenditures may change slightly due to late claims and adjustments. (b) Totals may vary due to rounding.

Source: Department of Health and Ageing.

### Community Aged Care Packages (CACP) Program

The CACP Program is funded by the Australian Government to provide a community alternative to low level residential care to assist frail older people with complex needs to remain living in the community.

Service providers use a case management approach to develop and monitor care delivery to eligible older people. One of the benefits of the CACP Program is its flexibility in service delivery which is designed to meet individual needs. This flexibility enables people to be given assistance through a package of care services which may include personal care, assistance with preparing meals, home help and assistance with transport.

By June 2003, there have been 27,636 packages approved under the program. Total cash expenditure for 2002–03 was \$288.3m.

### Extended Aged Care at Home (EACH) Program

The EACH Program commenced as a three-year pilot in 1998 to test the feasibility of providing the equivalent to high level residential age care to people living at home. The Program has expanded to a total of 450 places at 30 June 2003, with funding in 2002–03 of \$13.6m.

EACH service providers are required to deliver individually tailored, coordinated packages of care in keeping with a client's care plan. Services can include, but are not limited to, the following:

- personal care including continence care
- specialist nursing care and 24-hour emergency assistance
- support for people with cognitive deficits
- assistance with meals
- home help and maintenance.

The 2001 Budget Initiative on EACH provided an additional \$2m over two years for development work to lay the foundations for possible expansion of the EACH Program and address data management, quality and accountability issues. Through 2002–03 further development was undertaken, including a census of EACH services in May 2002.

In the 2002 Aged Care Approvals Round, 160 EACH packages have been allocated to provide for a moderate expansion of the EACH Program. The expansion targets Tasmania, Queensland and the Northern Territory, none of which hosted a pilot program, plus additional packages for New South Wales and South Australia. This expansion will build provider familiarity with the program, and provide an Australia-wide base for program development.

### Other aged care programs

The Australian Government also provides funding for other support and community services. The following are the main programs funded by the Government.

### **Assistance with Care and Housing for the Aged (ACHA) Program**

The ACHA Program assists frail, low-income older people who are renting, are in insecure/inappropriate housing or are homeless, to remain in the community by accessing suitable housing linked to community care.

The Australian Government contributes recurrent funds to organisations that provide support through paid workers and/or volunteers, assisting clients to access and be maintained in secure and affordable housing. The primary role of program workers is to link clients to appropriate mainstream housing and/or care services.

In 2002–03 the program funded 46 projects nationally from an allocation of \$2.6m. The funding for each project varies according to identified community need, the number of staff employed by individual services and the tenure of employment (i.e. full-time or part-time). Most projects are located in inner city areas where there is a concentration of frail elderly people living in insecure accommodation.

### **National Respite for Carers Program (NRCP)**

The aim of the NRCP is to contribute to the support and maintenance of caring relationships between carers and their dependent family and friends. It provides information, respite care and other support or assistance appropriate to carers' individual needs and circumstances, and those of the people for whom they care.

A national network of over 90 Commonwealth Carer Respite Centres and regional office outlets has been established to improve coordination of respite service provision and help meet emergency and unplanned respite needs. Commonwealth Carer Respite Centres provide carers with a single contact point for respite care assistance whether the respite service required is in an aged care facility, in the community or in the carer's home. The NRCP provides funding for over 450 carer respite services, which include in-home, family-based, centre-based and peer support services, to supplement mainstream respite services offered through the HACC and other state-based programs as well as local government and community initiatives. An allowance is also paid to carers who are looking after people with high level needs.

Funding for the NRCP increased from \$19m in its inception year, 1996–97, to \$92.6m in 2002–03. The NRCP funds Commonwealth Carer Resource Centres, Commonwealth Carer Respite Centres and respite services.

### **Commonwealth Carelink Program (CCP)**

Over 60 Commonwealth Carelink Centres across Australia provide information about local community aged care, disability and other support services to over 13,000 clients each month. Clients include care professionals such as general practitioners, service providers, individuals and their carers. Program funding in 2002–03 was \$12.4m.

### **Psychogeriatric Care Units (Dementia) Programs (PCUP)**

The Australian Government funds a number of care programs that exclusively or partly target people with dementia and their carers. The Dementia Education and Support Program has an annual budget of \$1.4m, and has the primary function of operating a 24-hour National Dementia Helpline that provides an information and referral service as well as acting as a 'gateway' to other more intensive support services. A second telephone support service for carers of people with dementia and challenging behaviours and respite workers is provided under the National Dementia Behaviour Advisory Service. The budget in 2002–03 for this service was \$0.4m.

The Early Stage Dementia Support and Respite Project, with an annual budget of \$1.4m, provides a nationally coordinated support and respite service for people in the early stages of dementia and their carers. In 2002–03 the Carer Education and Workforce Training with \$1.1m provided a coordinated national education and training program, focusing on carers and respite workers. In addition to these services, the Psychogeriatric Care Units, with a 2002–03 budget of \$3.4m, provide specialist psychogeriatric support to residential aged care homes and community carers looking after people with dementia who exhibit significant behaviours of concern.

### **Day Therapy Centres Program (DTCP)**

The DTCP has been in operation since 1988 when rationalisation of nursing home funding led to the separate funding of the therapy function. There are 155 service providers across Australia providing a wide range of therapy services to frail older people living in the community and to residents of Australian Government funded aged care homes. Funding provided by the Government in 2002–03 was \$31.2m.

### **National Continence Management Strategy (NCMS)**

The 'Staying at Home — Care and Support for Older Australians 1998' package included \$15m over four years to address the needs for improved continence management for older Australians through the NCMS. In 2002, an additional \$4m per annum for four years was approved for the continuation of the strategy. Under this Strategy, a number of national research and service development initiatives are being trialed to complement existing continence care.

The Australian Government also funds the Continence Aids Assistance Scheme (CAAS) which was established to assist people of working age who have a permanent disability-related incontinence condition. CAAS currently provides a subsidy to eligible individuals of \$470 per annum. CAAS funding for 2002–03 was \$10m.

### **Commonwealth Hearing Services Program (CHSP)**

The role of the CHSP is to reduce the consequence of hearing loss for eligible clients and reduce the incidence of hearing loss in the broader community. Administration of the CHSP is the responsibility of the Office of Hearing Services (OHS), a branch in the Medical and Pharmaceutical Services Division, Department of Health and Ageing. This branch is also in charge of purchasing hearing systems from accredited public and private sector providers.

Access to hearing services for eligible adults — 21 years and over — is provided through the Hearing Services Voucher System. The Voucher System expenditure in 2002–03 was \$156.8m. Eligible adults include:

- holders of Pensioner Concession Cards
- holders of Gold Repatriation Health Cards issued to Veterans for all conditions
- holders of White Repatriation Health Cards issued to Veterans for conditions that include hearing loss
- Sickness Allowees
- dependants of the above categories
- CRS Australia clients undergoing a vocational rehabilitation program and referred by their case manager
- serving Defence personnel.

There are 143 accredited hearing services providers contracted by the OHS to provide services under the Hearing Services Voucher System. Services are provided at 366 permanent sites and around 875 visiting sites throughout Australia by qualified hearing services practitioners (audiologists and audiometrists). OHS also has supply contracts with 15 hearing devices suppliers for the supply of quality hearing devices into the Program.

In addition, the Australian Government funds Australian Hearing to provide specialised hearing services for children and young adults under the age of 21 years, and to ensure access to appropriate hearing services for eligible adults with special needs. These clients include those who live in remote locations, who are Aboriginal or Torres Strait Islander peoples, or who have complex hearing needs. Funding is also provided to Australian Hearing Services to undertake, through its research arm, the National Acoustic Laboratories, research to increase understanding of issues related to hearing loss, hearing rehabilitation and the harmful effects of noise. Total funding of these Community Service Obligation activities in 2002–03 was \$28.9m.

## Services provided to veterans and their families

*This section was contributed by the Australian Government Department of Veterans' Affairs.*

The Repatriation Commission determines services provided to veterans, via the *Veterans' Entitlements Act 1986 (VEA)* (Cwlth). The Commission currently provides services to more than half a million veterans and members of the Australian Defence Force (ADF), their partners, veteran widows, widowers and children. The Commission has no staff of its own. The Australian Government Department of Veterans' Affairs (DVA) provides the administrative machinery through which the Commission operates. The Commission, comprising three full-time members, has the following functions:

- to grant pensions and other benefits and provide treatment for veterans, their dependants and other eligible persons
- to advise the minister on the operation of the VEA
- generally to administer the VEA, subject to the control of the minister.

The VEA also gives the Commission the power to take necessary actions in connection with the performance of its functions, duties and powers. The responsible minister under the VEA is the Minister for Veterans' Affairs. The minister does not have any powers to direct the Commission beyond the power to approve various actions of the Commission.

Repatriation benefits are provided under the VEA for eligible service that includes:

- wartime service (World War I, World War II, and certain post World War II conflicts including eligible South-East Asia service such as Korea, Malaysia and Vietnam)
- peacekeeping service
- Merchant Navy service during World War II
- peacetime service between 1972 and 1994 — it should be noted that the administration of the Military Compensation and Rehabilitation

Service which covers peacetime service prior to 1972 and post 1994 was transferred from Defence to DVA in December 1999.

Under the *Papua New Guinea (Members of the Forces Benefits) Act 1957* (Cwlth), Indigenous inhabitants of Papua New Guinea who served in the Australian forces during World War II, and members of the Royal Papuan Constabulary and New Guinea Police Force who also served in that conflict, are eligible for compensation-type benefits.

Members of other Commonwealth countries' forces and allied veterans are generally not eligible for compensation-type benefits from DVA in respect of their service, unless they were domiciled in Australia immediately before their enlistment. However, they may qualify for a DVA income support payment (see the section *Income support*).

Qualifications for receiving subsidised housing loans, granted under the Defence Service Homes Act, generally depend on service with the ADF in World War I or World War II, or specified service in Korea, Malaya, South-East Asia, Namibia, the Middle East for the Kuwaiti crisis, Cambodia, the former Yugoslavia, or East Timor, and for service in the Regular Defence forces on or after 7 December 1972, provided the person's first service in the forces was before 15 May 1985. Certain civilians may also be eligible.

More detailed information on repatriation allowances, benefits and services is available from DVA.

### Compensation program

The principal objective of the compensation program is to ensure that eligible veterans, their war widows and widowers, and their dependants, have access to appropriate compensation and income support in recognition of the effects of war or defence service.

### Disability compensation

The main disability benefits provided include a range of disability pensions and the War/Defence Widow(er)s' Pension. Table 7.23 shows the number of pensions at 30 June 2003 and each of the four preceding years.

The Disability Pension compensates persons for incapacity resulting from eligible war, defence or peacekeeping service. General Rate Disability Pensions range from 10% up to and including 100%, depending on the degree of war-caused or service-related incapacity. Higher rates of pension — extreme disablement adjustment, intermediate and special rates — are available. The Intermediate Rate Pension and Special Rate Pension include components designed to recompense the veteran for loss of earnings. A veteran who is blind or who has certain amputations because of war-caused or service-related conditions is granted the Special Rate of pension without any reference to employment.

Compensation is also available to compensate dependants for the death of a spouse or parent as a result of eligible service. The compensation is available as War/Defence Widow(er)s' Pensions, Dependants' Pensions and Orphans' Pensions.

Various ancillary benefits may also be provided, including attendant allowance (paid to carers), clothing allowance, decoration allowance, loss of

earnings allowance, recreation transport allowance, vehicle assistance scheme, goods and services tax (GST) exemption on cars and car parts, bereavement payment and funeral benefit.

Dependent children of ADF members who have been killed or severely injured were given access to educational guidance and counselling from the Veterans' Children Education Boards from 1 January 2001. Long Tan bursaries are available for the children of Vietnam veterans. From 1 January 2001 the children of Vietnam veterans are eligible for Veterans' Children Education Scheme (VCES) benefits where the child is diagnosed as having a depressive disorder or if the opinion of an appropriately qualified professional is that the child is vulnerable

Table 7.24 shows the number of disability pensioners at 30 June 2003 by conflict type. In this table, a person is allocated to the conflict relating to the first disability claim they lodged, regardless of later claims by the person relating to either earlier or later conflicts in which they served.

### 7.23 DISABILITY AND WAR WIDOWS' PENSIONERS — 30 June

Recipient	1998-99	1999-2000	2000-01	2001-02	2002-03
Incapacitated veterans	162 810	162 730	162 505	159 425	157 865
Wives and widows(a)	60 864	56 596	51 148	47 016	43 078
Children	3 337	3 165	1 690	1 404	243
War widows and widowers(b)	104 553	107 953	110 656	113 059	114 235
Orphans	414	410	382	344	298
Other dependants	735	683	657	600	576
<b>Total(c)</b>	<b>331 573</b>	<b>330 338</b>	<b>325 829</b>	<b>320 571</b>	<b>314 358</b>

(a) Wives of living veterans and widows of deceased veterans who have not died from an accepted war caused condition.

(b) Widows and widowers of deceased veterans who have died from an accepted war caused condition. (c) The column totals do not add up to the Total because some of the row totals overlap.

Source: Department of Veterans' Affairs.

### 7.24 DISABILITY PENSIONERS — 30 June 2003

	World War I	World War II(a)	Seaman's War Pension	Korea/Malaya	FESR(b)	Vietnam	Peacetime forces	Gulf War(c)	East Timor	Others	Total
General Rate — from 10% to 100%	2	70 607	461	5 073	2 204	12 511	22 915	172	573	354	114 872
Extreme Disablement Adjustment	—	13 237	95	667	102	134	12	—	—	9	14 256
Intermediate Rate	—	370	1	47	16	327	202	1	1	—	965
Special Rate (TPI or equivalent)	—	7 343	8	1 681	598	15 830	2 199	32	55	25	27 772
<b>Total</b>	<b>2</b>	<b>91 557</b>	<b>566</b>	<b>7 468</b>	<b>2 920</b>	<b>28 802</b>	<b>25 328</b>	<b>205</b>	<b>629</b>	<b>388</b>	<b>157 865</b>

(a) Includes interim forces. (b) Far East Strategic Reserve. (c) A number of veterans of the Gulf War are officially recorded as members of the Defence/Peacekeeping forces.

Source: Department of Veterans' Affairs.

Table 7.25 shows the number of disability pensions at 30 June 2003 and for the nine preceding years.

The VCES provides financial help, guidance and counselling to certain students up to 25 years of age (tables 7.26 and 7.27). To be eligible a student must be the child of a veteran, an Australian mariner, or a member of the Forces, who is

(or has been) in receipt of a Special Rate or Extreme Disablement Adjustment Disability Pension. Children of former prisoners of war, of veterans, or of Australian mariners whose death has been accepted as war-caused, are also eligible. Benefits include education allowances and other forms of assistance appropriate to the particular type and stage of education.

## 7.25 DISABILITY AND WAR WIDOWS' PENSIONS

	Disability pensions in force at 30 June				
	Incapacitated veterans(a)	Dependants of incapacitated veterans(b)	Dependants of deceased veterans(c)	Total	Annual expenditure(d)
	no.	no.	no.	no.	\$'000
1993-94	156 565	91 722	86 224	334 511	1 508 446
1994-95	157 298	85 837	90 039	333 174	1 570 136
1995-96	159 178	80 204	94 473	333 855	1 720 239
1996-97	160 145	74 405	98 493	333 043	1 819 338
1997-98	161 829	69 484	101 647	332 960	1 888 416
1998-99	162 810	64 486	105 417	332 713	2 067 783
1999-2000	162 730	60 011	108 796	331 537	2 099 205
2000-01	162 505	53 080	111 453	327 038	2 314 052
2001-02	159 425	49 020	113 403	321 848	2 501 200
2002-03	157 865	43 321	114 533	314 358	2 615 170

(a) All Disability Pensioners in payment. (b) Includes Disability Pensioners' spouse/widow(er)s, Disability Pensioners' children and Adequate Means of Support (AMS) incapacitated. (c) Includes war widow(er)s, orphans and AMS deceased cases. (d) Includes associated allowances.

Source: Department of Veterans' Affairs.

## 7.26 VETERANS' CHILDREN EDUCATION SCHEME, Cost of education beneficiaries

	NSW(a)	Vic.	Qld	SA(b)	WA	Tas.	Aust.
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1993-94	1 749	1 170	1 304	349	772	464	5 807
1994-95	1 906	1 164	1 601	372	792	492	6 326
1995-96	2 401	1 399	1 878	433	925	553	7 590
1996-97	2 914	1 695	2 430	522	1 136	621	9 318
1997-98	3 536	2 072	3 024	685	1 442	719	11 478
1998-99	3 970	2 421	3 609	812	1 714	789	13 315
1999-2000	3 858	2 585	3 904	976	1 919	789	14 031
2000-01	4 189	3 039	4 632	1 320	2 294	884	16 357
2001-02	4 634	3 229	5 445	1 534	2 576	903	18 320
2002-03	4 893	3 273	5 821	1 773	2 603	873	19 236

(a) Includes the ACT. (b) Includes NT.

Source: Department of Veterans' Affairs.

**7.27 VETERANS' CHILDREN EDUCATION SCHEME, Number of children receiving benefits  
— 30 June 2003**

Type of training	NSW(a)	Vic.	Qld	SA(b)	WA	Tas.	Aust.
At school							
Primary(c)	295	184	404	118	199	63	1 263
Secondary	642	335	833	212	300	118	2 440
Total	937	519	1 237	330	499	181	3 703
Tertiary	386	253	493	139	251	50	1 572
<b>Total</b>	<b>1 323</b>	<b>772</b>	<b>1 730</b>	<b>469</b>	<b>750</b>	<b>231</b>	<b>5 275</b>

(a) Includes the ACT. (b) Includes NT. (c) Receive an annual payment rather than fortnightly payment like others.

Source: Department of Veterans' Affairs.

### Income support

There are three main forms of income support pension paid by DVA:

- the Service Pension, which is similar to the Age and Disability Support Pensions paid by Centrelink
- the Partner Service Pension
- the Income Support Supplement (ISS).

All income support pensions are subject to income and assets tests except those granted to people who are blind in both eyes.

The Age Service Pension is payable to veterans with qualifying service at 60 years of age. Veterans with qualifying service may be paid the Invalidity Service Pension at any age if they are permanently incapacitated for work. Prior to 1 July 1995, the service pension was paid to female veterans with qualifying service at age 55. The Government introduced changes to the minimum age at which a female veteran can be granted an age service pension. Under the changes the minimum age is to be progressively lifted from 55 to 60 years in six-monthly increments every two years over the period 1995–2013. This means that the qualifying age for female veterans for age service pension at 1 July 2003 is 57 years and six months.

For service during World War I and World War II, qualifying service generally means service in an area and at a time when the veteran incurred danger from hostile enemy forces. Qualifying service for post World War II deployments generally covers service in an operational area while allotted for duty in that area. Members of certain peacekeeping forces whose service is considered to be war-like also have qualifying service.

Veterans of other Commonwealth and Allied countries may also qualify for a service pension if they served in wars or war-like conflicts in which Australia was involved. Veterans of Commonwealth forces must have served outside the country of enlistment or be entitled to the award of a campaign medal for service within that country. Allied veterans must have served in formally raised forces. The veteran must be an Australian resident with at least 10 years residency. A Partner Service Pension may be provided on the basis that the person is the partner or widow(er) of a veteran with qualifying service.

ISS is paid to war/defence widow(er)s of service pension age (60 for men, currently 57 for women). It may be paid to a widow(er) under Service Pension age if he or she has a dependent child, is caring for a severely handicapped person or is permanently incapacitated for work. The ISS is subject to income and asset testing and the War/Defence Widow(er)s' Pension is counted as income when assessing income support supplement.

The maximum ISS was a frozen amount for many years. However, from 20 September 2002 it was unfrozen and is indexed twice a year by the same percentage as Service Pension.

All recipients of income support payments are eligible for supplementary benefits, provided by the Australian Government, including some medical and hospital treatment, pharmaceutical benefits and the payment of a telephone allowance. They are also entitled to a range of concessions provided by state/territory and local governments. A number of additional supplementary benefits are also available, including Rent Assistance, Remote Area Allowance and Bereavement Payment.

Table 7.28 shows the total number of service pensions as at 30 June 2003, and table 7.29 shows the number of pensions and annual expenditure for the years 1993–94 to 2002–03.

### Defence Service Homes (DSH) Scheme

The DSH Scheme provides financial benefits to recognise the contribution of certain men and women who have served Australia in either peacetime or wartime. The benefits include housing loan interest subsidies, comprehensive homeowners insurance cover at competitive rates, and home contents insurance (table 7.30).

The Scheme was established in 1918 as the War Service Homes Scheme. In 1972 its name was changed to the DSH Scheme to recognise the extension of eligibility to those with qualifying peacetime service.

The Australian Government sold the DSH mortgage portfolio to Westpac Banking Corporation, which became the Scheme's lender on 19 December 1988. Under the Agreement between the Australian Government and Westpac, the Australian Government subsidises Westpac for the low-interest loans provided. The subsidy is paid directly to Westpac and represents the difference between the concessional interest rate paid by the borrower and the agreed benchmark interest rate.

Since 1918, the Defence Service Homes Act has made provision for DSH insurance. Building insurance is available to all persons eligible under the Defence Service Homes Act or the VEA. This benefit is also available to those who obtain assistance under the Defence Home Owner Scheme. DSH contents insurance, a comprehensive insurance package underwritten by QBE Mercantile Mutual Ltd, is available to veterans and the service community.

**7.28 SERVICE PENSIONS, By conflict — 30 June 2003**

	World War I	World War II(a)	Korea/Malaya and FESR(b)	Vietnam	Commonwealth and Allied	Post '72(d)	Unknown	Total
<b>Veterans</b>								
Old age	3	91 742	9 588	5 721	22 298	—	30	129 382
Permanently incapacitated	—	—	296	16 176	1 594	41	37	18 144
Tuberculosis(c)	—	87	3	—	1	—	—	91
<b>Total</b>	<b>3</b>	<b>91 829</b>	<b>9 887</b>	<b>21 897</b>	<b>23 893</b>	<b>41</b>	<b>67</b>	<b>147 617</b>
<b>Wives and widows</b>	<b>78</b>	<b>72 118</b>	<b>7 269</b>	<b>16 644</b>	<b>23 732</b>	<b>23</b>	<b>23</b>	<b>119 887</b>
<b>Total</b>	<b>81</b>	<b>163 947</b>	<b>17 156</b>	<b>38 541</b>	<b>47 625</b>	<b>64</b>	<b>90</b>	<b>267 504</b>

(a) Includes Australian Merchant Mariners. (b) Far East Strategic Reserve. (c) Eligibility on these grounds ceased on 2 November 1978. (d) Includes Gulf War and East Timor.

Source: Department of Veterans' Affairs.

**7.29 SERVICE PENSIONS AND EXPENDITURE**

	Pensions in force at 30 June			Annual expenditure(a) \$'000
	Veterans no.	Wives and widows no.	Total no.	
1993–94	204 793	148 184	352 977	2 382 307
1994–95	198 739	148 974	347 713	2 426 579
1995–96	192 342	145 481	337 823	2 609 460
1996–97	186 228	142 520	328 748	2 644 118
1997–98	179 673	138 906	318 579	2 602 122
1998–99	172 654	135 904	308 558	2 680 409
1999–2000	165 940	131 136	297 076	2 587 972
2000–01	161 655	129 040	290 695	2 832 326
2001–02	155 099	124 419	279 518	2 778 546
2002–03	147 617	119 887	267 504	2 802 200

(a) Includes associated allowances.

Source: Department of Veterans' Affairs.

The maximum loan available under the DSH Scheme is \$25,000 repayable over 25 years. The maximum interest rate is capped at 6.85% for the term of the loan and veterans are guaranteed an interest rate of 1.5% below market rates.

### Military Compensation and Rehabilitation Service (MCRS)

The objective of MCRS is to ensure that current and former members of the ADF, who suffer an injury or disease which is causally related to employment in the ADF, are provided with compensation and rehabilitation benefits and services. The MCRS is responsible for providing benefits through the *Safety, Rehabilitation and Compensation Act 1988* (Cwlth). Table 7.31 summarises activities under the MCRS for 2001–02.

The Safety, Rehabilitation and Compensation Act provides compensation cover for injury or disease sustained during peacetime service since 4 January 1949 and operational service since 7 April 1994. Once liability has been accepted for an injury, a range of benefits may or may not apply in an individual case:

- Weekly incapacity payments are made on the basis of ongoing evidence of loss of ability to earn, at a rate of 100% of pre-injury earning capacity for 45 aggregated weeks, less the current ability to earn. After 45 weeks the rate falls to 75% of pre-injury earning capacity if the client cannot work at all, gradually rising back up to 100% if some work is possible. Australian Government funded superannuation entitlements are deducted from the weekly compensation benefits which would otherwise be payable. Different entitlement regimes apply under transitional provisions for certain employees and periods prior to 1 December 1988.

- Permanent impairment payments are assessed in accordance with the approved guide. The minimum threshold is 10% whole of person impairment in most cases, with 100% attracting a maximum current entitlement of \$179,954. Other rates and criteria apply for impairments arising under the currency of predecessor legislation prior to 1 December 1988.
- Death benefits are payable to defined dependants of former and current members who die because of injuries arising from ADF employment. One payment up to a maximum current lump sum of \$196,313 is payable in respect of all eligible dependants. A funeral benefit of \$4,531 is also payable. A weekly amount of \$65.42 is payable to dependent children of the deceased.
- Additional Defence Act payments are available (with effect from 7 April 1994) to 'top up' payments for death of the deceased as well as permanent impairment payments to those with 'severe injuries'. The severe injury adjustment and additional death benefit increases the lump sum amount payable to \$235,895, with an additional \$58,973 for each dependent child.
- Medical benefits are payable in respect of the cost of medical treatment which is 'reasonably obtained' in relation to the accepted injury. Medical treatment is broadly defined.
- Rehabilitation services are provided where applicable in the form of programs designed to return injured employees as close as possible to pre-injury employment, mobility and lifestyle capacity. Programs include return to work retraining, and provision of medical and other aids and appliances as well as alterations to homes and motor vehicles.

### 7.30 DEFENCE SERVICE HOMES SCHEME

	Units	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
Subsidised loans									
Loans granted	no.	6 861	6 518	6 380	5 477	4 850	2 182	2 224	2 936
Loan accounts at 30 June	no.	96 518	91 029	80 802	73 530	69 677	63 468	57 096	51 120
Interest subsidy	\$m	53.0	29.2	12.2	17.2	15.4	14.7	12.0	10.5
Building insurance									
Homes insured at 30 June	no.	137 012	133 711	126 799	123 068	118 430	114 369	109 517	104 509

Source: Department of Veterans' Affairs.

- Household Service and Attendant Care benefits are available at a statutory rate payable to ensure that eligible injured members are able to maintain their household and/or remain in their home.
- Appeal and Review mechanisms are available for clients who do not agree with a decision made by MCGRS. Rights include access to an internal review followed by application to the Administrative Appeals Tribunal (AAT), with a mandatory conciliation step.
- veterans, mariners or nurses who served in World War I
- certain service pensioners
- veterans of post World War II conflicts who are 70 years of age or over and who have qualifying service.

War widow(er)s and certain other dependants of deceased veterans are also entitled to treatment for all conditions.

Younger veterans from post-World War II conflicts have needs additional to those of their older counterparts. These needs are addressed by a range of services which include integrated out-patient, in-patient and support services for the treatment and rehabilitation of veterans with war-related mental health conditions. Intensive in-patient treatment programs are available in each state. Community-based psychological services are provided by the Vietnam Veterans' Counselling Service and individual providers.

From July 2000 additional assistance is available for the Vietnam veteran community through a series of initiatives to support veterans and their families in response to the validated findings of the Vietnam Veterans' Health Study. These include mental health support for veterans, their partners and children, assistance with treatment costs for Vietnam veterans' children with spina bifida, cleft lip/palate, adrenal gland cancer and acute myeloid leukaemia, and preventive health programs for veterans. Children of Vietnam veterans also have increased access to the Veterans' Children Education Scheme and additional educational support through the Long Tan Bursary Scheme. The role of the Australian Centre for Post-traumatic Mental Health has been expanded to address mental health problems affecting the wider veteran community, and funding is being increased for research into veterans' health issues that may be the result of operational service.

Vocational rehabilitation services are available to support those who are leaving the ADF, those at risk of losing employment, and those who wish to return to the workplace. Rehabilitation Allowance may be available to people whose pension entitlement is affected — the intention is that no financial loss should be incurred by individuals taking up paid employment. Safety net arrangements enable a return to former pension status in the event that employment cannot be

### 7.31 MILITARY COMPENSATION AND REHABILITATION SERVICE, Activities — 2002–03

	no.
Total lump sum and incapacity payees at 30 June 2003 (incl. dependent children)	5 544
New primary injury claims received	6 012
New permanent impairment claims received	4 861
New rehabilitation referrals received	901
New reconsideration requests received	1 636
New applications made to the AAT	323
All accounts paid (incl. medical household services and attendant care)	90 051

Source: Department of Veterans' Affairs.

## Health program

Health care treatment is provided to people whose disabilities have been accepted by DVA as service-related, and 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.

In addition, and subject to certain conditions, health care treatment in Australia is provided to certain veterans of Australia's defence forces for all health conditions. Eligible veterans include:

- ex-prisoners of war
- veterans and mariners of World War II aged 70 years or over who have qualifying service from that conflict
- those receiving a Disability Pension at or above the maximum (100%) general rate
- World War II veterans and mariners receiving both a Service Pension at any rate and a Disability Pension at 50% rate or higher

sustained (this applies to pensioners receiving above general rate levels of Disability Pension or Service Pension through invalidity).

With the transfer of the Repatriation General Hospitals to the states, or their sale to the private sector, hospital care is provided through the Repatriation Private Patient Scheme. The Scheme provides acute hospital care for veterans or war widow(er)s' in local facilities. Under the Scheme, a veteran or war widow(er) may be admitted directly to a local public hospital, former repatriation hospital or a contracted private Tier 1 veteran partnering hospital, as a private patient, in a shared ward, with the doctor of his or her choice with no prior financial authorisation necessary. Treating doctors must still contact the Department for prior financial authorisation for admissions to registered psychiatric beds, respite care, cosmetic surgery, other specific treatments nominated in writing from time to time and treatment which does not attract a Medicare Benefits Schedule item number. In addition, because White Cardholders are only eligible for treatment of specific conditions for which the Department has accepted responsibility, approval should still be sought where eligibility is uncertain.

In short, the Repatriation Private Patient Scheme has an order of preference for hospital admissions according to three tiers:

*Tier 1* — all public hospitals, all former repatriation hospitals and selected veteran partnering private hospitals in all states.

*Tier 2* — contracted private hospitals.

*Tier 3* — non-contracted private hospitals.

Financial responsibility for hospital and medical treatment in a public hospital, a former repatriation hospital or a veteran partnering private hospital is accepted by the department with no cost to the patient. Should a veteran require hospital care, the treating doctor would be able to arrange treatment at an appropriate local facility.

On a state-by-state basis the Repatriation Commission sought tenders from private hospitals to be selected as veteran partnering hospitals, which allows the same access as public hospitals and former repatriation hospitals (where no prior financial authorisation is required for admission, once eligibility is established). These hospitals have been selected by the department because they are conveniently located for most veterans,

offer a full range of services at competitive rates, and perform consistently to industry-approved standards.

Under arrangements with state governments, entitled persons requiring custodial psychiatric care for a service-related disability are treated at departmental expense in state psychiatric hospitals.

Entitled persons may also be provided with dental treatment through the Local Dental Officer Scheme, which comprised approximately 6,920 local dental officers at 1 June 2003.

Optometrical services, including the provision of spectacles, the services of allied health professionals, and a comprehensive range of aids, appliances and dressings, may be provided to entitled persons.

In addition, entitled persons may be provided with pharmaceuticals through the Repatriation Pharmaceutical Benefits Scheme.

Through the Repatriation Transport Scheme entitled persons are eligible to receive transport assistance when travelling to receive approved medical treatment.

DVA also assists the veteran community through the Veteran and Community Grants Scheme, which aims to maintain and improve the independence and quality of life of members of the veteran and ex-service community through activities and/or services that sustain and/or enhance wellbeing. The grants focus on the delivery of funding through in-home and community streams. Veteran and Community Grants provide funding for projects that address the needs of members of the veteran and ex-service communities through a range of support initiatives. These may be through:

- promotion of health issues and healthy lifestyles
- supporting quality independent living at home
- support for carers
- reducing social isolation.

Veteran and Community Grants are intended to provide assistance to encourage the development of projects that will become financially viable and self-sufficient. Grant funds are not provided for recurrent or ongoing financial assistance. There are three funding rounds each financial year: in July, October and March.

Following a major review of the delivery of its health services in 1999, the DVA has placed considerable emphasis on health promotion activities. Its five-year strategic plan targets seven key health priorities. As part of its health promotion activities, DVA also produces a range of health promotion resource materials for the veteran community.

The Veterans' Home Care program provides a range of home support services including personal care, domestic assistance, home and garden maintenance and respite care. Other services, such as delivered meals, are provided under arrangements with state and territory governments. Veterans' Home Care services are available to eligible veterans and war widow(er)s who are assessed as needing care to remain in their homes.

Veterans' Home Care has a strong preventive focus, and particularly targets veterans and war widow(er)s with low-level care needs. The program delivers savings due to better health outcomes for veterans, reducing avoidable illness, injury and associated health costs. Better health

means that veterans spend less time in hospital and need fewer medications and other high cost services. More importantly, they are able to lead fuller, more active lives.

### **Vietnam Veterans' Counselling Service (VVCS)**

The VVCS provides counselling to veterans of all conflicts and their families, as well as working with the ex-service community to promote understanding and acceptance of veterans' problems.

The VVCS is staffed by psychologists and social workers who have specialised knowledge about military service, particularly in Vietnam, and its impact on veterans and their families.

Access to counselling services for rural veterans and their families was greatly improved with the establishment of the Country Outreach Program in 1988, followed soon after by a toll-free 1800 telephone link to all VVCS centres. Recent service enhancement initiatives include the creation of group programs aimed at promoting better health for veterans. Table 7.32 shows use of the VVCS.

**7.32 VIETNAM VETERANS' COUNSELLING SERVICE**

Type of counselling	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Centre-based consultation	(a)30 000	(a)30 000	(a)27 000	27 421	29 991	31 603	30 210
Group session consultation	784	500	485	891	678	1 011	940
Country outreach consultation	21 523	27 000	(a)26 000	26 885	28 063	31 353	36 314

(a) Estimates.

Source: Department of Veterans' Affairs.

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## 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, with its influence on investment levels, interest rates, building activity and employment.

The ways in which Australian families and individuals are housed reflect social, political and economic factors over the last century. For example, public health concerns towards the end of the 19th century resulted in legislation in the states which gave local government the authority to make building regulations and inspect dwellings, a responsibility they have to this day. Also at that time, demand for housing exceeded supply, rents were high, and overcrowding and slum conditions continued to be a problem into the 20th century. This led to states introducing further legislation for the provision of public rental housing for low income earners. In the 1920s, the Commonwealth Government moved to provide financial assistance for access to home ownership to moderate and low income groups, and a number of policy initiatives over recent decades have focused on this goal. 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.

The predominance of separate, free-standing houses situated on 'quarter-acre blocks' is a feature of Australian urban development. More recently, governments have moved to promote higher housing density, to provide greater choice of housing types and to make better use of existing infrastructure. This has resulted in changes to urban planning and building regulation. There have been some changes in the nature of housing, and efficiencies in the use of land and infrastructure. However, even within this new framework, green field developments and free-standing houses still predominate.

This chapter provides information on the types of dwellings Australians live in and their tenure arrangements, the affordability of housing, and the government assistance provided through housing and income support programs. It is based largely on information from the Australian Bureau of Statistics (ABS) 2000–01 Survey of Income and Housing Costs, but also draws on house price index data, data about finance commitments for owner occupation, and administrative data relating to public housing and rent assistance. Care should be taken when comparing statistics from different sources because of differences in the timing, conceptual bases and scope of individual statistical sources.

## Types of dwellings

Table 8.1 shows the different dwelling structure types in each state and territory in 2000–01. The table shows that the separate house is the most popular type of dwelling in Australia, making up almost 80% of all dwellings. Tasmania had the highest proportion of separate houses (88%) and the Northern Territory the lowest (68%).

Flats, units or apartments comprise 11% of dwellings in Australia. New South Wales (15%) had the highest proportion of flats, units or apartments, followed by the Northern Territory (14%). Western Australia, Tasmania and the Australian Capital Territory had relatively low percentages of flats, units or apartments (5–7%).

Semi-detached, row or terrace houses, and townhouses accounted for 10% of dwellings in Australia. There was a substantially greater proportion of semi-detached housing than of flats, units or apartments in Western Australia, South Australia and the Australian Capital Territory.

Conversely, New South Wales had substantially more flats, units or apartments than semi-detached housing.

## Number of bedrooms

One indicator of dwelling size is the number of bedrooms. In 2000–01, half of all dwellings in Australia had three bedrooms, 25% had four or more bedrooms and 20% had two bedrooms (table 8.2). Of separate houses, 57% had three bedrooms, while two bedroom dwellings were more common in semi-detached houses and in flats, units and apartments (46% and 64% respectively).

Nearly one-fifth (18%) of three bedroom dwellings had only one person living in them, over a third (38%) had only two persons, a further 19% had three persons, and 18% had four persons (table 8.3). Of two bedroom dwellings, most had one or two persons living in them (48% and 38% respectively).

### 8.1 ALL HOUSEHOLDS, By dwelling structure and state/territory — 2000–01

	Separate house	Semi-detached/row or terrace house/townhouse	Flat/unit/apartment	Total(a)	All households(a)
	%	%	%	%	'000
New South Wales	74.1	9.9	15.0	100.0	2 402.2
Victoria	81.1	8.7	10.0	100.0	1 841.7
Queensland	78.1	8.4	12.1	100.0	1 392.2
South Australia	79.6	12.4	7.8	100.0	610.7
Western Australia	80.5	14.1	5.4	100.0	708.4
Tasmania	88.4	*3.9	*6.7	100.0	190.0
Northern Territory(b)	67.6	*16.4	*13.6	100.0	55.8
Australian Capital Territory	78.6	*15.8	*5.3	100.0	114.0
<b>Australia</b>	<b>78.1</b>	<b>9.9</b>	<b>11.3</b>	<b>100.0</b>	<b>7 314.9</b>

(a) Includes other dwelling structures. (b) Excludes remote and sparsely settled areas.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

### 8.2 ALL HOUSEHOLDS, By dwelling structure and number of bedrooms — 2000–01

	Separate house	Semi-detached/row or terrace house/townhouse	Flat/unit/apartment	All households(a)
	'000	'000	'000	'000
One bedroom	51.2	61.7	208.1	339.6
2 bedrooms	606.2	334.5	525.7	1 493.5
3 bedrooms	3 262.7	294.9	78.7	3 642.4
4 or more bedrooms	1 791.7	32.4	n.p.	1 828.5
<b>Total(b)</b>	<b>5 711.8</b>	<b>723.5</b>	<b>825.0</b>	<b>7 314.9</b>

(a) Includes other dwelling structures. (b) Includes bedsits and dwellings with zero bedrooms.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

### 8.3 ALL HOUSEHOLDS, By number of persons and number of bedrooms — 2000–01

	One person %	Two persons %	Three persons %	Four persons %	Five or more %	Total %	All households '000
One bedroom	79.4	18.7	**1.2	n.p.	—	100.0	339.6
2 bedrooms	47.7	38.2	8.9	4.1	*1.1	100.0	1 493.5
3 bedrooms	18.5	37.8	18.7	18.2	6.8	100.0	3 642.4
4 or more bedrooms	7.5	23.9	17.4	27.5	23.8	100.0	1 828.5
<b>Total(a)</b>	<b>24.6</b>	<b>33.5</b>	<b>15.5</b>	<b>16.8</b>	<b>9.6</b>	<b>100.0</b>	<b>7 314.9</b>

(a) Includes bedsits and dwellings with zero bedrooms.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

## Home ownership and renting

Of the 7.3 million households in Australia in 2000–01, 70% were living in their own home, and 26% were renting their dwelling from a private landlord or a state or territory housing authority (table 8.4).

In 2000–01, 38% of households owned their homes outright. In addition, 32% of households were paying off a mortgage or loan secured against their dwelling.

Of the approximately two million households renting their dwellings, 77% were renting from a private landlord, 18% were renting from a state or territory housing authority and the remaining 5% from other landlords such as the owner/manager of a caravan park, an employer (including a

government authority) or a community or church group.

Almost 90% of owners lived in separate houses in 2000–01. Of renter households, 52% lived in separate houses and 28% lived in flats, units or apartments.

Over one-third of households (34%) that owned their own home outright were couples with no children. One-parent households accounted for only 3% of outright owners, and lone-person households made up 28% (based on table 8.5).

For couple households with dependent children only, the majority (79%) were owners, while 19% were renting. Of one-parent families, 40% were home owners, 41% were renting from a private landlord and 16% were renting from a state or territory housing authority.

### 8.4 ALL HOUSEHOLDS, By dwelling structure and tenure and landlord type — 2000–01

Tenure and landlord type	Separate house '000	Semi-detached/row or terrace house/ townhouse '000	Flat/unit/ apartment '000	All households(a) '000
Owner without a mortgage	2 457.3	171.6	138.3	2 796.9
Owner with a mortgage	2 104.4	137.5	103.8	2 350.5
Renter				
State/territory housing authority	185.4	88.7	89.1	363.2
Private landlord	787.8	294.8	445.1	1 536.3
Total(b)	1 034.7	395.1	560.5	2 001.4
Other tenure(c)	115.4	*19.3	22.4	166.1
<b>Total</b>	<b>5 711.8</b>	<b>723.5</b>	<b>825.0</b>	<b>7 314.9</b>

(a) Includes other dwelling structures. (b) Includes other landlord types. (c) Includes rent free and life tenure.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

## 8.5 ALL HOUSEHOLDS, By tenure and landlord type and household composition — 2000–01

	Owner			Renter			All households '000
	Without a mortgage '000	With a mortgage '000	State/ territory housing authority '000	Private landlord '000	Total(a) '000	Other tenure(b) '000	
Couple, one family							
Couple only	963.7	491.6	33.9	237.5	283.8	36.0	1 775.0
Couple with dependent children only	348.6	975.8	40.6	262.2	321.4	24.5	1 670.3
Couple — other(c)	420.7	295.9	**19.5	80.5	109.8	n.p.	828.5
Total	1 733.0	1 763.3	94.0	580.3	715.0	62.6	4 273.8
One parent, one family(d)	74.9	143.7	86.0	220.3	317.1	**6.1	541.8
Lone person	793.6	283.5	143.9	464.7	647.6	77.1	1 801.8
Other	195.4	160.1	39.4	270.9	321.7	20.3	697.5
<b>Total</b>	<b>2 796.9</b>	<b>2 350.5</b>	<b>363.2</b>	<b>1 536.3</b>	<b>2 001.4</b>	<b>166.1</b>	<b>7 314.9</b>

(a) Includes other landlord types. (b) Includes rent free and life tenure. (c) Includes couples with non-dependent children and may include other family members. (d) Includes one-parent families with dependants or non-dependent children and may include other family members.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

Tenure patterns vary across states and territories. Victoria, South Australia and the Australian Capital Territory had a high proportion of overall home ownership, each having 75% of dwellings either owned outright or owned with a mortgage (table 8.6). The lowest proportion of overall home ownership (52%) was in the Northern Territory. The Australian Capital Territory, Western Australia and Victoria had the highest proportion of households with a mortgage on their home (42%, 35% and 35% respectively).

The Northern Territory had the highest proportion of renters at 45%. This was considerably higher than the national rate of 27%. The proportion of households renting from private landlords ranged from 14% in South Australia to 28% in Queensland and the Northern Territory.

The differences in tenure partly reflect differences in the age and life structures across states and territories (see *Housing and life cycle*).

## 8.6 ALL HOUSEHOLDS, By tenure and landlord type and state/territory — 2000–01

	Owner			Renter			Total	All households '000
	Without a mortgage %	With a mortgage %	State/ territory housing authority %	Private landlord %	Total(a) %	Other tenure(b) %		
New South Wales	40.2	29.6	5.0	21.4	27.8	2.4	100.0	2 402.2
Victoria	39.5	35.0	4.4	17.9	23.5	2.1	100.0	1 841.7
Queensland	34.2	29.8	4.4	28.2	34.1	1.9	100.0	1 392.2
South Australia	40.6	34.7	6.1	14.0	22.2	2.5	100.0	610.7
Western Australia	35.2	35.3	4.1	21.2	26.9	2.6	100.0	708.4
Tasmania	42.0	29.0	*9.5	15.7	26.2	*2.8	100.0	190.0
Northern Territory(c)	21.1	30.5	*15.4	28.0	45.1	**3.3	100.0	55.8
Australian Capital Territory	33.7	41.6	*7.0	16.0	23.3	**1.3	100.0	114.0
<b>Australia</b>	<b>38.2</b>	<b>32.1</b>	<b>5.0</b>	<b>21.0</b>	<b>27.4</b>	<b>2.3</b>	<b>100.0</b>	<b>7 314.9</b>

(a) Includes other landlord type. (b) Includes rent free and life tenure. (c) Excludes remote and sparsely settled areas.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

## Housing costs and income

Housing costs cover different items for different types of tenure. For owners who have no mortgage, housing costs comprise the rates paid. For owners with a mortgage, housing costs consist of the value of the mortgage payments as well as property rates. For households renting their dwelling, housing costs comprise the regular rental amounts paid to landlords.

In the 2000–01 Survey of Income and Housing Costs, owners with a mortgage reported average housing costs of \$220 per week, somewhat higher than the average housing costs for other forms of tenure (table 8.7). Households renting from private landlords had average weekly housing costs of \$173, compared to \$73 for tenants of state or territory housing authorities.

**8.7 OWNER AND RENTER HOUSEHOLDS, Housing costs by household composition — 2000–01**

Tenure and landlord type	Couple, one family					Lone person	Other	Total
	Couple only	Couple with dependent children only	Couple — other	Total couples, one family	One parent, one family			
AVERAGE WEEKLY HOUSING COSTS (\$)								
Owner without a mortgage	22	29	29	25	26	18	25	23
Owner with a mortgage	230	233	210	229	179	180	232	220
Renter — state/territory housing authority	79	108	123	100	72	47	105	73
Renter — private landlord	197	184	227	195	165	140	188	173
<i>Total renters(a)</i>	179	169	197	177	137	115	176	150
<b>Total owner and renter households</b>	<b>107</b>	<b>177</b>	<b>116</b>	<b>136</b>	<b>133</b>	<b>81</b>	<b>145</b>	<b>123</b>
AVERAGE GROSS WEEKLY INCOME (\$)								
Owner without a mortgage	699	1 395	1 550	1 046	688	370	1 126	850
Owner with a mortgage	1 349	1 335	1 821	1 421	829	742	1 460	1 305
Renter — state/territory housing authority	436	664	948	640	398	199	607	404
Renter — private landlord	1 069	1 077	1 448	1 126	606	532	1 137	873
<i>Total renters(a)</i>	988	1 040	1 350	1 067	547	446	1 068	784
<b>Total owner and renter households</b>	<b>930</b>	<b>1 290</b>	<b>1 621</b>	<b>1 206</b>	<b>642</b>	<b>459</b>	<b>1 177</b>	<b>981</b>
AVERAGE HOUSING COSTS AS A PROPORTION OF INCOME (%)								
Owner without a mortgage	3	2	2	2	*4	5	2	3
Owner with a mortgage	17	17	12	16	22	24	16	17
Renter — state/territory housing authority	*18	16	**13	16	18	24	*17	18
Renter — private landlord	18	17	16	17	27	26	17	20
<i>Total renters(a)</i>	18	16	15	17	25	26	16	19
<b>Total owner and renter households</b>	<b>11</b>	<b>14</b>	<b>7</b>	<b>11</b>	<b>21</b>	<b>18</b>	<b>12</b>	<b>13</b>
HOUSEHOLDS ('000)								
Owner without a mortgage	963.7	348.6	420.7	1 733.0	74.9	793.6	195.4	2 796.9
Owner with a mortgage	491.6	975.8	295.9	1 763.3	143.7	283.5	160.1	2 350.5
Renter — state/territory housing authority	33.9	40.6	*19.5	94.0	86.0	143.9	39.4	363.2
Renter — private landlord	237.5	262.2	80.5	580.3	220.3	464.8	270.9	1 536.3
<i>Total renters(a)</i>	283.8	321.4	109.8	715.0	317.1	647.6	321.7	2 001.4
<b>Total owner and renter households</b>	<b>1 739.0</b>	<b>1 645.8</b>	<b>826.4</b>	<b>4 211.2</b>	<b>535.7</b>	<b>1 724.7</b>	<b>677.2</b>	<b>7 148.8</b>
HOUSEHOLD AND DWELLING SIZE (no.)								
Average persons in household	2.0	4.0	4.0	3.2	3.0	1.0	2.7	2.6
Average bedrooms in dwelling	3.0	3.4	3.6	3.3	3.0	2.4	3.0	3.0

(a) Includes other landlord types.

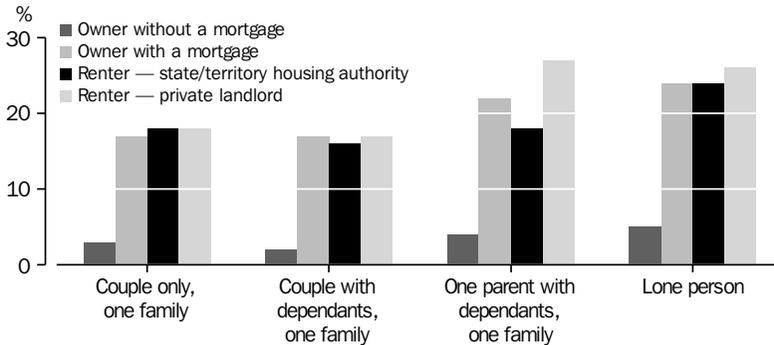
Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

For many households, weekly housing costs are a significant proportion of their gross weekly income. In 2000–01, housing costs represented 17% of gross weekly income for owners with a mortgage, 18% of gross weekly income for tenants of a state or territory housing authority and 20% of gross weekly income for tenants renting from a private landlord (table 8.7). Housing costs as a

proportion of income differed depending on tenure type, landlord type and household composition (graph 8.8 and table 8.9).

See also *Housing costs — capital cities*, which focuses on capital city households, drawing on results from the same survey.

**8.8 AVERAGE HOUSING COSTS AS A PROPORTION OF INCOME,  
By tenure and landlord type, and household composition — 2000–01**



Source: ABS data available on request, *Survey of Income and Housing Costs, 2000–01*.

**8.9 OWNER AND RENTER HOUSEHOLDS, Housing costs as a proportion of income — 2000–01**

Housing costs as a proportion of income	Units	Owner without a mortgage	Owner with a mortgage	Renter			Total
				State/territory housing authority	Private landlord	Total(a)	
25% or less	%	97.6	70.9	79.5	57.4	62.5	79.0
More than 26–30%	%	*0.3	9.1	11.7	9.5	9.8	5.9
More than 31–50%	%	0.6	13.4	7.7	21.9	18.7	9.9
More than 50%	%	1.5	6.6	**1.1	11.3	9.0	5.3
Total(b)	%	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	'000	2 796.9	2 350.5	363.2	1 536.3	2 001.4	7 148.8

(a) Includes other landlord types. (b) Includes households with nil or negative total income.

Source: ABS data available on request, *Survey of Income and Housing Costs, 2000–01*.

## Housing and life cycle

As people progress through different life-cycle stages and their family structures and financial situations change, so do their housing needs and preferences. An understanding of the relationships between life-cycle stage, income, housing costs and level of investment in home ownership can be useful in developing policies which enable home purchase among those who would otherwise find this difficult.

There are long-term benefits in home ownership. Initially, the cost of home purchase is often far greater than 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 factors in the ongoing economic wellbeing of many Australians, particularly as many retire on considerably reduced incomes.

In the 2000–01 Survey of Income and Housing Costs, ongoing housing costs comprised:

- mortgage or loan repayments (secured or unsecured) where the purpose of the loan was to buy or build, add to or alter the dwelling
- rental payments
- water and general council rates.

Only payments which related to the dwelling occupied at the time of the survey interview were included.

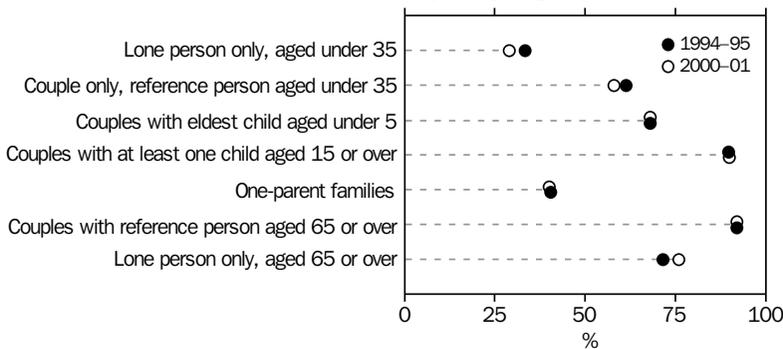
The survey estimated that the average weekly housing costs for all households were \$123. Outright owners (those without a mortgage) had the lowest average weekly housing costs (\$23), while those with a mortgage had the highest costs, spending an average of \$220 per week. On average, those households that were renting paid \$150 per week in housing costs (table 8.7).

Most Australian households live in separate houses (78% in 2000–01). However, as with tenure, the type and size of dwellings and housing costs vary across different life-cycle groups.

The life-cycle groups whose housing circumstances are discussed in this section include:

- lone person aged under 35 years
- couple only, reference person aged under 35 years
- couple, eldest child aged under 5 years
- couple, at least one dependent child aged 15 years or over
- lone-parent family with dependent children
- couple only, reference person aged 65 years or over
- lone person aged 65 years or over.

**8.10 HOME OWNERS, By life-cycle group**



Source: ABS data available on request, Surveys of Income and Housing Costs, 1994–95 and 2000–01.

*Dependent children* are children aged under 15 years plus full-time students aged 15–24 years living with a parent and without a partner or child of their own in the household.

The *reference person* for each household is chosen by applying, to all usual residents aged 15 years and over in the household, the selection criteria below, in order of precedence:

- the person with the highest tenure type ranked from owner without a mortgage, owner with a mortgage, renter, other tenure, or
- the person with the highest income, or
- the oldest person.

In 2000–01, 70% of Australian households owned their homes (table 8.6). The tenure of a household is strongly related to life-cycle stages, generally following a pattern of renting in early adulthood, moving to home purchase and mortgages as partnerships are formed and children are born, and owning the home outright in older age. However for some, family breakdown disrupts this pattern.

Between 1994–95 and 2000–01, the home ownership rates of various life-cycle groups showed little change. However, there were exceptions. For young households, both lone person and couples without children, the rate fell (33% to 29% and 61% to 58% respectively). For older (aged 65 and over) lone-person households, the rate increased from 71% to 76% (graph 8.10).

### **Young households (under 35 years)**

In 2000–01, young lone-person and couple-only households (those with a reference person aged under 35 years), comprised about 10% of all households in Australia (each group around 5%). People in these households are generally more mobile. Many are studying or starting their careers, and are likely to be on lower incomes than they will be at later stages in their lives. In many cases, they are yet to move into home ownership.

Young lone-person households were most likely of all life-cycle groups to be renting (66%), with most of these (92%) renting from private landlords (table 8.11). Less than one-third of young lone-person households had moved into home ownership, and most that had, did so with a

mortgage. However, young people are more inclined to move into home ownership as they form couples. Just over half of young couple households without children owned their own home. As was the case for young lone-person households, most of these couples had a mortgage.

In keeping with their larger household size, young couples without children lived in dwellings where the average number of bedrooms was higher than for young lone persons (2.7 compared with 2.1). Young couple households without children were also more likely than young lone-person households to live in separate dwellings (65% compared with 33%), with the majority of young singles living in semi-detached dwellings or flats.

Reflecting their lower household incomes, young lone persons spent on average over a fifth (23%) of their income on housing. Young couple households without children (many of whom are on dual incomes) on average spent a lower proportion of their income on housing costs (18%) than young lone-person households, despite the fact that they had much higher average weekly housing costs (\$234 compared to \$150).

### **Families with children**

As families are formed and grow, housing needs and preferences change. The birth of children increases family size and often results in the household shifting back to dependence on a single income when children are very young. The trend to home purchase and moving into larger dwellings increases as couples and their children grow older. At this time, parents' incomes are likely to be higher than those in younger life-cycle groups due to their more established careers and the move of parents (mainly mothers) back into the workforce and full-time employment.

Of couple families with all children aged under 5 years, 68% were home owners (59% were paying off a mortgage) (table 8.12). Among households containing couple families with older children (at least one aged 15 years or over), home ownership was higher (90%) than for those with younger children and over a third (37%) owned their home outright.

### 8.11 YOUNG PEOPLE, Selected characteristics — 2000–01

	Units	Household composition	
		Lone person aged under 35 years	Couple only, reference person aged under 35 years
<b>Tenure type</b>			
Owner without a mortgage	%	6.9	6.9
Owner with a mortgage	%	22.6	50.9
Renters	%	66.0	39.4
<b>Average housing costs as a proportion of income</b>			
Owner without a mortgage	%	*3	**5
Owner with a mortgage	%	28	20
Renters	%	25	17
All households	%	23	18
<b>Proportion of income spent on housing costs</b>			
25% or less	%	51.7	74.5
More than 50%(a)	%	13.8	*4.6
<b>Proportion in a separate house</b>	%	33.3	64.9
<b>Average weekly housing costs</b>			
Owner without a mortgage	\$	18	**52
Owner with a mortgage	\$	257	297
Renters	\$	137	201
All households	\$	150	234
<b>Average bedrooms in dwelling</b>	no.	2.1	2.7
<b>Total households</b>	<b>'000</b>	<b>331.5</b>	<b>374.3</b>

(a) Includes households with nil or negative total income.

Source: ABS data available on request, *Survey of Income and Housing Costs, 2000–01*.

Income levels vary considerably over a person's life cycle. Household incomes for couples, and hence their capacity to pay for larger, more expensive homes, usually increase as their children grow older. In 2000–01, most couple households with young children lived in separate houses and in homes with three or more bedrooms (87% and 85% respectively). However, couple households with older dependent children were even more likely to do so (96% and 98% respectively). Despite this, housing costs for couple households with young children were generally higher (\$200 on average per week, representing 17% of their average weekly income) than for couples with older children (\$141 which constituted 9% of their weekly income). This is likely to reflect the fact that couple households with young children usually have less equity in their homes than couples with older children. The former households are also more likely to have bought their home more recently and therefore to have purchased their house at a higher price.

For those who owned a house, average weekly housing costs for couples with young children ranged from \$255 for those with a mortgage to

\$26 for those without a mortgage. For couples with older children, average weekly housing costs ranged from \$211 for those with a mortgage to \$28 for those without a mortgage. In contrast, households containing couple families which were renting had similar costs regardless of the age of children present.

When families are disrupted through divorce or separation, the trend towards home ownership is often reversed, reflecting reduced household incomes and the splitting of family assets. As a result, the household may move from home ownership back to renting, and also into a smaller, more affordable home. Lone-parent households with dependent children were more likely to be renting (59%) than to own their home (40%), and they were the life-cycle group most likely to be renting through a state or territory housing authority (16%). In 2000–01, while most lone-parent households with dependent children lived in separate dwellings (77%) and in dwellings with at least three bedrooms (83%), these proportions were lower than for couples with dependent children.

Average weekly housing costs for lone-parent households with dependent children were \$131, or 20% of their average weekly income. Among these households, private renters paid \$165, on average, in housing costs which represented 27% of average weekly income. Lone-parent households with dependent children were more than three times as likely as couple households with at least one dependent child aged 15 years or over to spend more than 25% of their income on housing (41% compared with 12%). Just 8% of lone-parent households with dependent children spent more than 50% of their income on housing.

### Older persons (65 years and over)

Home ownership is very high among older people, with outright ownership by far the most common tenure type for Australians aged 65 years

and over. The benefits of this to older people include lower housing costs, security of tenure, and having an asset that may be realised for future expenditure or passed on to later generations as inheritance.

In 2000–01, older persons living in a couple only household (those where the reference person was aged 65 years or over) had very high ownership rates (92%), with 89% owning their home outright. Older lone-person households (which are often formed when a partner dies) had a home ownership rate of 77%, with 74% owning their home outright. Older lone-person households were more likely to be renting than older couple only households (19% compared with 6%), with 9% of older people living alone renting from state or territory housing authorities.

## 8.12 FAMILIES WITH CHILDREN, Selected characteristics — 2000–01

	Units	Household composition		
		Couple with eldest child aged under 5 years	Couple with at least one dependent child aged 15 years or over	Lone parent with dependent children
<b>Tenure type</b>				
Owner without a mortgage	%	8.9	36.8	13.8
Owner with a mortgage	%	59.4	53.6	26.5
Renters	%	30.0	8.7	58.5
<b>Average housing costs as a proportion of income</b>				
Owner without a mortgage	%	*2	2	*4
Owner with a mortgage	%	21	12	22
Renters	%	15	*16	25
All households	%	17	9	20
<b>Proportion of income spent on housing costs</b>				
25% or less	%	68.6	89.5	58.7
More than 50%(a)	%	5.1	*1.6	8.0
Proportion in a separate house	%	87.1	95.5	77.2
<b>Average weekly housing costs</b>				
Owner without a mortgage	\$	26	28	26
Owner with a mortgage	\$	255	211	179
Renters	\$	155	196	137
All households	\$	200	141	131
Average persons in household	no.	3.4	4.4	3.0
Average bedrooms in dwelling	no.	3.1	3.7	3.0
<b>Total households</b>	<b>'000</b>	<b>415.1</b>	<b>661.4</b>	<b>541.8</b>

(a) Includes households with nil or negative total income.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

In 2000–01, the average weekly income of older person households was lower than for any other life-cycle group (reflecting the likelihood that household members had retired). However, average weekly housing costs for this group were also lower than for other life-cycle groups (\$23 for couple households and \$26 for lone-person households). Even for those older person households with a mortgage, average weekly housing costs were relatively low (\$55 for older couple households and \$46 for older lone-person households) (table 8.13). This partly reflects the fact that many of these households purchased their first home some decades earlier when home prices and mortgages were considerably lower. However, for the small proportion who were renting, housing payments consumed a relatively large proportion of their incomes. The 7% of older lone-person households that were renting from private landlords spent a very high proportion of their income (36%) on housing costs.

Reflecting their smaller household size, the homes of older lone-persons were more likely to be smaller than those of older couples. Older lone-persons were less likely to live in separate dwellings than older couples (64% compared with 88%), and more likely to be living in dwellings with fewer bedrooms than older couples (2.4 bedrooms on average compared with 3.0).

For many older people, the onset of diminished health and disabilities, and the need for security and ready access to services such as public transport, are often key considerations in their choice of housing, especially after the death of a partner. The growing proportion of older persons (in particular of persons aged 80 years and over) in Australia has led to the emergence of new types of housing such as self-care dwellings in retirement villages. Results from the 2001 census show there were 62,570 occupied dwellings of this type.

### 8.13 OLDER PEOPLE, Selected characteristics — 2000–01

	Units	Household composition	
		Couple only, reference person aged 65 years or over	Lone person aged 65 years or over
<b>Tenure type</b>			
Owner without a mortgage	%	88.5	73.7
Owner with a mortgage	%	*3.3	2.8
Renters	%	5.9	19.0
<b>Average housing costs as a proportion of income</b>			
Owner without a mortgage	%	4	6
Owner with a mortgage	%	*11	*19
Renters	%	22	28
All households	%	5	9
<b>Proportion of income spent on housing costs</b>			
25% or less	%	97.5	89.7
More than 50%(a)	%	*1.1	*2.0
<b>Proportion in a separate house</b>	%	88.0	64.1
<b>Average weekly housing costs</b>			
Owner without a mortgage	\$	19	16
Owner with a mortgage	\$	55	*46
Renters	\$	88	66
All households	\$	23	26
<b>Average bedrooms in dwelling</b>	no.	3.0	2.4
<b>Total households</b>	'000	<b>569.9</b>	<b>694.6</b>

(a) Includes households with nil or negative total income.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

## Housing costs — capital cities

In 2000–01, the average weekly housing costs for households in all capital cities were \$138 (table 8.14). However, there was considerable variation between capital cities. Hobart had the lowest average housing costs at \$79 per week.

Sydney had the highest average weekly housing costs for most tenure and landlord types.

Canberra recorded the second highest average weekly housing costs for total households (\$140 compared to Sydney's \$170), partially reflecting the larger proportion of households in Canberra with mortgages on their homes.

### 8.14 CAPITAL CITY OWNER AND RENTER HOUSEHOLDS, Housing costs — 2000–01

Tenure and landlord type	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Canberra	All capital cities(a)
<b>AVERAGE WEEKLY HOUSING COSTS (\$)</b>								
Owner without a mortgage	29	23	28	20	20	21	28	25
Owner with a mortgage	316	228	210	182	218	158	226	244
Renter — state/territory housing authority	81	73	72	67	55	70	74	74
Renter — private landlord	246	175	168	141	147	130	180	192
Total renters(b)	215	156	148	116	134	104	148	167
<b>Total owner and renter households</b>	<b>170</b>	<b>128</b>	<b>127</b>	<b>103</b>	<b>126</b>	<b>79</b>	<b>140</b>	<b>138</b>
<b>AVERAGE GROSS WEEKLY INCOME (\$)</b>								
Owner without a mortgage	1 049	944	814	743	1 011	804	1 259	962
Owner with a mortgage	1 624	1 372	1 271	1 144	1 247	1 049	1 566	1 396
Renter — state/territory housing authority	432	358	404	372	280	362	360	397
Renter — private landlord	1 064	890	847	789	876	776	1 029	935
Total renters(b)	951	786	773	651	789	601	830	827
<b>Total owner and renter households</b>	<b>1 199</b>	<b>1 059</b>	<b>940</b>	<b>869</b>	<b>1 044</b>	<b>803</b>	<b>1 287</b>	<b>1 072</b>
<b>AVERAGE HOUSING COSTS AS A PROPORTION OF INCOME (%)</b>								
Owner without a mortgage	3	2	3	3	2	3	2	3
Owner with a mortgage	19	17	17	16	18	15	14	18
Renter — state/territory housing authority	*19	*20	*18	*18	*20	*19	*21	19
Renter — private landlord	23	20	20	18	17	*17	17	21
Total renters(b)	23	20	19	18	17	17	18	20
<b>Total owner and renter households</b>	<b>14</b>	<b>12</b>	<b>14</b>	<b>12</b>	<b>12</b>	<b>10</b>	<b>11</b>	<b>13</b>
<b>HOUSEHOLDS ('000)</b>								
Owner without a mortgage	582.9	532.3	205.1	173.7	181.7	35.7	38.4	1 761.5
Owner with a mortgage	441.5	465.9	189.4	163.2	196.4	18.8	47.5	1 539.7
Renter — state/territory housing authority	72.4	53.6	36.0	27.8	17.5	10.2	8.0	234.0
Renter — private landlord	328.2	251.0	175.3	69.0	111.5	12.1	18.2	980.9
Total renters(b)	406.0	311.7	220.3	105.5	132.5	23.1	26.6	1 250.7
<b>Total owner and renter households</b>	<b>1 430.4</b>	<b>1 309.8</b>	<b>614.7</b>	<b>442.4</b>	<b>510.5</b>	<b>77.6</b>	<b>112.5</b>	<b>4 551.9</b>

(a) Includes households in the NT, for which disaggregated data are not sufficiently accurate for most purposes. (b) Includes other landlord type.

Source: ABS data available on request, *Survey of Income and Housing Costs, 2000–01*.

## House prices

House price indexes enable the comparison of price changes between cities, though not the price levels themselves.

From 2001–02 to 2002–03, the price index of established houses increased in all capital cities (table 8.15).

Brisbane recorded the greatest rise in established house prices, increasing by 24.7% in 2002–03. Other capital city price rises were in Adelaide (21.7%), Sydney (21.2%), Canberra (19.7%), Perth (13.0%), Hobart (12.1%), Melbourne (11.7%), and Darwin (6.9%). The weighted average of eight capitals index rose by 17.9%.

This was the highest percentage increase over a financial year since 1988–89.

In 2002–03, project home prices (cost of new dwellings excluding land) rose in all capital cities (table 8.16). Hobart recorded the largest increase (9.2%), followed by Brisbane (7.0%), Canberra (6.3%), Darwin (5.5%), Adelaide (5.2%), Melbourne (3.6%), Perth (3.2%), and Sydney (2.8%). The index for the weighted average of eight capitals rose by 4.3%.

The price index of materials used in house building is discussed in *Chapter 19, Construction*.

### 8.15 PRICE INDEXES FOR ESTABLISHED HOUSES(a)

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Weighted average of eight capital cities
INDEX NUMBER									
2000–01	163.8	159.1	149.4	131.1	133.9	134.2	198.7	149.1	152.8
2001–02	192.2	193.7	169.8	150.1	145.5	140.1	204.2	173.1	178.0
2002–03	233.0	216.4	211.8	182.6	164.4	157.1	218.2	207.2	209.9
CHANGE FROM PREVIOUS YEAR (%)									
2000–01	7.0	10.0	5.1	6.4	6.4	4.0	-0.3	8.8	7.4
2001–02	17.3	21.7	13.7	14.5	8.7	4.4	2.8	16.1	16.5
2002–03	21.2	11.7	24.7	21.7	13.0	12.1	6.9	19.7	17.9

(a) Reference base year is 1989–90 = 100.0.

Source: *House Price Indexes: Eight Capital Cities (6416.0)*.

### 8.16 PRICE INDEXES FOR PROJECT HOMES(a)

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Weighted average of eight capital cities
INDEX NUMBER									
2000–01(b)	138.4	136.9	132.0	141.9	126.2	140.7	156.8	153.5	134.9
2001–02	141.3	142.1	133.5	148.2	128.8	145.1	158.5	161.3	138.1
2002–03	145.2	147.2	142.9	155.9	132.9	158.5	167.2	171.4	144.1
CHANGE FROM PREVIOUS YEAR (%)									
2000–01(b)	12.4	12.2	11.7	11.6	9.9	11.5	9.5	16.4	11.8
2001–02	2.1	3.8	1.1	4.4	2.1	3.1	1.1	5.1	2.4
2002–03	2.8	3.6	7.0	5.2	3.2	9.2	5.5	6.3	4.3

(a) Reference base year is 1989–90 = 100.0. (b) The 2000–01 data were affected by the introduction of The New Tax System, in particular, the introduction of the Goods and Services Tax (GST) from 1 July 2000.

Source: *House Price Indexes: Eight Capital Cities (6416.0)*.

## Value of dwellings

In the 2000–01 Survey of Income and Housing Costs, owners were asked to estimate the value of their dwelling. These estimates may differ significantly from valuations made by accredited valuers and from an achievable sale price of the dwelling. The extent of the possible difference has not been measured. Therefore some care needs to be exercised in the use of these data.

The median owner-estimated value of dwellings for capital cities was \$200,000, 10% higher than the national median (\$180,000). The median value was highest in Sydney at \$320,000 and lowest in Hobart at \$130,000 (table 8.17).

## Housing finance for owner occupation and investment

In 2002–03, a total of 629,859 housing finance commitments were made by all lenders, down slightly on the previous year total of 630,764. The total value of commitments increased to \$106,659m, up from \$96,482m in 2001–02. The average loan size increased to \$169,340 in 2002–03, rising from \$152,960 in 2001–02.

Construction finance commitments weakened throughout 2002–03, falling by 16.8% from the previous year to 64,532 commitments. Commitments to purchase new dwellings fell by 13.5% from 2002–03 to 17,526. The total value of commitments fell only slightly to \$10,911m

(down 5.4%) for the construction of dwellings and \$3,429m (down 2.3%) for the purchase of new dwellings.

The strongest housing finance growth was recorded for the purchase of established dwellings. The number of commitments recorded for 2002–03 rose to 547,801 an increase of 2.8% from 2001–02. The total value of commitments also continued to grow, increasing by 13.4% in 2002–03 to reach \$92,318m. The total value of housing finance commitments for established dwellings increased by 43.6% from the level recorded in 2000–01. The average loan size for the purchase of established dwellings increased to \$168,520 in 2002–03, rising from \$152,810 in 2001–02.

In number terms, bank commitments fell by 2.1% in 2002–03, while commitments from permanent building societies fell by 5.2%. Other lenders, which include credit unions and wholesale lenders, increased by 8.5% in the 2002–03 financial year, capturing 21.6% of the housing lending market. In results similar to the last financial year, the average housing loan size for banks increased the most of the three lending types, up 13.1% to \$175,680.

There were 99,488 commitments to first home buyers in 2002–03, down on the previous year total of 142,318. First home buyers accounted for 15.8% of all commitments for owner occupied housing in 2002–03, down from the 2001–02 figure of 22.6%.

**8.17 CAPITAL CITY OWNER HOUSEHOLDS, Value of dwelling(a) by dwelling structure — 2000–01**

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Canberra	Capital city owner households(b)	Total owner households
MEDIAN ESTIMATED VALUE OF DWELLING (\$'000)									
Separate house	320.0	200.0	150.0	140.0	180.0	135.0	200.0	200.0	180.0
Semi-detached/row or terrace house/townhouse	350.0	200.0	*120.0	120.0	140.0	**100.0	*135.0	200.0	180.0
Flat/unit/apartment	260.0	178.0	*110.0	*110.0	*130.0	n.p.	n.p.	200.0	185.0
Total(c)	320.0	200.0	150.0	140.0	180.0	130.0	180.0	200.0	180.0
NUMBER ('000)									
Households	1 024.4	998.1	394.4	336.9	378.1	54.5	85.9	3 301.2	5 147.4

(a) As reported by owners. (b) Includes households in the NT, for which data are not available separately due to high sampling error. (c) Includes other dwelling structure.

Source: ABS data available on request, Survey of Income and Housing Costs, 2000–01.

## 8.18 SECURED HOUSING FINANCE COMMITMENTS(a), By purpose and type of lender(b)

	Type of lender				Total
	Units	Banks	Permanent building societies	Other lenders(c)	
<b>CONSTRUCTION OF DWELLINGS</b>					
Dwelling units					
1999–2000	no.	65 673	3 276	6 733	75 682
2000–01	no.	44 127	2 755	6 105	52 987
2001–02	no.	66 009	3 697	7 861	77 567
2002–03	no.	55 287	2 608	6 637	64 532
Value of commitments					
1999–2000	\$m	9 293	474	850	10 617
2000–01	\$m	6 088	412	894	7 394
2001–02	\$m	9 873	548	1 111	11 532
2002–03	\$m	9 539	417	955	10 911
<b>PURCHASE OF NEWLY ERECTED DWELLINGS</b>					
Dwelling units					
1999–2000	no.	17 313	300	920	18 533
2000–01	no.	14 656	475	2 566	17 697
2001–02	no.	16 823	283	3 154	20 260
2002–03	no.	14 058	379	3 089	17 526
Value of commitments					
1999–2000	\$m	2 666	48	127	2 841
2000–01	\$m	2 322	55	361	2 738
2001–02	\$m	3 029	39	443	3 511
2002–03	\$m	2 914	56	459	3 429
<b>PURCHASE OF ESTABLISHED DWELLINGS(d)</b>					
Dwelling units					
1999–2000	no.	368 814	16 563	69 546	454 923
2000–01	no.	378 526	19 479	85 607	483 612
2001–02	no.	395 758	22 918	114 261	532 937
2002–03	no.	399 104	22 512	126 185	547 801
Value of commitments					
1999–2000	\$m	50 919	1 825	8 751	61 495
2000–01	\$m	50 722	2 244	11 327	64 293
2001–02	\$m	61 427	2 971	17 041	81 439
2002–03	\$m	69 846	3 179	19 293	92 318
<b>TOTAL</b>					
Dwelling units					
1999–2000	no.	451 800	20 139	77 199	549 138
2000–01	no.	437 309	22 709	94 278	554 296
2001–02	no.	478 590	26 898	125 276	630 764
2002–03	no.	468 449	25 499	135 911	629 859
Value of commitments					
1999–2000	\$m	62 879	2 347	9 726	74 952
2000–01	\$m	59 132	2 711	12 581	74 424
2001–02	\$m	74 329	3 558	18 595	96 482
2002–03	\$m	82 299	3 651	20 708	106 659

(a) Owner occupied dwellings. Excludes alterations and additions. (b) Caution should be exercised in using these statistics to calculate market share because, while all banks and permanent building societies are selected, only a sample of other lenders are selected. (c) Includes wholesale lenders n.e.c. (d) Includes refinancing.

Source: ABS data available on request, Survey of Housing Finance for Owner Occupation.

### 8.19 FINANCE COMMITMENTS FOR INVESTMENT HOUSING, By purpose

	2000-01	2001-02	2002-03
	\$m	\$m	\$m
Construction finance — erection of dwellings for rental/resale	3 772	4 443	7 935
Purchase of real property — dwellings for rental/resale — Individuals	24 870	39 317	51 651
Purchase of real property — dwellings for rental/resale — Other	2 634	3 846	5 535
<b>Total</b>	<b>31 276</b>	<b>47 606</b>	<b>65 121</b>

Source: ABS data available on request, Survey of Lending Finance.

In 2002-03, \$65,121m was approved for investment housing purposes, up 36.8% on the figure recorded in 2001-02. The largest component of investment housing, the purchase of dwellings for rent or resale by individuals continued its growth, rising to \$51,651m in 2002-03, up 31.4% on the previous year.

### Housing assistance

While most Australians are able to house themselves without government assistance, such assistance remains important for various population groups, especially low income earners and social security recipients. Housing assistance is provided by the Australian Government and the state and territory governments through a range of housing and other programs. Assistance for people with low incomes is provided through public housing, home purchase assistance and rent assistance schemes. Assistance is also provided to community organisations and local governments for refugees and crisis accommodation.

The *Housing Assistance Act 1996* (Cwlth) provides the legislative basis for the Australian Government's provision of financial assistance to the states and territories for housing and related purposes. The Act authorises the Government to form and enter into a Commonwealth State Housing Agreement (CSHA) with the states and territories. The CSHA sets out the terms for the provision of housing assistance for rental housing, home purchase and other specific housing programs.

The Minister for Family and Community Services and state and territory housing ministers met in April 2002 and committed to a new CSHA to operate from July 2003. Ministers expressed their commitment to the development of positive options for a new CSHA that will create a modern, sustainable housing system, support community development and the renewal of public housing estates, and support wider government outcomes in health, education and labour market reform.

Details of Government assistance provided under the CSHA for 2002-03 are set out in table 8.20.

### 8.20 COMMONWEALTH STATE HOUSING AGREEMENT, Payments to states and territories — 2002-03

	NSW	Vic.	Qld	SA	WA	Tas.	ACT	NT	Aust.
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Base funding	266 763	193 125	154 539	65 253	78 944	24 127	22 887	18 551	<b>824 189</b>
Community Housing Program	21 687	15 847	11 983	4 959	6 264	1 545	1 053	652	<b>63 990</b>
Aboriginal Rental Housing Program	17 777	3 638	27 764	8 712	17 621	696	—	23 792	<b>100 000</b>
Crisis Accommodation Program	13 439	9 821	7 426	3 073	3 882	957	653	404	<b>39 655</b>
<b>Total</b>	<b>319 666</b>	<b>222 431</b>	<b>201 712</b>	<b>81 997</b>	<b>106 711</b>	<b>27 325</b>	<b>24 593</b>	<b>43 399</b>	<b>1 027 834</b>

Source: Department of Family and Community Services.

## Public housing

Public housing comprises dwellings owned and managed by state and territory housing authorities and which are made available at low cost to tenants. Currently, rents are generally set at a maximum of 25% of income.

It is estimated that public housing tenants pay 68.6% of the rent they would pay in the private rental market after adjusting for any Rent Assistance they would receive if renting privately.

Over recent decades, public housing has been increasingly targeted towards those most in need. At 30 June 2002, there were around 400,000 households in social housing. Government pensions and benefits were the main source of income for the majority of households in public housing.

## Home purchase assistance (HPA)

HPA 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. States offer HPA options in line with local market conditions. The emphasis given to loan products varies significantly between jurisdictions. Western Australia and South Australia placed the greatest emphasis on various forms of subsidised loan products, partly due to lower housing prices, which make home purchase feasible on lower incomes. Other jurisdictions such as New South Wales gave greater emphasis to mortgage relief for home purchasers experiencing hardship.

## Rent assistance

The Australian Government pays rent assistance, a non-taxable income supplement, to eligible social security customers who pay rent in the private

rental market. Rent can include private rent, lodgings, board and lodgings, site fees, fees to moor a vessel, or service and maintenance fees in a retirement village.

To be eligible for rent assistance, a customer must first pay rent above a certain threshold level, then rent assistance is paid at the rate of 75 cents in each dollar above the threshold, until a maximum amount is reached. Maximum rates and thresholds vary depending on a person's family situation.

Rent assistance is indexed twice-yearly in March and September to the consumer price index.

As at June 2003, there were 940,708 income units in receipt of rent assistance, where an income unit is defined as a single person with or without dependants, or a couple with or without dependants. The average rent paid by rent assistance customers in June 2003 was \$264 per fortnight while the average rent assistance received was \$75 per fortnight.

A large proportion of rent assistance customers are either single people or sole parents. In June 2003, 54% of rent assistance customers were single without children, 24% were single with children, 14% were couples with children and 8% were couples without children.

Under CSHA, the state and territory governments also assist low income earners with the costs of rent, bonds and relocation in the private rental market. In 2001–02 almost \$80m was provided through these arrangements.

Table 8.21 provides details of the number of rent assistance customers, average fortnightly rates of rent assistance and average fortnightly rents. Outlays on rent assistance are included in the total expenditure on Pensions, Allowance and Family Tax Benefits as contained in *Chapter 7, Income and welfare*.

## 8.21 RECIPIENTS OF RENT ASSISTANCE, Average rent assistance and rent paid — June 2003

	Income units(a) no.	Average rent assistance(b) \$ per fortnight	Average rent paid(b) \$ per fortnight
Primary payment type(c)			
Youth Allowance	88 653	59	199
Age Pension	157 518	69	231
Disability Support Pension	166 163	76	234
Newstart Allowance	192 819	70	239
Parenting Payment (single)	193 583	87	311
Parenting Payment (partnered)	25 347	99	372
Family Tax Benefit Part A	79 551	74	385
Other	37 074	74	250
Income unit type			
Single no dependants	509 909	68	212
Couple no dependants	77 135	71	292
Couple 1 or 2 dependants	91 819	82	368
Couple 3 or more dependants	37 806	92	380
Single 1 or 2 dependants	184 464	84	308
Single 3 or more dependants	34 798	97	340
Couple temporarily separated	2 377	91	270
Unknown income unit	2 400	58	197
<b>Total</b>	<b>940 708</b>	<b>75</b>	<b>264</b>

(a) Income units are couples or singles either with or without dependants. (b) The 'Average Rent Assistance' and 'Average rent paid' excludes customers who have no ongoing entitlement. (c) Rent assistance has been counted under a single primary payment type. The general order of priority is Pensions, Allowances, Family Tax Benefit. For example, a couple receiving Disability Support Pension, Parenting Payment (Partnered) and Family Tax Benefit would appear as getting Rent Assistance with their Disability Support Pension.

Source: Department of Family and Community Services.

### Crisis accommodation

The Australian Government and the state and territory governments provide assistance to people who are homeless or at imminent risk of homelessness, through the Supported Accommodation Assistance Program (SAAP). Under the SAAP IV Bilateral Agreements 2000–05, national funding (i.e. Australian and state governments and territory contributions) will be over \$1.4b. Total recurrent funding for the SAAP program during 2001–02 totalled \$277m. This funding consisted of an Australian Government contribution of \$162m and a state/territory contribution of \$115m.

In 2002–03, the Supported Accommodation and Crisis Services Unit, Australian Institute of Health and Welfare (AIHW), published the 2001–02 Supported Assistance Accommodation Program (SAAP) National Data Collection Annual Report (AIHW 2002). The report showed that 95,600 clients were provided with support or supported accommodation through SAAP in 2001–02. These contacts comprised a total of 177,000 occasions of support in 2001–02. For 22% of support periods the main reason for seeking assistance was either due to usual accommodation being unavailable or eviction/previous accommodation ended.

There were more female clients (56%) than male clients (44%) and the average age of males was 33 years while the average for female clients was 30 years. Indigenous clients were over-represented as SAAP clients relative to their population size. Less than 2% of Australians aged 10 or over identified as Indigenous persons in June 2001, whereas 17% of SAAP clients in 2001–02 were Indigenous. On average, Indigenous clients had more support periods than other clients.

The most common main reasons clients gave for seeking assistance were domestic violence (22% of support periods), eviction or ending of previous accommodation (12%), usual accommodation was unavailable (10%) and relationship or family breakdown (10%).

Nationally, males aged 25 years and over presenting alone at SAAP agencies was the client group which accounted for the largest proportion of all support periods (33%), followed by female clients with children (20%). Overall 6% of support periods were for couples with or without children, while males with children account for 1% of all support periods.

For clients who specially sought assistance to obtain independent housing there were significant changes in accommodation type before and after support. In particular, accommodation in public or community housing went from 8% of support periods before support to 22% after. The proportion of support periods in which clients were renting privately also increased (from 18% before support to 25% after) (AIHW 2002).

Governments also provide assistance in meeting the short-term accommodation needs of homeless people who identified as a priority target group under the CSHA. The Australian Government provides funding of \$40m per annum for crisis accommodation through the Crisis Accommodation Program under the CSHA. The Crisis Accommodation Program provides funds for the purchase, construction, renovation, maintenance and lease of dwellings to provide accommodation services to assist people who are homeless or in crisis.

### Housing assistance program for Indigenous persons

The Aboriginal and Torres Strait Islander Commission (ATSIC) and Aboriginal and Torres Strait Islander Services (ATSIS) administer a number of programs to improve the living environment of Aboriginal and Torres Strait Islander peoples. The second largest program administered is the Community Housing and Infrastructure Program (CHIP) which has the aim of providing appropriate, safe and affordable housing, and improving community and individual health and wellbeing.

CHIP provides funds for the construction, purchase, repair and management of community housing as well as for the provision and maintenance of housing-related infrastructure (essential services such as water, sewerage, electricity and community roads) and recurrent funding for the provision of municipal services. Through CHIP, grants are provided to:

- Indigenous community organisations
- state Indigenous housing authorities where bilateral agreements are in place
- Indigenous community organisations under the National Aboriginal Health Strategy (NAHS) where the financial and technical aspects of the projects are managed under Contracted Program Management arrangements.

In 2002–03, CHIP expenditure totalled \$243m, of which around half went to the provision of housing. Over 500 houses were purchased or constructed and over 1,100 upgraded or renovated. CHIP has a particular focus on environmental health-related infrastructure, via a specific sub-program called the NAHS. Projects in the NAHS are generally large-scale, targeting priority housing and infrastructure including power, water and waste removal, mainly in rural and remote Indigenous communities. In 2002–03 more than \$91m in grant funds was provided under NAHS.

As shown below in table 8.22 most expenditure under the CHIP Program is in the Northern Territory, Western Australia and Queensland.

**8.22 COMMUNITY HOUSING AND INFRASTRUCTURE PROGRAM EXPENDITURE — 2002–03**

	Expenditure	Proportion of total
	\$	%
New South Wales	21 559 222	8.9
Victoria	6 501 158	2.7
Queensland	39 354 655	16.2
South Australia	20 954 771	8.6
Western Australia	68 334 005	28.2
Tasmania	1 949 527	0.8
Northern Territory	81 245 323	33.5
<b>Australia(a)</b>	<b>242 787 188</b>	<b>100.0</b>

(a) Includes grants administered by the National Housing and Environment Branch of Aboriginal and Torres Strait Islander Services which are multi-regional and multi-state.

Source: *Aboriginal and Torres Strait Islander Services*.

ATSIC engaged the ABS to undertake a Community Housing and Infrastructure Needs Survey (CHINS) during 2001. The timing of CHINS was to align the process with the 2001 Census of Population and Housing. The CHINS 2001 report, which was released in May 2002, provides a comprehensive picture of Indigenous housing circumstances across all tenures at a single point in time.

ATSIC's Community Housing and Infrastructure Program supplements the efforts of state/territory governments, who also receive earmarked Indigenous Housing funds from the Department of Family and Community Services (FaCS) under the Aboriginal Rental Housing Program (\$91m per annum).

The Australian Government, through FaCS and ATSIC, and state and territory governments have established Indigenous Housing Agreements in order to maximise Indigenous housing program efficiency and effectiveness through a coordinated approach to planning and delivery of housing and housing-related services. As at 30 June 2003, Housing Agreements or Memorandums of Understanding had been signed in all states and territories with the exception of Victoria.

## National Indigenous housing reforms

The Standing Committee on Indigenous Housing (SCIH) comprises Commonwealth, ATSIC and state and territory representatives. It reports on its activities directly to the Housing Ministers' Advisory Council (HMAC) and, in particular, provides advice on strategic Indigenous housing issues to HMAC and manages the implementation of Housing Ministers' Ten Year Statement of New Directions (*Building a Better Future: Indigenous Housing to 2010*).

In adopting the *Building a Better Future: Indigenous Housing to 2010*, housing ministers resolved to improve Indigenous housing outcomes in the next ten years through three major strategies:

- measuring and addressing Indigenous housing need
- improving coordination of program delivery, research and data collection and reporting
- building the capacity of the Indigenous community housing sector to manage and maintain houses effectively.

SCIH has identified thirteen key priority areas for attention including: addressing homelessness;

coordination with mainstream programs; Commonwealth State Housing Agreement (CSHA) re-negotiations; Council of Australian Governments (COAG) reconciliation agenda; skills development; viability of Indigenous housing organisations; sustainability of housing; and a range of data collection issues the development of models for targeting funds.

Over the past year ATSIC has been a member of various SCIH Working Groups, and has been involved in a range of activities including:

- the establishment of the National Skills Development Strategy Working Group, the aim of which is to develop and maintain a national plan to guide national, state and territory industry and training agencies and government departments in implementing the training strategy for Indigenous community housing
- a working group to develop a National Reporting Framework which would provide the basis for data collection work at a jurisdictional level and which would provide the relevant information for all National reporting structured around the outcomes required by *Building a Better Future* — it is intended that the National Reporting Framework will be progressively implemented from 2003–04
- a working group to develop a multi-measure approach to measuring Indigenous housing need — during 2002–03, ATSIC authored a report analysing Indigenous housing need against the five SCIH endorsed dimensions of need: overcrowding, homelessness, affordability, stock condition and dwelling connection to services.

In line with the agreed outcomes as outlined in *Building a Better Future*, all funding agencies including the Indigenous State Housing Authorities (ISHA) will be developing strategies to achieve the agreed outcomes within their jurisdiction.

## Home ownership

The ATSI Home Ownership scheme aims to reduce the disparity between the rate of home ownership in Indigenous communities and that in the wider Australian community. The rate of home ownership for Indigenous family and lone-person households was estimated in the 2001 census to be 32%. This compares with a national non-Indigenous figure of 71%.

ATSI provides home loans at concessional interest rates to Aboriginal and Torres Strait

Islander families. The scheme targets low income Indigenous families with the capacity to repay a long-term loan, but who have difficulty obtaining finance from traditional lending institutions. The loan portfolio administered by ATSSIS includes 3,735 loans valued at \$327m. In 2002–03 about 537 new loans were provided.

### **Other programs**

The Australian Government, through the Department of Health and Ageing, finances and regulates residential care for frail older people. The residential care is usually provided by the non-government sector, including religious, charitable and private sector providers. A small number of residential services are operated by the state and local government sectors. Capital assistance for upgrading or construction of facilities is made available to those aged care

services catering largely for residents with special needs or on low incomes, and those in rural and remote areas of Australia (see *Residential aged care program* in *Chapter 7, Income and welfare*).

Under the Commonwealth/State Disability Agreement, the Government provides funds to assist the states and territories in the planning, policy setting and management of accommodation and other related services for people with disabilities. The state and territory governments are responsible for administering these services (see *Support for people with a disability* in *Chapter 7, Income and welfare*). Areas such as advocacy, and research and development, continue to be a responsibility of both levels of government.

## Bibliography

### ABS publications

*Australian Housing Survey — Housing Characteristics, Costs and Conditions* (4182.0)

*Australian Social Trends* (4102.0)

*Household Income and Income Distribution, Australia* (6523.0)

*Household Investors in Rental Dwellings, Australia* (8711.0)

*House Price Indexes: Eight Capital Cities* (6416.0)

*Housing Finance for Owner Occupation, Australia* (5609.0)

*Housing Occupancy and Costs, Australia* (4130.0)

### Other publications

AIHW (Australian Institute of Health and Welfare):

2000a, *The National Housing Data Agreement: a Subsidiary Agreement of the 1999–2003 Commonwealth–State Housing Agreement*, AIHW, Canberra

2000b, *The Agreement on National Indigenous Housing Information*, AIHW, Canberra

2002, *SAAP National Data Collection Annual Report 2001–02 Australia*, AIHW, Canberra

2003, *Australia's Welfare 2003: Services and Assistance*, AGPS, Canberra

Department of Family and Community Services, *Annual Report*, AGPS, Canberra

The latest annual reports of the state and territory government housing authorities, and the latest annual report of the Department of Family and Community Service in relation to the *Housing Assistance Act 1996* (Cwlth), show further details of government activities in the field of housing

### Web sites

Aboriginal and Torres Strait Islander Commission, <<http://www.atsic.gov.au>>

Australian Housing and Urban Research Institute, <<http://www.ahuri.edu.au>>

Australian Institute of Health and Welfare, <<http://www.aihw.gov.au>>

Australian Government Department of Family and Community Services, <<http://www.facs.gov.au>>

Australian Government Department of Health and Ageing, <<http://www.health.gov.au>>

## HEALTH

The Australian health system has a diversity of arrangements for planning, funding, delivering and regulating health services, featuring a mix of private and public sector involvement.

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, while the state and territory governments are largely responsible for the direct provision of such services. Local governments and non-government organisations are also involved in the direct provision of health services. 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, and are discussed in the section *Health care delivery and financing*.

Statistical and information agencies provide the information needed for evidence-based decision making and policy formation. Under the National Health Information Agreement, to which the Australian Bureau of Statistics (ABS), the Australian Institute of Health and Welfare, Australian Government Department of Health and Ageing, and the various state and territory health authorities are signatories, the National Health Information Development Plan sets out agreed national priorities for health information to be considered by the Australian Health Ministers' Advisory Council.

The chapter provides information on various aspects of the health of the population and the health-related activities of government and other bodies. A listing of web sites is provided at the end of this chapter where additional information on health topics and organisations involved in health-related activities can be obtained.

The chapter concludes with two articles. The first, *Injuries*, examines injury-related deaths, and the causes and circumstances of recent injuries. In 2001, almost 7,900 Australians died from injury, while 2.25 million people reported being injured over a four-week period. There is a range of risk factors associated with higher rates of illness or injury in the population. The second article *Health risk factors among adults*, focuses on four of these: smoking; physical inactivity; overweight and obesity; and risky/high risk alcohol consumption.

## National health surveys

Data in this chapter are obtained from the most up-to-date sources available including information collected in the 2001 National Health Survey (NHS) on the health status of Australians conducted by the ABS, a supplementary health survey of Aboriginal and Torres Strait Islander people (NHS(I)), and data from the ABS Causes of Death Collection. Previous National Health Surveys were conducted in 1989–90 and 1995. The 2001 NHS and NHS(I) surveys were the first in a new series of three-yearly national health surveys conducted by the ABS, with the increased frequency assisted by a funding partnership with the Department of Health and Ageing (DoHA). The funding partnership with DoHA also provided support funding for the Indigenous component of the 2001 NHS, with an oversample that supports estimates at the national level. The partnership will also support in future years, commencing with 2004–05, a six-yearly Indigenous Health Survey with a sample sufficient to enable reporting at the state and territory level.

Data from the 2001 NHS presented in this chapter are based, for the first time, on the International Classification of Diseases, 10th revision (ICD-10). Furthermore, comparisons between the Indigenous and non-Indigenous populations are presented after adjusting for their differing age structures.

## How Australians rate their health

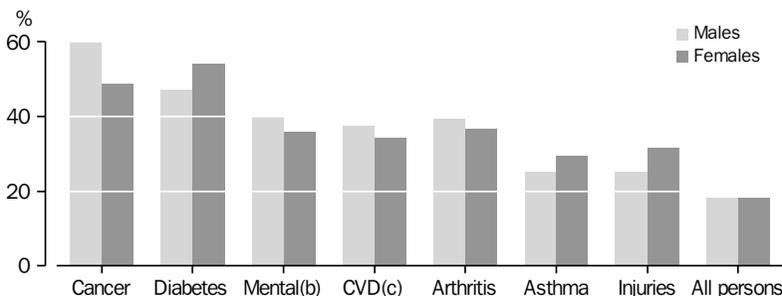
The World Health Organization (WHO) defines health as ‘a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity’. While the level of disease or infirmity can be assessed by mortality, disability and morbidity statistics, the presence of positive wellbeing is more difficult to measure.

### Health and wellbeing

In 2001, the majority of Australians aged 15 years and over considered themselves to be in good health, with 82% reporting their health status as good, very good or excellent. This is similar to the proportion reported in the 1995 NHS (83%). In general, a higher proportion of younger people reported their health to be either excellent, very good or good compared to those in the older age groups.

In 2001, those with long-term conditions lasting or expected to last six months or longer were more likely to report their health as being either fair or poor. A substantial proportion of those with cancer (56%), diabetes (51%), mental and behavioural problems (38%), cardiovascular disease (36%) and arthritis (37%) reported their health to be either fair or poor compared to 18.1% of all those aged 15 years or more assessing their health as fair or poor. (graph 9.1)

**9.1 FAIR OR POOR SELF-ASSESSED HEALTH STATUS(a), By selected long-term conditions — 2001**



(a) Persons aged 15 years and over. (b) Mental and behavioural disorders. (c) Cardiovascular disease.

Source: ABS data available on request, 2001 National Health Survey.

## Health status

### Morbidity

The 2001 NHS found that almost 78% of the Australian population reported having experienced one or more long-term conditions (i.e. conditions that have lasted, or are expected to last, six months or more). In most cases, respondents were asked about conditions which had been medically diagnosed.

From the range of long-term conditions covered in the 2001 NHS and NHS(I) surveys, those relating to eyesight and back problems were among the most likely to be reported for both Indigenous and non-Indigenous populations after adjusting for age differences in the two populations (table 9.2). For most self-reported long-term conditions, the age standardised rates for Indigenous and non-Indigenous populations were similar. The exception was diabetes, where the Indigenous rates were nearly four times higher than the non-Indigenous rates (table 9.2).

In general, females were more likely than males to report having experienced most of the selected long-term conditions. Females were also more likely to consult health professionals. For example, in 2001 it was estimated that 27% of females had consulted a doctor in the two weeks prior to the survey interview, compared with 21% of males. Females also have a longer life expectancy which is reflected in more females in the older age

groups where long-term conditions are common. Adult males had a higher prevalence of neoplasms and hearing loss.

The proportion of people who reported having a circulatory system disease increased steadily with age (graph 9.3). For example, 1.3% of 0–4 year olds were reported to have a circulatory system disease compared to 67% of those aged 85 years and over. The types of circulatory system diseases also change with age. Young children and babies are more likely to suffer from congenital heart diseases while for older people, high blood pressure (hypertensive disease) is the most common circulatory disease.

The proportion of those reporting a mental or behavioural condition rises in the early-teen years and remains stable until their early 60s when the proportion declines. In the ages up to the mid-teens, males have a higher rate of mental disorders than females. However, during the teenage and adult years, the prevalence of mental disorders of females overtakes those of males. This is due mainly to the increase of mood disorders such as depression. Mood disorder rates start to decline for women around their early 70s, the age from which overall mental disorder rates between males and females are similar.

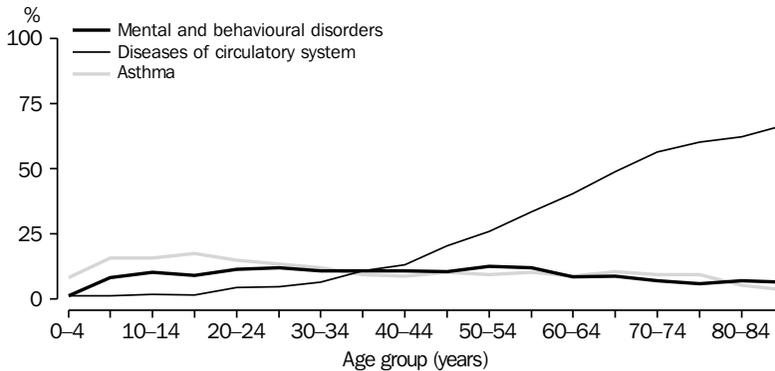
Age is also a determining factor for self-reported asthma rates. The prevalence rises from 8.2% for 0–4 year olds up to 18% for 15–19 year olds, before steadily declining with age.

### 9.2 SELECTED LONG-TERM CONDITIONS, Age standardised percentages — 2001

	Males		Females		Persons	
	Indigenous %	Non-Indigenous %	Indigenous %	Non-Indigenous %	Indigenous %	Non-Indigenous %
Long-sightedness	21	20	25	24	23	22
Short-sightedness	15	18	20	23	17	21
Back problems	19	21	24	21	22	21
Arthritis	14	11	18	15	16	13
Asthma	14	10	20	12	17	12
Chronic sinusitis	9	9	11	12	10	11
Total/partial hearing loss	15	14	12	7	13	10
Hypertension	12	9	16	10	14	10
Diabetes/high sugar levels	9	3	12	3	11	3
Neoplasms	*1	2	**1	1	*1	2

Source: National Health Survey: Aboriginal and Torres Strait Islander Results, Australia, 2001 (4715.0).

### 9.3 SELECTED LONG-TERM CONDITIONS — 2001



Source: ABS data available on request, 2001 National Health Survey.

### Mortality

There were 128,544 deaths registered in 2001, consisting of 66,835 male and 61,709 female deaths. The number of deaths registered in 2001 represented an increase of 0.2% on the corresponding figure for 2000 (128,291 deaths). Malignant neoplasms (cancer) and ischaemic heart diseases were the leading underlying causes of death, accounting for 29% and 20% respectively of total deaths registered (table 9.4).

During the decade up to 2001, the total number of deaths registered annually increased by approximately 7.3%. However, the standardised death rate of 662 deaths per 100,000 population in

2001 was 20% lower than the corresponding rate of 829 in 1991. These outcomes are consistent with continuing improvements in life expectancy in Australia.

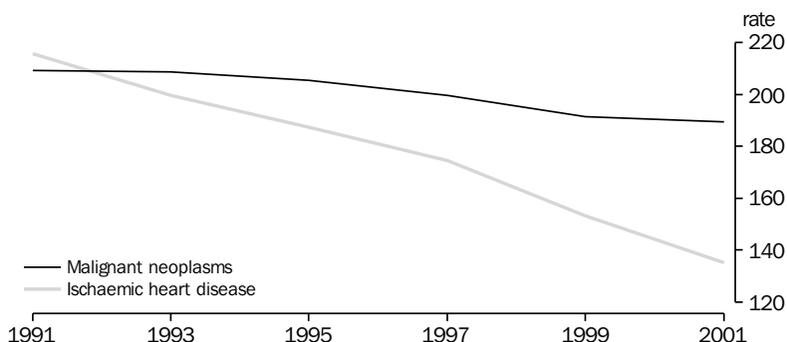
Over the 10 years to 2001, there were quite different patterns of decline in the two leading causes of death, malignant neoplasms and ischaemic heart diseases, which together account for nearly half the total deaths. Between 1991 and 2001, the standardised death rate for malignant neoplasms decreased by 10%, while the rate for ischaemic heart diseases decreased by 37% (graph 9.5).

### 9.4 LEADING CAUSES OF DEATH — 2001

Cause of death (ICD-10 code)	Males	Females	Persons	Proportion of total deaths
	no.	no.	no.	%
<b>All causes</b>	<b>66 835</b>	<b>61 709</b>	<b>128 544</b>	<b>100.0</b>
Malignant neoplasms (cancer) (C00–C97)	20 753	15 997	36 750	28.6
Trachea, bronchus and lung (C33, C34)	4 642	2 396	7 038	5.5
Ischaemic heart diseases (I20–I25)	13 906	12 328	26 234	20.4
Cerebrovascular diseases (stroke) (I60–I69)	4 852	7 294	12 146	9.4
Chronic lower respiratory diseases (incl. asthma, emphysema and bronchitis) (J40–J47)	3 419	2 497	5 916	4.6
Accidents (V01–X59)	3 155	1 685	4 840	3.8
Transport accidents (V01–V99)	1 495	509	2 004	1.6
Diabetes mellitus (E10–E14)	1 639	1 439	3 078	2.4
Diseases of arteries, arterioles and capillaries (incl. atherosclerosis and aortic aneurysm) (I70–I79)	1 381	1 244	2 625	2.0
Intentional self-harm (X60–X84)	1 935	519	2 454	1.9
Organic, including symptomatic, mental disorders (F00–F09)	683	1 454	2 137	1.7
Influenza and pneumonia (J10–J18)	1 184	1 518	2 702	2.1
All other causes	13 928	15 734	29 662	23.1

Source: Causes of Death, Australia, 2001 (3303.0).

## 9.5 STANDARDISED DEATH RATES(a)



(a) Per 100,000 estimated resident population. Standardised to the 2001 Australian population.

Source: ABS data available on request, *Causes of Death Collection, 2001*.

## International comparisons

### Healthy life expectancy

The WHO has proposed healthy life expectancy as a measure of the expected number of years to be lived without reduced functioning. Healthy life expectancy calculations adjust the overall life expectancy (see *Life expectancy, Chapter 5, Population*) by the years of life lived with reduced functioning because of ill health.

Australia's healthy life expectancy is among the highest in the world. Australian males can expect to live 70.1 years of life without reduced functioning, and females 73.2 years. Table 9.6 shows healthy life expectancy for selected countries in 2001.

### Infant mortality rates (IMR)

IMR is defined as the number of deaths per 1,000 live births between birth and exactly one year of age. According to the United Nations, the projected world infant mortality rate for 2000–05 is 55 infant deaths per 1,000 live births. Australia stands at 5 infant deaths per 1,000 live births, which is among the lowest in the world (table 9.7). Overall the most developed regions have an IMR (8 per 1,000 live births) much lower than the less developed regions (59 per 1,000 live births) and the least developed countries (92 per 1,000 live births) (table 9.7).

## National Health Priority Areas (NHPAs)

The NHPAs initiative is a collaborative approach to dealing with a range of conditions which account for 70% of the burden of disease and a high financial burden in Australia. It is overseen by the National Health Priority Action Council, which was established as a sub-committee of Australian Health Ministers' Advisory Council (AHMAC) in June 2000, and comprises representatives of the Australian Government, each of the states and territories, a representative of Aboriginal and Torres Strait Islander peoples and a representative for consumer issues.

The establishment of diseases and conditions as national health priority areas involves a national consultation process and consideration of issues such as:

- the health burden associated with the disease/condition (including incidence, prevalence, mortality, morbidity, quality of life, economic costs)
- the potential for health gain (including improved health outcomes, and potential to change behaviour)
- the potential for progress through national collaboration
- the potential for cost-effective health gain using interventions known to be effective (including existing and potential intersectoral action)
- the potential for sustainability of programs to address the health area
- the potential to reduce health inequalities.

## 9.6 HEALTHY LIFE EXPECTANCY, Selected countries — 2001

	Healthy life expectancy years
<b>Males</b>	
Japan	71.4
Switzerland	71.1
Sweden	70.5
Iceland	70.5
<b>Australia</b>	<b>70.1</b>
Norway	69.3
Denmark	69.3
Italy	69.2
New Zealand	69.1
France	69.0
Greece	69.0
Austria	68.9
Spain	68.7
United Kingdom	68.4
Germany	68.3
Canada	68.2
Singapore	67.9
Belgium	67.7
Ireland	67.6
Finland	66.7
United States of America	66.4
Portugal	64.3
Poland	62.1
Russia	51.5
South Africa	40.0
<b>Females</b>	
Japan	75.8
Switzerland	74.4
Sweden	74.4
France	73.5
<b>Australia</b>	<b>73.2</b>
Austria	73.0
Spain	73.0
Italy	72.9
Finland	72.5
Norway	72.2
Germany	72.2
Iceland	71.9
Greece	71.9
Belgium	71.8
Canada	71.6
New Zealand	71.5
United Kingdom	70.9
Denmark	70.8
Ireland	70.4
Singapore	69.5
Portugal	69.4
United States of America	68.8
Poland	66.6
Russia	61.9
South Africa	42.7

Source: WHO 2002.

At present, seven NHPAs have been endorsed by the Australian Health Ministers' Conference covering cardiovascular health, cancer control, injury prevention and control, diabetes mellitus, mental health, asthma, and arthritis and musculoskeletal conditions. A range of program initiatives has been established aimed at improving health outcomes in these areas. More information on NHPAs, can be obtained from the Department of Health and Ageing web site and other relevant web sites, the addresses of which are at the end of this chapter.

### Cardiovascular health

Circulatory disease comprises all diseases and conditions involving the heart and blood vessels including high blood pressure, heart disease, stroke, and peripheral vascular diseases. Although its death rates have notably decreased over the last three decades, it is still the leading cause of death in Australia (AIHW 2002a). Because of its health and economic burden exceeding any other disease as well as the potential for prevention, it was established as one of the original priority areas in 1996.

### Morbidity

Estimates from the 2001 NHS indicated that around 3.2 million Australians (17%) reported having a circulatory system condition as a long-term condition. The most common cardiovascular condition reported was hypertension (high blood pressure) which affected 10% of the population.

Graph 9.28 shows that the prevalence of long-term circulatory system conditions increases with age. For people aged 55 and over, the prevalence of all circulatory system conditions is 48%. The prevalence of hypertensive disease is 34%, and ischaemic heart disease (also called coronary heart disease) is 5.8%. The prevalence of cerebrovascular disease (stroke) is 2.2%.

### Mortality

In 2001, over 38% (49,326) of all deaths were due to diseases of the circulatory system. Ischaemic heart disease accounted for 20% of all deaths, and cerebrovascular diseases a further 9.4% (table 9.4). Between 1991 and 2001, age-standardised death rates for diseases of the circulatory system declined by 35% for males (from 469 to 304 per 100,000 persons), 33% for females (from 317 to 213) and 34% in total (from 384 to 254).

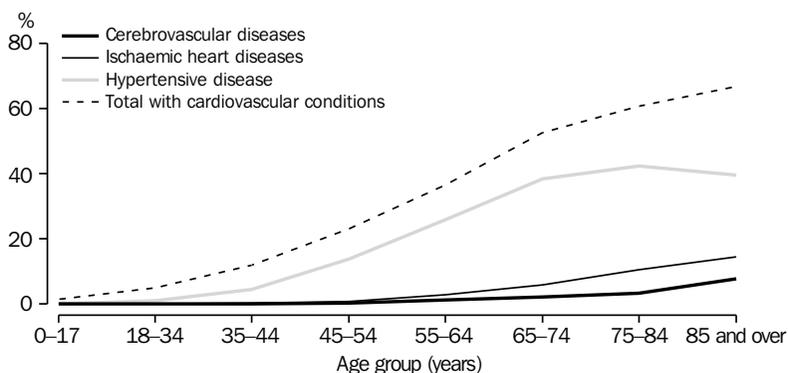
### 9.7 INTERNATIONAL INFANT MORTALITY RATES, Selected years

Country	1950-55	1960-65	1970-75	1980-85	1990-95	1995-2000	2000-05(a)
Japan	51	25	12	7	4	4	3
Sweden	20	15	10	7	5	4	3
Hong Kong (SAR of China)	79	33	17	10	5	4	4
Singapore	66	30	19	8	6	5	5
Germany	51	29	21	11	6	5	5
<b>Australia</b>	<b>24</b>	<b>20</b>	<b>17</b>	<b>10</b>	<b>7</b>	<b>5</b>	<b>5</b>
Canada	36	26	16	9	6	6	5
France	45	25	16	9	7	6	5
United Kingdom	29	22	17	11	7	6	5
Spain	62	42	21	11	7	6	5
Italy	60	40	26	13	7	6	5
New Zealand	26	21	16	12	7	7	6
Greece	60	50	34	15	9	7	6
United States of America	28	25	18	11	9	8	7
Korea, Republic of (South)	115	70	38	23	12	8	7
Malaysia	99	63	42	28	15	12	10
Vietnam	158	130	107	70	47	40	34
China (incl. SARs and Taiwan Prov.)	195	121	61	52	47	41	37
Indonesia	201	166	126	89	59	48	40
Papua New Guinea	158	134	112	91	76	69	62
Yemen	241	219	184	126	92	74	62
India	190	157	132	107	79	73	65
Somalia	207	179	155	143	165	122	113
Niger	213	191	171	156	144	136	126
Developed regions(b)	59	33	21	15	10	8	8
Less developed regions(c)	180	137	105	88	71	65	59
Least developed regions(d)	197	171	149	127	110	102	92
World	157	119	94	79	64	60	55

(a) The projected 2000-05 infant mortality rate uses the medium variant. (b) Comprising Europe, Northern America, Australia, New Zealand and Japan. (c) Comprising Africa, Asia (excluding Japan), Latin America and the Caribbean, Melanesia, Micronesia and Polynesia. (d) Comprising 48 countries, as defined by the United Nations General Assembly in 1998, 33 in Africa, 9 in Asia, 1 in Latin America and the Caribbean, and 5 in Oceania.

Source: UN2000.

### 9.8 PREVALENCE OF CARDIOVASCULAR CONDITIONS — 2001



Source: ABS data available on request, 2001 National Health Survey.

## Cancer

Cancer is potentially the most preventable and treatable of the common causes of death in the world. It is a disease of the genes, caused by abnormal cell division and usually presents as a solid growth tumour. It is a major cause of death in Australia.

## Morbidity

Estimates based on information reported in the 2001 NHS show that 261,253 Australians (1.4%) reported they currently had a malignant neoplasm.

The Australian Institute of Health and Welfare cancer registry data shows there were 82,185 registered new cancer cases in 1999. The most common registrable cancers are the combination of cancers of the colon and rectum (11,637), breast cancer (10,667), prostate cancer (10,232), melanoma (8,243) and lung cancer (7,826). They together account for 59% of all registrable new cancer cases in that year. Cancer occurs more commonly in males than females. The age-standardised incidence rate in 1999 for all registrable cancers combined was 469.6 new cases per 100,000 for males and 339.2 per 100,000 for females. If the 1999 incidence rates prevailed, it would be expected that one in three men and one in four women will be directly affected by cancer before the age of 75 (AIHW 2002b).

## Mortality

In 2001, malignant neoplasms (cancer) accounted for 36,750 deaths, which was 29% of all deaths registered (table 9.4). There were 20,753 male deaths and 15,997 female deaths due to cancer. Overall, cancer of the trachea, bronchus and lung was the leading cause of cancer deaths (7,038 deaths), accounting for 19% of all cancer deaths. There were some differences in cancer death rates between males and females. Among males, the leading causes of cancer deaths were cancer of the trachea, bronchus and lung (22% of all male cancer deaths), prostate cancer (13%) and colon cancer (8%). Among females the leading causes of cancer deaths were breast cancer (16% of all female cancer deaths), cancer of the trachea, bronchus and lung (15%) and colon cancer (10%). Apart from age groups between 30 and 54,

age-specific death rates for cancer increased markedly with age, and were generally greater for males than for females.

Mortality is influenced by the number of new cases of cancer (incidence) and the length of time lived after the initial diagnosis of cancer is made (survival). Relative survival is a measure that takes into consideration the crude survival (time between diagnosis and death) in the cancer population, and the corresponding expected survival in the general population. Expressed as a percentage, it is the cancer population that survives a specific number of years after the diagnosis divided by the general population that survives the same number of years.

In the general population during 1992–97, the expected proportion of males aged 60–69 years who survive for the next five years is 91%. The observed survival rate after five years for males diagnosed with lung cancer at age 60–69 is 11%. The five-year relative survival proportion for males diagnosed with lung cancer at age 60–69 is the ratio of these two percentages, that is 12% (AIHW 2001).

By convention, the proportion of people surviving is measured at one, five and ten years after diagnosis. The periods reflect different stages of management during the life of a person diagnosed. For instance, the proportion of people surviving after one year can be a measure of the success of the interventions on the immediately detectable cancer, whereas five-year and ten-year measurements are strong indicators for remission or cure.

During 1992–97, the five-year relative survival proportions for all cancers for females (63%) were higher than those for males (57%) (table 9.9). The difference in the five-year relative survival rate was 6.6 percentage points higher for females. When looking at international comparisons, Australian five-year relative survival proportions for all cancers was ranked second behind the United States of America for both males and females when compared with other Western countries for which relative survival data are available.

## 9.9 DEATH, INCIDENCE AND SURVIVAL RATES FOR COMMON REGISTRABLE CANCERS

Cancer site	Deaths (2001)		Incidence (1999)		Five-year relative survival (1992–97)	
	Males no.	Females no.	Males no.	Females no.	Males %	Females %
Stomach	750	461	1 301	661	22.6	24.8
Colon	1 760	1 582	3 721	3 770	58.3	58.7
Rectum(a)	855	548	2 467	1 679	56.6	60.6
Pancreas	950	859	916	872	5.4	5.2
Lung(b)	4 642	2 396	5 275	2 551	11.0	14.0
Skin (melanoma)	686	383	4 627	3 616	90.0	94.6
Breast	27	2 585	75	10 592	n.a.	84.0
Uterus	—	293	—	1 432	—	81.4
Cervix	—	262	—	787	—	74.6
Ovary	—	833	—	1 173	—	42.0
Prostate	2 711	—	10 232	—	82.7	—
Testis	17	—	564	—	95.4	—
Bladder	629	275	2 076	729	70.8	64.7
Kidney(c)	533	387	1 460	912	59.9	57.5
Brain	631	448	749	529	23.8	23.8
Thyroid	35	53	252	750	87.9	95.6
Unknown primary	1 212	1 206	1 585	1 505	13.4	11.5
Hodgkin's Lymphoma	20	29	232	185	82.6	84.4
Non-Hodgkin's Lymphoma	795	719	1 775	1 487	54.6	55.8
Leukaemia	803	582	1 364	996	41.2	43.2
<b>All cancers(d)</b>	<b>20 485</b>	<b>15 876</b>	<b>44 514</b>	<b>37 671</b>	<b>56.8</b>	<b>63.4</b>

(a) Including rectosigmoid junction, anus and anal canal. (b) Including trachea and bronchus. (c) Including ureter and urethra. (d) Excluding non-melanocytic skin cancer.

Source: ABS data available on request, Causes of Death Collection, 2001; AIHW 2001, 2003c.

### Injuries and deaths due to external causes

Injury and poisoning are broad terms that encompass the adverse effects on the human body that may result from events. These events may be accidental, such as falls, vehicle accidents and exposure to chemicals, or intentional such as suicide attempts and assaults by other people. Such events, and the factors involved in them, are collectively known as 'external causes' of injury and poisoning, and are a significant source of preventable illness, disability and premature death in Australia.

Males and females, and people in different age groups, experience different levels and types of risk from injury events (risk in this sense refers to both the probability of an injury event occurring and the severity of the injuries that may result). Differences in injury risk and injury outcomes are

reflected in the draft *National Injury Prevention Plan*, a key policy response to this designated priority health area. The plan identifies four priority areas: falls among persons aged 65 years and older; falls among children under 15 years of age; drowning and near drowning; and poisoning of infants and children less than 5 years of age. Although the number of deaths from these four types of injuries is relatively small, they account for a large number of hospital admissions.

### Morbidity

Respondents to the 2001 NHS were asked about events in the four weeks prior to interview that resulted in an injury for which they had sought medical treatment or taken some other action. Injuries data from the survey are presented in table 9.10 and highlight differences in the reporting of injury events among males and females of different age groups.

### 9.10 INJURY EVENTS(a) — 2001

Age group (years)	Males	Females	Persons
	%	%	%
0–14	19.5	15.6	17.6
15–24	20.0	14.3	17.2
25–44	12.5	10.6	11.5
45–64	7.4	7.5	7.4
65 and over	5.2	5.9	5.6
<b>All ages</b>	<b>13.0</b>	<b>10.8</b>	<b>11.9</b>

(a) The 2001 NHS collected information on up to three injury events per person. It was possible for respondents to report more than one injury event in the four weeks prior to interview.

Source: ABS data available on request, 2001 National Health Survey.

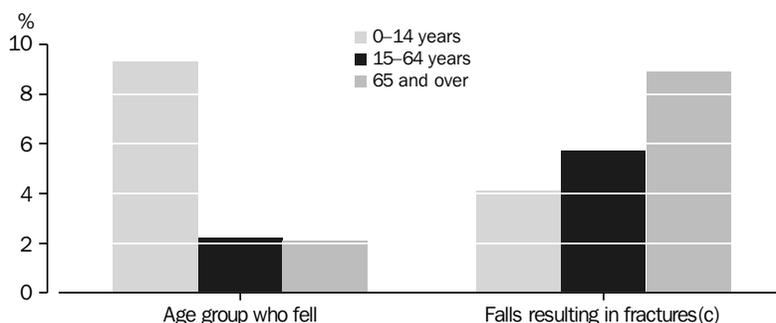
Falls have different consequences for older Australians. The 2001 NHS data show that a low fall (of one metre or less) for a person aged 65 years and over was more likely to result in them sustaining a fracture than was the case for a

younger person (graph 9.11). Further, women aged 65 years and over were most likely to sustain a fracture as a result of a fall.

### Mortality

External causes of injury were responsible for 7,876 deaths (6% of all deaths) registered in 2001 (table 9.12). Since 1991 there has been a 12% decrease in the standardised death rate for deaths from external causes, mainly due to a 28% decrease in the rate for transport accidents. In 2001 there were 2,454 deaths attributed to intentional self harm (suicide), 4% higher than the 2000 figure, but 10% lower than the record 2,720 deaths registered in 1997. Deaths as a result of suicide account for more than one in five deaths of persons aged 25–34 years (a rate of 20.7 per 100,000 persons) and 15–24 years (12.8 per 100,000). Males consistently have higher rates of death due to external causes than females.

### 9.11 LOW FALLS(a) RESULTING IN FRACTURES(b) — 2001



(a) Falls of one metre or less. (b) Based on the most recent injury event. (c) Relative standard errors greater than 25% apply to the data on fractures.

Source: ABS data available on request, 2001 National Health Survey.

### 9.12 EXTERNAL CAUSES OF DEATH — 2001

Cause of death (ICD-10 code)	no.	%	Crude death rate(a)		
			Males	Females	Persons
Suicide (intentional self-harm) (X60–X84)	2 454	31.2	20.1	5.3	12.6
Transport accidents (V01–V99)	2 004	25.4	15.5	5.2	10.3
Accidental poisoning by and exposure to noxious substances (X40–X49)	642	8.2	4.4	2.2	3.3
Falls (W00–W19)	634	8.0	3.7	2.9	3.3
Assault (X85–Y09)	300	3.8	2.0	1.1	1.5
Accidental drowning and submersion (W65–W74)	261	3.3	2.2	0.5	1.3
Other	1 581	20.1	8.7	7.6	8.1
<b>All external causes</b>	<b>7 876</b>	<b>100.0</b>	<b>56.5</b>	<b>24.8</b>	<b>40.6</b>

(a) Crude rate per 100,000 population.

Source: ABS data available on request, Causes of Death Collection, 2001.

## Diabetes mellitus

Diabetes is a long-term condition characterised by high blood glucose (a type of sugar) level, which results from either the body producing little or no insulin, or the body not using the insulin properly (insulin resistance). Insulin is a hormone produced by the pancreas that helps the body cells use glucose.

Diabetes is a costly disease, associated with substantial morbidity and mortality, primarily from cardiovascular complications, eye and kidney diseases, and limb amputations. In 1996, diabetes became the fifth NHPA in recognition of the increasing prevalence of the disease, its seriousness and its cost to the community.

### Types of diabetes

There are three major types of diabetes mellitus. Type 1 diabetes is marked by extremely low levels of insulin. Type 2 diabetes is marked by reduced levels of insulin, or the inability of the body to use insulin properly. Gestational diabetes, which occurs in about 4–6% of pregnancies of females not previously diagnosed with diabetes, is not usually long-term. However, for women diagnosed with gestational diabetes, there is an increased risk of developing Type 2 diabetes later in life (AIHW 2003e).

### National Diabetes Register

In 1999, the National Diabetes Register was established at the AIHW as part of the National Diabetes Strategy. The register holds information

on people with insulin-treated diabetes who started using insulin since January 1999. Between 1 January 1999 and 31 December 2001, 22,575 people began to use insulin, and consented to be on the register (AIHW 2003e).

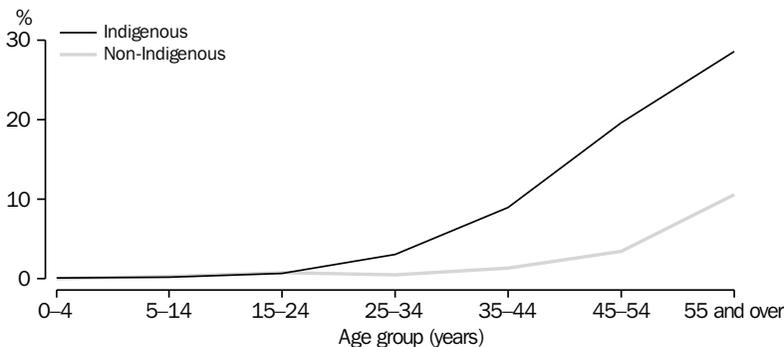
Of those registered, 60% were found to have Type 2 diabetes; 29% had Type 1 diabetes and 7.3% had gestational diabetes. Additionally, 62% of registrants were aged over 45 years; 4.9% were aged less than 10 years, 4.8% aged 10–14 and 29% aged 15–44 years. In 2000 and 2001, 1,565 new cases of Type 1 diabetes among children 0–14 years were recorded on the register, an average annual rate of 20 new cases per 100,000 population for boys and 19 per 100,000 for girls.

### Morbidity

Estimates from the 2001 NHS indicate that over half a million Australians (around 3%) have reported having diabetes as a long-term condition. Results from the three successive National Health Surveys show that diabetes is a growing health problem in Australia. The prevalence of diabetes has risen from 1.2% in 1989–90 to 2.0% in 1995, and to 2.9% in 2001.

After adjusting for age differences, Indigenous Australians were almost four times as likely as the non-Indigenous population to report some form of diabetes (11% compared with 3%). Graph 9.13 shows age-standardised rates of diabetes among the Indigenous and non-Indigenous population in Australia in 2001.

9.13 PERSONS REPORTING DIABETES — 2001



Source: National Health Survey: Aboriginal and Torres Strait Islander Results, Australia, 2001 (4715.0).

## **Mortality**

In 2001, diabetes mellitus was the underlying cause of death in 3,078 deaths, 2.4% of all deaths registered. Of these, 1,639 deaths were males and 1,439 females (table 9.4). The age-standardised death rate due to diabetes was 16 per 100,000 persons (20 for males and 13 for females per 100,000 persons).

There were a further 7,247 deaths where diabetes was not the underlying cause but was an associated cause. Where diabetes was mentioned as an associated cause, the main underlying causes were acute myocardial infarction (heart attack), chronic ischaemic heart disease, cerebrovascular disease and malignant neoplasms (particularly of the digestive organs and the respiratory and intrathoracic organs).

## **Mental health**

Although approximately 80% of the population enjoy 'good' mental health free of mental disorders, it has been estimated that mental disorders caused 13% of the total disease burden in 1996. Although mental illness is not a major direct cause of death, it is associated with a proportion of deaths due to suicide and some other conditions, and is an important cause of chronic disability. For males, substance use disorders (from alcohol or other drugs) accounted for 33% of the mental health burden, while for females affective disorders such as depression accounted for 39% of the mental health burden (AIHW 1999).

## **Morbidity**

In the 2001 NHS, information on long-term mental and behavioural problems was collected from all respondents. A long-term condition was defined as one which the respondent regarded as having lasted or was expecting to last six months or more. Respondents in the survey were not specifically asked if they had been diagnosed with any mental disorders, so the information they provided could be based on self-diagnosis rather than diagnosis by a health professional.

In 2001, 9.6% of the Australian population reported that they had a long-term mental or behavioural problem. Proportionally more females (11%) than males (8.5%) reported these problems. The most commonly reported problems were classified into two groups: anxiety related problems and mood (affective) problems

such as depression and bipolar disorder; each were reported by approximately 3% of all males and 6% of all females.

## **Psychological distress**

In the 2001 NHS, information on mental health was collected from adult respondents using the Kessler 10 Scale (K10), a 10-item scale of current psychological distress. The K10 asks about negative emotional states in the four weeks prior to interview. The results from the K10 are grouped into four categories: low (indicating little or no psychological distress), moderate, high, and very high levels of psychological distress. Based on research from other population studies, a very high level of psychological distress, as shown by the K10, is likely to indicate a need for professional help.

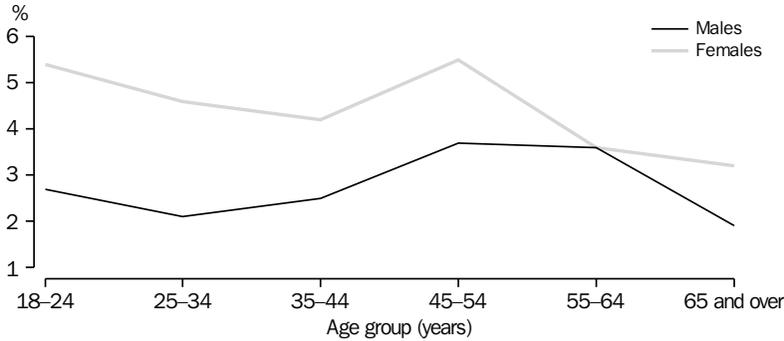
In 2001, 3.6% of the adult population reported a very high level of psychological distress. Women were more likely than men to report high (11% of women and 7.2% of men) and very high (4.4% of women and 2.7% of men) levels of distress. The greatest sex difference was between young women and men aged 18–24 years, with 5.4% of women having very high levels of psychological distress compared to 2.7% of men in this age group (graph 9.14). A higher proportion of both males and females aged 45–54 years reported very high levels of psychological distress compared with any other age group.

## **Use of medication for mental wellbeing by adults**

In 2001, 18% of adults used medication for their mental wellbeing in the two weeks prior to the survey interview. People may have used more than one type of medication for their mental wellbeing. Use of pharmaceutical medications was reported by 9.6% of adults overall, use of vitamins or mineral supplements by 7.8% and use of herbal or natural medications by 5.4%.

As would be expected, when comparing adults who reported having a mental or behavioural problem with those who did not, proportionally more adults with these problems also reported using medication for their mental wellbeing. Approximately 50% of adults with a mental or behavioural problem used medications, of which 14% used pharmaceutical medications for mental wellbeing; 18% used vitamin or mineral supplements for mental wellbeing; and 14% used herbal or natural medications for mental wellbeing.

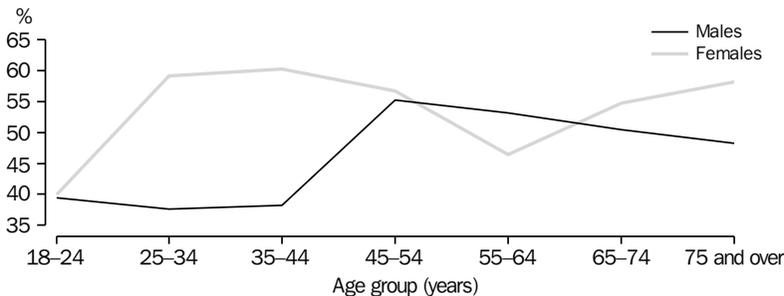
### 9.14 VERY HIGH LEVELS OF PSYCHOLOGICAL DISTRESS(a) — 2001



(a) Based on Kessler 10 Scale.

Source: ABS data available on request, 2001 National Health Survey.

### 9.15 ADULTS WITH MENTAL AND BEHAVIOURAL PROBLEMS(a), Who used medication for mental wellbeing(b) — 2001



(a) Long term conditions that have lasted or are expected to last for six months or more. (b) Used medication for mental wellbeing in the two weeks prior to interview.

Source: ABS data available on request, 2001 National Health Survey.

More women with a mental or behavioural problem reported using medication for mental wellbeing compared with men (54% and 45% respectively). With the exception of the 55–64 year age group, the proportion of women with these problems and using this medication was higher than the comparable proportion of men in all age groups (graph 9.15). The greatest differences between sexes were recorded in age groups between 25 and 44 years. Medication use was most frequently reported by women aged 35–44 years (60%), followed by those aged 25–34 (59%) and 75 years and over (58%). For men, medication use was most commonly reported by those aged 45–54 years (55%), followed by those aged 55–64 (53%) and 65–74 years (50%).

The most frequently reported types of medications taken for mental wellbeing were the same for both men and women with mental and

behavioural problems: antidepressants, followed by vitamin or mineral supplements, herbal or natural medications, sleeping tablets or capsules, tablets or capsules for anxiety or nerves, tranquilisers, and mood stabilisers.

## Asthma

Asthma is a chronic inflammatory disorder of the lung's air passages which makes them narrow in response to various triggers. This leads to episodes of shortness of breath and wheezing. Asthma can begin at all ages, including the very young. The disease can start as a mild chronic cough and lead to mild or severe wheezing, and sometimes even to respiratory arrest.

Although asthma has low associated mortality, people with asthma can experience reduced quality of life and require a range of health

services, from general practitioner care to emergency department visits or hospital in-patient care. It was one of the most frequent reasons for hospitalisation among children aged 0–14 (AIHW 2002a). The management of asthma is an important public health issue because of the personal burden it places on those with asthma, often with onset in childhood, and the financial burden it places on the health system.

**Morbidity**

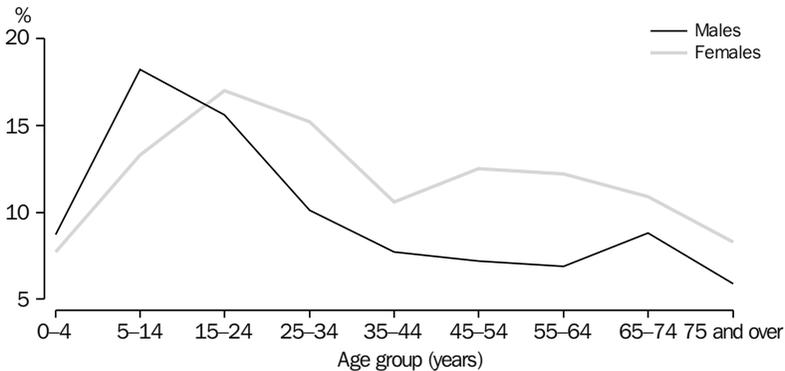
The prevalence of asthma in Australia is one of the highest in the world, with more than two million Australians (12%) reporting the disease in 2001. Asthma is more prevalent in young people than older age groups. For people under 25 years of

age, the prevalence of asthma is 15%. Up to 14 years of age, asthma was more common among males than among females. In older age groups, however, asthma was more common among females than among males (graph 9.16).

**Mortality**

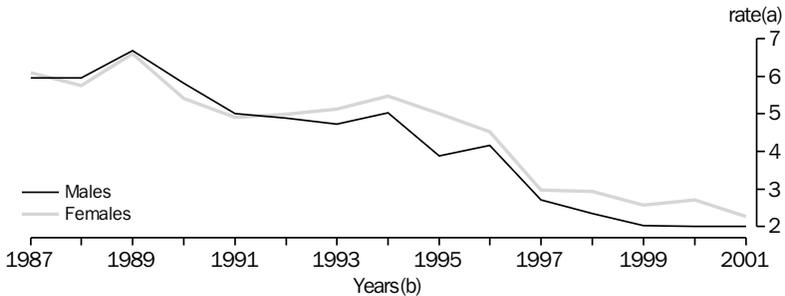
Asthma was identified as the underlying cause of 0.3% of deaths registered in Australia in 2001, when 175 males and 247 females died from the disease. The most recent peak in asthma deaths occurred in 1989, and standardised death rates for asthma have been declining since then (graph 9.17). Most asthma deaths occur in older age groups.

**9.16 PREVALENCE OF ASTHMA — 2001**



Source: ABS data available on request, 2001 National Health Survey.

**9.17 STANDARDISED DEATH RATES(a) FROM ASTHMA**



(a) Standardised death rate per 100,000 of the mid-year 2001 population. (b) Changes in coding rules for ICD-10 (1997 onwards) have resulted in substantially decreased reporting of asthma as underlying cause of death (see ABS, Causes of Death, Australia 2001, (3303.0)).

Source: AIHW 2003b.

## Arthritis and osteoporosis

In July 2002, AHMAC announced arthritis and musculoskeletal conditions as a new (seventh) NHPA in recognition of the major burden these diseases place on the community. 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 the quality of life and impose a heavy economic burden on the community.

Osteoarthritis is one of the most common types of arthritis and affects the cartilage in the joints. Cartilage cushions the ends of bones where bones meet to form a joint. In osteoarthritis this cartilage degenerates. Osteoarthritis is most commonly found in the knees, neck, lower back, hip and fingers.

Rheumatoid arthritis is the most common form of inflammatory arthritis. Inflammatory arthritis is characterised by joint swelling and destruction. In rheumatoid arthritis the immune system attacks the tissues lining the joints. As a result of this

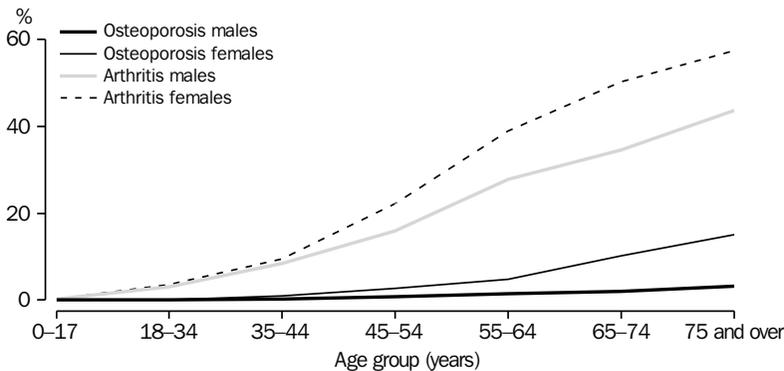
attack, inflammation occurs causing pain, heat and swelling. The disease can also cause inflammation of connective tissue, blood vessels and organs.

Osteoporosis is not a form of arthritis but is another type of musculoskeletal disorder. Osteoporosis (porous bones) is a disease where bone density and structural quality deteriorate, leading to an increased risk of fracture. The most common sites of fracture are the bones of the spine, the hip and the wrist. However other bones are commonly affected, including the shoulder, ribs and the pelvis.

### Morbidity

Estimates based on information reported in the 2001 NHS show that over 2.5 million Australians (14%) had some form of arthritis and over 299,000 Australians (1.6%) had osteoporosis. The prevalence is greater in females at nearly all ages. The prevalence of arthritis is 16% for females compared to 11% for males, while the prevalence of osteoporosis is 3.0% for females and 0.6% for males. Graph 9.18 shows that the prevalence of arthritis and osteoporosis increases sharply with age. For people aged 65 and over, the prevalence of arthritis is 47% and the prevalence of osteoporosis is 8.0%.

9.18 PREVALENCE OF ARTHRITIS — 2001



Source: ABS data available on request, 2001 National Health Survey.

## Communicable diseases

Communicable diseases are those diseases capable of being transmitted from one person to another, or from one species to another. Two major groups of communicable diseases, classified in the *International Classification of Diseases (ICD-10)*, are infectious and parasitic diseases (ICD-10 codes A00–B99) and acute respiratory infections (ICD-10 codes J00–J22) which includes influenza and pneumonia as well as other acute upper and lower respiratory infections. In 2001, these two groups accounted for 3.6% of all deaths in Australia (4,444 deaths). Influenza and pneumonia accounted for 61% (2,702) of these deaths. Death rates increase with age, and were greater for males than females in most age groups. In 2000–01, there were 89,318 hospital separations in Australia with a principal diagnosis of infectious and parasitic diseases. Acute respiratory infections including influenza and pneumonia were responsible for a further 122,601 separations.

Under the National Notifiable Diseases Surveillance System (NNDSS), state and territory health authorities submit reports of more than 50 communicable disease notifications for compilation by the Department of Health and Ageing. In 2001, the diseases reported to NNDSS were revised to include cryptosporidiosis,

influenza, pneumococcal disease, Japanese encephalitis, Kunjin virus, Murray Valley encephalitis, anthrax, Australian bat lyssavirus, and other lyssavirus infections. At the same time, diseases that were becoming rare or of less public health significance in Australia, namely chancroid, lymphogranuloma venereum, hydatid disease and yersiniosis were removed from the NNDSS.

The provisional total of notifications to NNDSS in 2002 is 101,319, a small decrease (2.7%) on the 104,125 notifications in 2001 (table 9.19). In 2002, sexually transmitted infections (STI) were the most commonly reported communicable diseases, accounting for 32% of all notifications, followed by gastrointestinal diseases (26%) and blood-borne diseases (24%). Chlamydia was the most common STI (24,011 notifications, 74% of total STIs), campylobacteriosis the most common gastroenteritis (14,571 notifications, 55% of total) and hepatitis C (unspecified) was the most common blood-borne disease (15,981 notifications, 67% of total). Compared with 2001, there were increases in notifications of STIs due mainly to increases in chlamydia; while there were decreases in reports of blood borne diseases, gastrointestinal diseases and vaccine preventable diseases.

## 9.19 NATIONAL NOTIFIABLE DISEASE SURVEILLANCE SYSTEM REPORTS

Disease(d)	Notifications			Rate per 100,000 population(a)		
	2000(b)	2001(b)	2002(c)	2000(b)	2001(b)	2002(c)
	no.	no.	no.	%	%	%
<b>Blood-borne diseases</b>						
Hepatitis B (incident)	399	428	426	2.1	2.2	2.2
Hepatitis B (unspecified)	7 908	8 413	6 916	41.3	43.3	35.2
Hepatitis C (incident)	357	669	481	1.9	3.4	2.4
Hepatitis C (unspecified)	19 647	19 543	15 981	102.6	100.7	81.3
Hepatitis D	27	20	20	0.1	0.1	0.1
Hepatitis n.e.c.	1	2	—	—	—	—
<b>Gastrointestinal diseases</b>						
Botulism	2	2	—	—	—	—
Campylobacteriosis	13 528	16 038	14 571	70.6	82.6	74.1
Cryptosporidiosis	..	1 567	3 256	..	8.1	16.6
Haemolytic uraemic syndrome	10	10	13	0.1	0.1	0.1
Hepatitis A	834	521	395	4.4	2.7	2.0
Hepatitis E	7	13	12	—	0.1	0.1
Listeriosis	66	61	60	0.3	0.3	0.3
Salmonellosis	6 111	7 085	7 748	31.9	36.5	39.4
Shigellosis	487	566	498	2.5	2.9	2.5
SLTEC, VTEC(e)	41	47	52	0.2	0.2	0.3
Typhoid	59	84	72	0.3	0.4	0.4
Yersiniosis	74	..	..	0.4	..	..
<b>Quarantinable diseases</b>						
Cholera	1	4	5	—	—	—
<b>Sexually transmissible diseases</b>						
Chlamydial infection	16 770	20 222	24 011	87.6	104.2	122.1
Donovanosis	13	38	19	0.1	0.2	0.1
Gonococcal infection	5 708	6 232	6 247	29.8	32.1	31.8
Syphilis	1 780	1 407	2 103	9.3	7.2	10.7
<b>Vaccine preventable diseases</b>						
Diphtheria	—	1	—	—	—	—
Haemophilus influenzae type b	28	26	29	0.1	0.1	0.1
Influenza	..	1 286	3 668	..	6.6	18.7
Measles	108	135	36	0.6	0.7	0.2
Mumps	214	114	74	1.1	0.6	0.4
Pertussis	5 814	9 085	5 842	30.4	46.8	29.7
Pneumococcal disease	..	1 650	2 317	..	8.5	11.8
Rubella	319	268	252	1.7	1.4	1.3
Tetanus	7	3	2	—	—	—
<b>Vector-borne diseases</b>						
Arbovirus infection n.e.c.	55	34	20	0.3	0.2	0.1
Barmah Forest virus infection	624	1 158	904	3.3	6.0	4.6
Dengue	232	178	224	1.2	0.9	1.1
Kunjin virus	..	4	—	..	—	—
Malaria	959	715	477	5.0	3.7	2.4
Murray Valley encephalitis	9	6	2	—	—	—
Ross River virus infection	4 272	3 353	1 457	22.3	17.3	7.4

For footnotes see end of table.

...continued

## 9.19 NATIONAL NOTIFIABLE DISEASE SURVEILLANCE SYSTEM REPORTS — *continued*

Disease(d)	Notifications			Rate per 100,000 population(a)		
	2000(b)	2001(b)	2002(c)	2000(b)	2001(b)	2002(c)
	no.	no.	no.	%	%	%
<b>Zoonoses</b>						
Brucellosis	26	21	39	0.1	0.1	0.2
Hydatid infection	25	..	..	0.1	..	..
Leptospirosis	243	245	156	1.3	1.3	0.8
Ornithosis	103	145	204	0.5	0.7	1.0
Q fever	523	738	764	2.7	3.8	3.9
<b>Other diseases</b>						
Legionellosis	469	315	327	2.4	1.6	1.7
Leprosy	5	3	6	—	—	—
Meningococcal infection	621	679	681	3.2	3.5	3.5
Tuberculosis	1 062	991	952	5.5	5.1	4.8
<b>Total</b>	<b>89 548</b>	<b>104 125</b>	<b>101 319</b>	<b>467.5</b>	<b>536.4</b>	<b>515.3</b>

(a) Rate per 100,000 population is calculated using the estimated resident population at the midpoint (30 June) of the relevant calendar year. (b) NNDSS data for 2000 and 2001 revised after consultations with states and territories. (c) Notifications data for the year 2002 were provisional at the date of analysis (22 July 2003). (d) Diseases reported to NNDSS from all jurisdictions except hepatitis B (unspecified) not reported from NT; incident hepatitis C not reported from Qld; campylobacteriosis not reported from NSW; donovanosis not reported from SA. Diseases under surveillance for which no notifications were received in the period 1999–2001 were plague, rabies, viral haemorrhagic fever, yellow fever, chancroid, lymphogranuloma venereum, poliomyelitis, Japanese encephalitis, anthrax, Australian bat lyssavirus, other lyssavirus n.e.c. (e) SLTEC/VTEC is shiga-like toxins and verotoxin producing *E. coli* infections.

Source: DoHA 2003.

### HIV and AIDS

In collaboration with the state and territory health authorities and the Australian Government, surveillance for human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) is conducted by the National Centre in HIV Epidemiology and Clinical Research. This centre is part of the Faculty of Medicine, University of New South Wales and is funded primarily by the Department of Health and Ageing through the Australian National Council on AIDS, Hepatitis C and Related Diseases.

At 31 December 2002, the cumulative number of HIV cases (since 1985) was 22,550. The number of new HIV infections decreased steadily and reached a low in 1999. However, from then on, HIV infections appear to have increased by around 4% on average per year. The cumulative number of AIDS diagnoses was 9,083 (since 1981), and there had been a total of 6,272 deaths attributable to AIDS (table 9.20).

The reduced numbers of new AIDS diagnoses in recent years (table 9.20) has been due to the decline in HIV incidence that took place in the mid-1980s, and the use, since around 1996, of effective combination antiretroviral therapy for the treatment of HIV infection. In Australia, approximately 50% of all people living with HIV infection are receiving antiretroviral treatment. However, the long-term effectiveness of antiretroviral treatment remains unknown, and if treatments begin to fail for a substantial proportion of people, then AIDS incidence could increase again.

Transmission of HIV in Australia continues to be mainly through sexual contact between men (77%). This was followed by transmission through heterosexual contact (11%) and injecting drug use (4.4%) (table 9.21). A small percentage of diagnosed infections were associated with a history of injecting drug use (2.2% in 2002). Mother-to-child transmission of HIV infection and transmission in a health care setting remain rare in Australia.

## 9.20 NEWLY DIAGNOSED HIV CASES(a), AIDS CASES AND DEATHS FOLLOWING AIDS(b)

	Year of diagnosis(c)										Total
	Prior to 1994	1994	1995	1996	1997	1998	1999	2000	2001	2002	
HIV cases(a)	15 044	1 017	930	918	821	759	724	745	761	823	<b>22 550</b>
AIDS cases(b)	5 061	953	810	669	382	318	193	252	199	246	<b>9 083</b>
AIDS deaths(b)	3 496	753	655	515	245	156	127	134	100	91	<b>6 272</b>

(a) Not adjusted for multiple reporting. Total includes 8 cases for which the date of HIV diagnosis was not reported. (b) AIDS cases diagnosed and deaths following AIDS in 2000, 2001 and 2002 were adjusted for reporting delays; AIDS cases diagnosed and deaths following AIDS in previous years were assumed to be completely reported. (c) 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.

Source: National Centre in HIV Epidemiology and Clinical Research, 'HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2003', National Centre in HIV Epidemiology and Clinical Research, The University of New South Wales, Sydney, NSW, 2003.

## 9.21 CHARACTERISTICS OF CASES OF NEWLY DIAGNOSED HIV INFECTION(a), Number of cases and proportion of total cases

	Units	Year of diagnosis(b)										Total(c)
		Prior to 1994	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Total cases	no.	15 044	1 017	930	918	821	759	724	745	761	823	22 550
Males	%	93.6	90.8	91.9	91.4	89.4	87.1	89.6	89.3	87.8	88.3	92.3
State/territory												
New South Wales	%	60.3	49.8	57.9	50.0	53.0	53.5	52.8	48.3	44.9	47.1	57.2
Victoria	%	20.4	21.2	17.6	20.5	21.9	18.4	19.2	25.2	27.2	26.5	20.9
Queensland	%	8.9	15.9	11.9	16.7	13.8	13.8	17.3	15.3	13.7	15.8	10.9
South Australia	%	3.5	3.7	3.3	5.0	4.1	4.6	3.0	3.1	5.7	3.2	3.6
Western Australia	%	4.8	7.3	6.5	6.2	4.9	6.6	5.5	6.2	6.4	5.2	5.2
Tasmania	%	0.4	0.2	0.6	0.3	—	0.4	0.4	—	0.7	0.6	0.4
Northern Territory	%	0.5	0.5	0.2	0.5	1.3	1.6	0.7	0.4	0.5	1.0	0.6
Australian Capital Territory	%	1.2	1.4	1.9	0.8	1.0	1.0	1.1	1.5	0.9	0.6	1.2
Exposure category(d)												
Male homosexual contact	%	81.2	74.4	73.7	75.5	72.8	65.5	65.5	68.2	66.5	71.3	77.4
Male homosexual contact and injecting drug use	%	3.6	6.4	5.2	4.0	4.8	4.7	6.3	3.4	5.1	3.5	4.1
Injecting drug use(e)	%	4.7	3.3	4.5	2.8	3.1	3.4	5.5	4.4	5.7	2.2	4.4
Heterosexual contact	%	6.1	13.7	15.1	16.7	18.2	25.2	21.8	23.6	22.1	22.6	11.0
Haemophilia/coagulation disorder	%	2.4	—	0.1	—	—	0.1	0.5	—	0.1	—	1.6
Receipt of blood/tissue	%	1.8	0.8	0.4	0.2	0.1	0.6	0.3	—	—	—	1.2
Mother with/at risk of HIV infection	%	0.2	1.0	0.8	0.8	0.9	0.4	0.1	0.4	0.4	0.3	0.4
Health care setting	%	—	0.3	0.1	—	—	—	—	—	—	0.1	0.1
Other/undetermined	%	20.9	5.1	7.5	9.7	9.1	8.0	9.5	8.3	7.9	10.8	16.7

(a) Not adjusted for multiple reporting. (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) Total includes 8 cases for which the date of HIV diagnosis was not reported. (d) The 'Other/undetermined' category was excluded from the calculation of the percentage of cases attributed to each HIV exposure category. (e) Excludes males who also reported a history of homosexual/bisexual contact.

Source: National Centre in HIV Epidemiology and Clinical Research, 'HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2003', National Centre in HIV Epidemiology and Clinical Research, The University of New South Wales, Sydney, NSW, 2003.

## Children's immunisation

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 register is administered by the Health Insurance Commission (HIC) on behalf of the Department of Health and Ageing 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 National Health and Medical Research Council (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 influenza type b).

ACIR data indicated that, at 31 December 2002, 91% of one year olds, 89% of two year olds and 82% of 6 year olds were fully immunised according to the NHMRC Recommended Australian Standard Vaccination Schedule. State summaries by age group based on ACIR data are contained in the quarterly *Communicable Diseases Intelligence* bulletin, published on the HIC web site, <<http://www.hic.gov.au>>.

## Health care delivery and financing

### Government role

The Australian Government funds, directly or indirectly, most non-hospital medical services, pharmaceuticals and health research. Public hospital services, and home and community care for aged and disabled persons are jointly funded by the Australian, state and territory governments. Residential facilities for aged persons are funded by a number of sources, including the Australian Government. Public health insurance is provided through Medicare, which is discussed in more detail later in this chapter.

The states and territories are primarily responsible for the delivery and management of public health services and the regulation of health care providers and private health facilities. They deliver public hospital services and a wide range of community and public health services. For example, some state and territory government

funded organisations provide school dental care and dental care for low income earners, with other dental care being delivered in the private sector without government funding. Local governments within states deliver most environmental health programs.

Public hospitals, which provide the majority of acute care beds, are funded by the Australian, state and territory governments, in addition to receiving revenue from services to private patients. Large urban public hospitals provide most of the more complex types of hospital care such as intensive care, major surgery, organ transplants and renal dialysis, as well as non-admitted patient care. Many public hospitals have their own pharmacies which provide medicines to admitted patients free-of-charge and do not attract direct Australian Government subsidies under the Pharmaceutical Benefits Scheme (PBS). This is discussed in more detail later in this chapter.

A small number of doctors and paramedical professionals are salaried employees of the various tiers of government. Many salaried specialist doctors in public hospitals are able to treat some private patients in hospital and usually contribute to the hospital a portion of the income earned from fees charged. Other doctors may contract with public hospitals to provide medical services.

### Private sector role

The private sector, operating in the delivery of, and insurance for, health services, receives both direct and indirect government subsidies. Within this sector, organisations operating for profit and not-for-profit play a significant role in providing health services, public health and health insurance. For example, privately owned nursing homes provide the majority of long-term aged care beds.

Separate non-admitted and day hospital facilities for admitted patient surgical procedures are mostly located in the private sector. This sector includes a large number of doctors and paramedical professionals who are self-employed, generally providing services such as general practice and specialist services, diagnostic imaging, pathology and physiotherapy.

Most prescribed pharmaceuticals dispensed by private sector pharmacies are directly subsidised by the Australian Government through the PBS.

An important component of the Australian health care system is private health insurance, which can cover part or all of the hospital charges to private patients directly, a portion of medical fees for services provided to private admitted patients in hospitals, paramedical services, some dental services and some aids such as spectacles. The Australian Government subsidises private health insurance premiums through a 30% rebate.

## National health care system

There are five major kinds of Australian Government health funding mechanisms:

- grants to state and territory governments under the Australian Health Care Agreements to assist with the cost of providing public hospital services
- medical benefits, providing patients with rebates on fees paid to privately practising doctors and optometrists
- pharmaceutical benefits, through the PBS, providing patients with access to a broad range of subsidised medicines
- Health Program Grants to government and non-government service providers for a range of health services (e.g. radiation oncology (capital component), pathology and primary medical services). Health Program Grants are used to achieve health policy objectives such as improving access for specific population groups, influencing the growth and distribution of selected and potentially high cost services, or providing an alternative to fee-for-service arrangements, such as the Medicare and PBS
- the 30% private health insurance rebate.

## Medicare levy

When Medicare began in 1984, the 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 systems that preceded it.

In 2000–01, revenue raised from the Medicare levy was approximately 18% of total Australian Government health expenditure. The Australian Taxation Office estimated revenue from the Medicare levy to be \$4.6b in 2000–01.

## The Australian Government funding of hospitals

Australian Government funding to the states' and territories' health systems is made through the Australian Health Care agreements.

In 2002–03 total Australian Government funding under the Australian Health Care Agreements was around \$7.2b. Of this amount, over 98% was paid to the states and territories as Health Care Grants, while the balance was either allocated to national initiatives in areas of mental health, palliative care and casemix development, or paid to those states and territories which were eligible to receive financial assistance from the National Health Development Fund.

## Total health expenditure

For 2000–01, the preliminary estimate of total expenditure on health (including both public and private sectors) was \$60.8b, compared with expenditure of \$55.7b in the previous year (table 9.22). This represented an average rate of health expenditure in 2000–01 of \$3,153 per person. In 2000–01, governments provided more than two-thirds (70%) of the funding for health expenditure, while the remaining 30% was provided by the private sector. Health expenditure in volume terms grew at an average annual rate of 4.4% between 1990–91 and 2000–01. In 2000–01, health expenditure as a proportion of gross domestic product was 9.0%. This ratio was 8.8% in 1999–2000, up from 8.7% in 1998–99.

## Hospitals

### Public hospitals

In 2001–02 there were 746 public hospitals nationally, including 22 psychiatric hospitals, compared with 760 in 1997–98. There were an average of 51,461 beds in public hospitals during 2001–02 (table 9.23), representing 65% of all beds in the hospital sector (public and private hospitals combined). Public hospital beds have declined from 3 beds per 1,000 population in 1997–98 to 2.6 beds in 2001–02.

The number of patient separations (discharges, deaths, and transfers) from public hospitals during 2001–02 was around 4 million, compared with 3.8 million in 1997–98. Same-day separations accounted for 48% of total separations in 2001–02 compared with 43% in 1997–98.

## 9.22 TOTAL HEALTH EXPENDITURE(a) AND RATE OF GROWTH

	Expenditure		Rate of growth	
	Current prices	Chain volume measures(a)	Current prices	Chain volume measures(a)
	\$m	\$m	%	%
1990–91	31 267	38 004	n.a.	n.a.
1991–92	33 123	38 469	5.9	1.2
1992–93	35 098	39 893	6.0	3.7
1993–94	36 990	41 714	5.4	4.6
1994–95	39 216	43 758	6.0	4.9
1995–96	42 082	45 905	7.3	4.9
1996–97	45 195	48 224	7.4	5.1
1997–98	48 360	50 642	7.0	5.0
1998–99	51 680	53 026	6.9	4.7
1999–2000	55 668	55 668	7.7	5.0
2000–01	60 779	58 490	9.2	5.1

(a) Reference year is 1999–2000. Chain volume measures are discussed in detail in the section 'Chain volume or 'real' GDP', 'Chapter 29, National accounts'.

Source: AIHW 2003d.

Total days of hospitalisation for public health patients during 2001–02 amounted to 16.3 million, a decrease of 0.4% since 1997–98. The average length of hospital stay per patient in 2001–02 was 4.1 days. For 1997–98 the corresponding figure was 4.4, reflecting the lower number of same-day patients compared with 2001–02. If same-day patients are excluded, the 2001–02 average length of stay was 6.9 days, compared with 7.0 days in 1997–98.

An average of 192,187 staff (full-time equivalent) were employed at public hospitals in 2001–02, of whom 44% were nursing staff and 10% were salaried medical officers. Revenue amounted to \$1,532m. Most of this revenue (58%) was from patients' fees and charges. Recurrent expenditure amounted to \$16,848m, of which 62% was for salaries and wages. The difference between revenue and expenditure is made up by payments from state/territory consolidated revenue and specific payments from the Australian Government for public hospitals, in roughly equal proportions.

### Private hospitals

There were 537 private hospitals in operation in 2001–02, comprising 277 acute hospitals, 24 psychiatric hospitals and 236 free-standing day hospital facilities. The number of acute and psychiatric hospitals has slightly increased on last year but continued the downward trend since 1997–98 when 317 of these hospitals were in operation. In contrast, day hospital facilities have shown strong growth for several years, with only 175 in operation in 1997–98.

Between 1997–98 and 2001–02, the average number of beds available in private acute and psychiatric hospitals increased by 7% to 24,748. There were 1.4 private hospital beds available per 1,000 population in 2001–02. The average number of beds or chairs available at free-standing day hospital facilities (used mainly for short post-operative recovery periods) increased over the same five-year period by 31% to 1,764, reflecting the continued growth in the numbers of free-standing day hospitals.

Private hospital separations in 2001–02 totalled more than 2.5 million, of which 83% were from private acute and psychiatric hospitals and 17% from free-standing day hospital facilities. Same day separations accounted for 60% of all private hospital separations (compared with 48% of public hospital separations). This higher proportion of same day separations contributed to the lower average length of stay in private hospitals (2.8 days) compared to public hospitals (4.1 days) (table 9.23).

The average number of full-time equivalent staff employed at all private hospitals was 48,506, of whom 62% were nursing staff. Total operating expenditure for private acute and psychiatric hospitals during 2001–02 amounted to \$4,777m. Some 55% of this amount was spent on salaries and wages (including on-costs). Revenue received during the year was \$5,066m, of which 94.5% was received as payments from, or in respect of, patients. Total recurrent expenditure for free-standing day hospital facilities during 2001–02 amounted to \$219m, and revenue received during the year was \$262m.

## 9.23 PUBLIC AND PRIVATE HOSPITALS — 2001–02

	Units	Public(a)	Private(b)	Total
Bed supply				
Facilities	no.	746	537	1 283
Beds/chairs(c)	no.	51 461	(d)26 512	(d)77 973
Activity				
Total separations	'000	3 968	2 551	6 519
Same day separations	'000	1 888	1 525	3 413
Total patient days	'000	16 266	7 228	23 494
Average length of stay	days	4.1	2.8	3.6
Average length of stay excluding all same-day separations	days	6.9	5.6	6.5
Average occupancy rate	%	87.0	(e)75.2	(e)83.0
Non-admitted patient occasions of service	'000	39 523	(e)1 748	(e)41 271
Staff (full-time equivalent)(c)	'000	192	49	241
Revenue	\$m	1 532	5 328	6 860
Recurrent expenditure	\$m	(f)16 848	4 996	21 844

(a) Acute and psychiatric hospitals. (b) Acute and psychiatric hospitals and free-standing day hospital facilities. (c) Annual average. (d) Including beds, chairs, recliners at free-standing day hospital facilities. (e) Excluding free-standing day hospital facilities. (f) Excluding depreciation.

Source: *Private Hospitals, Australia, 2001–02 (4390.0); AIHW 2003a.*

### Pharmaceutical Benefits Scheme (PBS)

The Australian Government provides persons eligible for Medicare with access to a wide range of prescription medicines through the PBS. Further discounts are given to concession card holders such as Health Care Card, Pensioner Concession or Australian Government Seniors Health Card. The following details relate to charges and safety net levels applying at 1 January 2003.

In 2002–03 the PBS had 159 million benefit prescriptions, representing a cost to the Australian Government of \$4,584.7m and a total cost, including co-payments, of \$5,444.4m (table 9.24).

The number of PBS prescriptions per capita in 2002–03 was 8.0, compared with 7.9 in 2001–02. The number of benefit prescriptions increased by 2.6% over the previous year, and the cost to the Australian Government of these prescriptions grew by 9.2% (in current dollars).

The rate of growth in prescription numbers and their cost reflects the ongoing trend towards newer and more costly medicines. Over the 10 years from 1992–93 to 2002–03, the average PBS dispensed price doubled, from \$16.76 to \$34.24 (in current dollars).

### Private health insurance

Private health insurance is offered by 43 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 that is available to all Australians. Depending on the type of cover purchased, private health insurance provides cover against all or part of hospital theatre and accommodation costs in either a public or private hospital, medical costs in hospital, and costs associated with a range of services not covered under Medicare including private dental services, optical, chiropractic, home nursing, ambulance and natural therapies. Overall, the private health sector funds around one-third of all health care in Australia.

#### Health insurance coverage

The introduction of Medicare in 1984 resulted in Australians' participation in private health insurance steadily declining. The introduction of the Australian Government 30% rebate on private health insurance in 1999, and the Government's Lifetime Health Cover policy in 2000, saw participation in private hospital cover increase dramatically, with participation rates rising from 31% in June 1999 to 46% in September 2000. Rates appear now to have stabilised with a participation rate of 44% as at 31 March 2003 (graph 9.25).

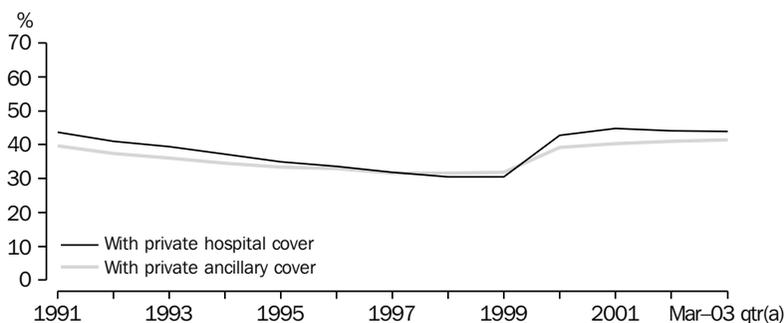
## 9.24 PBS(a), Prescription volume and cost (current dollars)

	Prescription volume millions	Australian Government cost \$m	Total cost(b) \$m	Prescriptions per capita no.	Average dispensed price in current prices \$
1990-91	96.3	1 171.5	1 330.5	5.6	13.82
1991-92	94.1	1 134.0	1 442.2	5.4	15.32
1992-93	106.2	1 419.5	1 779.4	6.0	16.76
1993-94	115.0	1 701.3	2 097.0	6.5	18.23
1994-95	118.7	1 897.4	2 341.9	6.6	19.73
1995-96	124.9	2 207.4	2 685.5	6.9	21.50
1996-97	124.1	2 348.3	2 878.5	6.7	23.20
1997-98	125.1	2 541.5	3 112.3	6.7	24.88
1998-99	128.9	2 795.6	3 397.0	6.8	26.35
1999-2000	138.1	3 187.2	3 839.0	7.2	27.80
2000-01	148.0	3 820.6	4 564.7	7.6	30.83
2001-02	155.0	4 197.3	5 003.3	7.9	32.29
2002-03	159.0	4 584.7	5 444.4	8.0	34.24

(a) Includes PBS categories of Concessional, General, Safety Net and Emergency (Doctor's Bag) Drugs prescriptions. Excludes: (i) payments through miscellaneous services (Highly Specialised Drugs, IVF Centre Hormones, Human Growth Hormones, Safety Net Card issue costs, Aboriginal Health Services, etc.). In 2001-02 this expenditure was \$395.0m (ii) prescription medicines subsidised by the Australian Government under the Repatriation Pharmaceutical Benefits Scheme (RPBS) administered by the Department of Veterans' Affairs. In 2002-03, there were 15.4 million RPBS prescriptions at a cost to the Australian Government of \$426.0m. (b) Total cost consists of Australian Government cost and patient co-payments.

Source: T. Lloyd, (Department of Health and Ageing) 2003, pers. comm., 22 July 2003.

## 9.25 PERSONS WITH PRIVATE HEALTH INSURANCE, Proportion of total population



(a) For the previous 3 months ending March 2003.

Source: Private Health Insurance Administration Council, 'Annual Statistics, 1991-02 and Quarterly Statistics, March 2003'.

## Household expenditure on health and medical care

Average household expenditure on health and medical care increased steadily between 1984 and 1998-99. As a proportion of total household expenditure on goods and services, health and medical care increased from 3.9% in 1984 to 4.7% in 1998-99.

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. The ABS has undertaken the HES at five-yearly intervals since 1984. Average expenditure in this survey is calculated across all households, not just those households that spent money on specific goods or services.

Expenditure on accident and health insurance accounted for the largest percentage of total expenditure on health and medical care in each of the survey periods. However, this percentage declined markedly between 1993-94 and 1998-99 (from 50% to 41%) reflecting the decrease in

hospital, medical and dental insurance from 44% of total health expenditure in 1993–94 to 35% in 1998–99. This decrease was largely due to the falling health insurance coverage, and occurred despite increases in private health insurance costs between 1993–94 and 1998–99.

While the proportion of household health expenditure spent on health practitioners' fees has remained relatively constant since 1984, expenditures on individual items have fluctuated. In particular, general practitioner doctors' fees decreased from 3.8% of total health expenditure in 1984 to 2.4% in 1998–99, while specialist doctors' fees increased from 3.9% to 7.8%.

The proportion of total health expenditure spent on medicines, pharmaceutical products and therapeutic appliances increased from 20% in 1984 to 25% in 1998–99.

## Health work force

In 2002–03, approximately 371,500 people were employed in health occupations in Australia, comprising 3.9% of the total number of employed persons (table 9.26). The largest components of

the health work force were registered nurses (164,700), generalist medical practitioners (36,700) and enrolled nurses (23,600).

Females comprised 73% of the health work force. The high proportion of females in the health work force is due to their predominance in registered midwifery (100%), enrolled nursing (95%), registered nursing (92%) and physiotherapy (80%). Conversely, males represented 83% of the ambulance officers and paramedics, 74% specialist medical practitioners and 66% generalist medical practitioners.

Over one-third (38%) of the health work force were employed on a part-time basis, as compared to 29% of the total number of employed persons in Australia. Of people employed part-time, 91% were female, a higher proportion than the total Australian part-time work force (73%). Males constituted 9.4% of the part-time health work force compared with 28% for the total part-time work force. The higher proportion of part-time workers in the health sector is a reflection of the greater number of females in the health work force, who are more likely to work part-time.

### 9.26 EMPLOYED PERSONS IN HEALTH OCCUPATIONS(a) — 2002–03

	'000	% males	% part-time workers
<i>Health professionals(b)</i>	324.8	26.4	37.9
Generalist medical practitioners	36.7	65.7	20.9
Specialist medical practitioners	19.5	73.7	20.1
Registered nurses	164.7	8.1	45.2
Registered midwives	9.1	—	60.8
Physiotherapists	10.1	19.7	41.2
Other health professionals(b)	84.7	37.6	32.3
<i>Health associate professionals</i>	46.7	31.9	39.5
Enrolled nurses	23.6	5.0	48.5
Ambulance officers and paramedics	9.4	83.4	3.7
Aboriginal and Torres Strait Islander health workers	1.7	42.3	26.9
Other health associate professionals	12.1	43.0	51.4
Total employed in health occupations(c)	371.5	27.1	38.1
Total employed in Australia	9 441.4	55.5	28.5

(a) Annual average of quarterly data. (b) Includes Health service managers. (c) Includes Health professionals, Health service managers, Health associate professionals.

Source: ABS data available on request, Labour Force Survey.

## Web sites for further information

This section provides an alphabetic listing of web sites where additional information on health topics, and organisations involved in health-related activities can be obtained.

### Arthritis Australia

<<http://www.arthritisfoundation.com.au>>

- different types of arthritis
- available treatments
- research grants
- programs and publications

### Asthma Australia

<<http://www.asthmaaustralia.org.au>>

- links to state and territory branches
- information, resources, support and advice for asthma sufferers and their carers

### Australian Childhood Immunisation Register (ACIR)

<[http://www.hic.gov.au/yourhealth/our\\_services/aacir.htm](http://www.hic.gov.au/yourhealth/our_services/aacir.htm)>

- general information for parents about immunisation
- information for parents on the (ACIR)

### Australian Government Department of Health and Ageing

<<http://www.health.gov.au>>

- government policies pertaining to health and ageing
- information on some current health issues or health warnings
- communicable diseases intelligence reports

### Australian Indigenous HealthInfoNet

<<http://www.healthinonet.ecu.edu.au>>

- Indigenous health, population and distribution, cultural, social and physical environments
- policies and programs
- *HealthInfoNet* peer reviewed electronic journal
- conferences and courses

### Australian Institute of Health and Welfare

<<http://www.aihw.gov.au>>

- information and statistics on health and welfare issues
- interactive data such as hospital morbidity, cancer registry and other data which can be analysed online

### Australian Kidney Foundation

<<http://www.kidney.org.au>>

- information packs, newsletters, guidelines for patients, potential donors, medical practitioners, school students and the general community
- information on scholarships and grants.

### Australian Red Cross

<<http://www.redcross.org.au>>

- current humanitarian appeals
- donating blood
- disaster appeals
- first aid tips and courses
- financial donations

### The Australasian Cochrane Centre

<<http://www.cochrane.org.au>>

- reviews on various treatments and health programs

### Cancer Council Australia

<<http://www.cancer.org.au>>

- fund raising events, cancer prevention, publications and media releases
- volunteering and donating

### Cardiac Society of Australia and New Zealand

<<http://www.csanz.edu.au>>

- information for cardiac specialists and other health professionals
- practice guidelines
- competence and training
- meetings and conferences

Consumers' Health Forum of Australia  
<<http://www.chf.org.au>>

- information on consumer rights
- current and back issues of 'Health update'
- media releases and other information
- membership

Diabetes Australia  
<<http://www.diabetesaustralia.com.au>>

- information on subsidised products, publications, fundraising and awareness raising events and campaigns
- information and facts sheets for people with diabetes, health professionals, and researchers
- also contains information in other languages

HealthInsite

<<http://www.healthinsite.gov.au>>

- up-to-date and quality assessed information on important health topics such as diabetes, cancer, mental health and asthma

Heart Support — Australia  
<<http://www.heartnet.org.au>>

- information for patients and their families
- a discussion forum
- up and coming events
- virtual library
- membership

International Agency for Research on Cancer  
<<http://www.iarc.fr>>

- research information
- training courses
- fellowships
- cancer databases

Mental Health Council of Australia  
<<http://www.mhca.com.au>>

- information for the non-government sector
- submissions to various inquiries
- reports and publications
- events and helplines

National Asthma Council  
<<http://www.asthma.org.au>>

- information on national asthma strategies
- asthma information for health professionals and consumers
- information on donations and volunteering

National Breast Cancer Centre  
<<http://www.nbcc.org.au>>

- information on breast cancer, risk factors, early detection, support groups, consumer issues, ovarian cancer program

National Cancer Control Initiative  
<[www.ncci.org.au](http://www.ncci.org.au)>

- information on current and completed projects
- publications on medical practice, etc.

National Health and Medical Research Council  
<[www.nhmrc.gov.au](http://www.nhmrc.gov.au)>

- Information on councils and committees
- health advice on priority areas
- applying for funding
- ethical issues
- embryo research
- research reports, publications and evaluations

National Heart Foundation of Australia  
<<http://www.heartfoundation.com.au>>

- information for health professionals, schools and the media as well as the general population
- health promotion activities
- research grants and local government awards
- statistics
- information on gifts and products
- information on donations

National Institute of Clinical Studies  
<<http://www.nicsl.com.au>>

- the goals of the National Institute of Clinical Studies
- International Collaborative Evaluation Forum

National Stroke Foundation  
<<http://www.strokefoundation.com.au>>

- statistical facts about stroke
- campaigns and awards
- information on donations

Osteoporosis Australia  
<<http://www.osteoporosis.org.au>>

- osteoporosis risk test
- prevention and treatment
- information for health professionals
- information on donations

Royal Flying Doctor Service of Australia  
<<http://www.flyingdoctor.net>>

- annual reports
- flying doctor stories
- information on donations

World Health Organization  
<<http://www.who.int>>

- information on current international health issues
- the 'Bulletin of the World Health Organisation'
- other journals and reports can also be downloaded

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*Private Hospitals, Australia* (4390.0)

*Occasional Paper: Long-term Health Conditions — A Guide To Time Series Comparability From The National Health Survey, Australia, 2001* (4816.0.55.001)

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# Injuries

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## Introduction

The Australian Health Ministers' Conference has endorsed injury prevention and control as one of seven National Health Priority Areas, a policy initiative that seeks to focus on diseases and conditions of particular importance for the health of Australians. The focus on injury has arisen because although a greater proportion of Australians now live into old age than at any time in the past, each year significant numbers are hurt or die as a result of injury. Most injuries are not fatal. In 2001, 7,876 Australians died from injury, while 2.25 million people reported being injured (over a four-week period). Injuries not resulting in death range in severity from minor cuts and bruises to permanent impairment and disability. An important aspect of both fatal and non-fatal injuries is that many of them are preventable.

Understanding who is most at risk and the circumstances that surround injuries can assist in injury prevention and management. Some groups within society, such as the young, the elderly and those employed in certain occupations, tend to be more at risk from injury. For example, injury remains the main cause of death among young people, and, while older Australians are injured at a lower rate than other age groups, they are more likely to die of injury than any other age group.

This article draws on data from three sources. Data on injury-related deaths come from the Australian Bureau of Statistics (ABS) Causes of Deaths Collection, which compiles information from death certificates. Data on injuries come from the ABS 2001 National Health Survey (NHS). Data on Aboriginal and Torres Strait Islander peoples' injuries come from the Indigenous component of the ABS 2001 NHS.

An *injury* is a trauma, poisoning, or other condition of rapid onset to which factors and circumstances external to the person

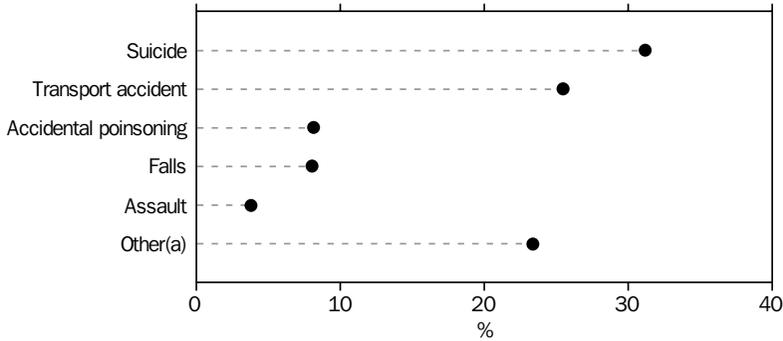
contributed significantly. External causes of injury may be physical, chemical or psychological (AIHW & DHFS 1998). Injuries may be unintentional, for example, as a result of motor vehicle accidents, sporting injuries and accidental poisonings. Some injuries may be intentional, for example, those resulting from assault. Definitions or more precise descriptions of other terms used in this article such as 'injury-related deaths', 'recent injuries' and 'long-term conditions resulting from injury' can be found in *National Health Survey: Injuries, Australia, 2001* (4384.0).

## Injury-related deaths and recent injuries

In 2001 suicide, with 2,454 recorded deaths, was the leading cause of death from injury in Australia, accounting for 31% of all injury-related deaths. Transport accidents were the next most common cause of injury-related death, 2,004 or 25%. Accidental poisoning and falls each caused 8% of injury-related deaths, while assault caused 4% of injury-related deaths (graph S9.1).

Open wounds and bruises were the most common types of recent injuries reported in the 2001 NHS (63% of people reporting recent injuries). Other relatively common injuries were sprains, strains or tears (18% of people with recent injuries), and burns and scalds (6%) (graph S9.2). In 2001, low falls (one metre or less) were the leading cause of recent injury, around 31% of people reporting recent injuries from low falls. Collisions or being struck by an object were also relatively common (19% of those injured), and were also the most common event causing concussion (37% of concussed people) (table S9.3).

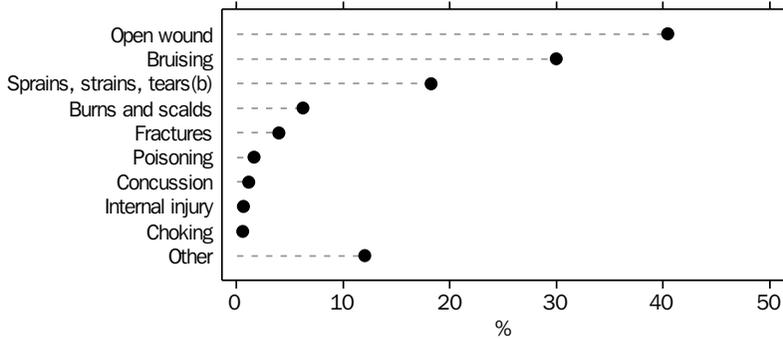
**S9.1 SELECTED CAUSES OF INJURY RELATED DEATHS — 2001**



(a) Includes choking, suffocation, drowning, and many other external causes.

Source: ABS data available on request, Causes of Death Collection, 2001.

**S9.2 PERSONS WHO REPORTED A RECENT INJURY(a), Selected injuries — 2001**



(a) Most recent injury in the past four weeks. (b) Includes dislocations, torn muscles and ligaments.

Source: ABS data available on request, 2001 National Health Survey.

**S9.3 PERSONS WHO REPORTED A RECENT INJURY(a), Selected causes of injury — 2001**

	%
Low fall (one metre or less)	31.0
Collision/struck by object	18.6
Bite or sting	8.6
High fall (greater than one metre)	2.6
Vehicle accident	2.1
Exposure to fire	2.0
Assault	2.0
<b>Total(b)</b>	<b>100.0</b>

(a) Most recent injury in the past four weeks. (b) Includes recent injuries not specified above.

Source: ABS data available on request, 2001 National Health Survey.

**Effects of injuries**

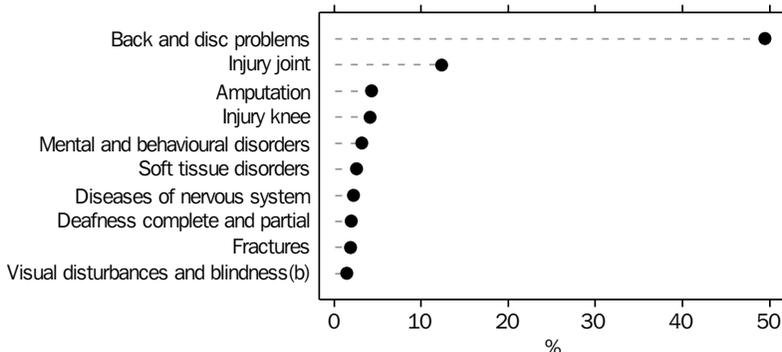
Many injuries have a relatively minor impact on health. Of those people reporting a recent injury in 2001, less than 9% attended hospital. While injuries such as fractures and concussions were less common than some other types of injury, they often required a visit to the hospital. In 2001, 55% of people with a fracture and 37% of concussed people attended hospital, compared with 6% of people with open wounds (the most common type of recent injury).

However, injuries may result in longer-term adverse health affects. In 2001, 2.26 million Australians reported a long-term health condition which was due to an injury. The most commonly reported long-term health conditions arising from injury were back or disc problems. These accounted for half (50%) of the people reporting long-term conditions arising from injury (graph S9.4). Joint injuries were the next most common type of long-term health condition arising from injury (12%), followed by amputation and knee injuries (each 4%).

## Who experiences injury?

Males of all ages are more likely to die from injury than females (graph S9.5). In 2001, the age-standardised death rate from injury for males was 59 per 100,000 population, compared with 23 for females. This partly reflects differences in the behaviour of males and females. Methods of self-harm typically chosen by males (e.g. hanging or firearms) are generally more lethal than those typically chosen by females (e.g. ingestion of poisons) (Commonwealth Department of Human Services and Health 1995).

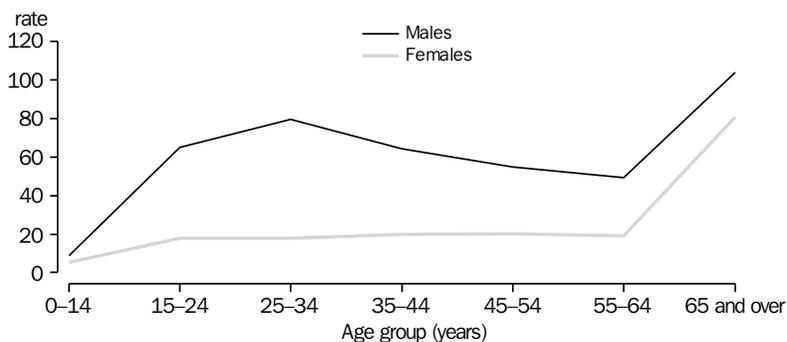
**S9.4 PERSONS WITH A LONG-TERM HEALTH CONDITION(a) ARISING FROM INJURY, Selected conditions — 2001**



(a) Conditions impacting on health for at least six months. (b) Complete or partial blindness.

Source: ABS data available on request, 2001 National Health Survey.

**S9.5 AGE-SPECIFIC DEATH RATES(a) FROM EXTERNAL CAUSES — 2001**



(a) Age-specific death rate per 100,000 people.

Source: ABS data available on request, Causes of Death Collection, 2001.

Males of all ages are generally more likely than females to experience injury (graph S9.6). This reflects differences in the activities in which males and females typically engage, such as the type of work men and women commonly perform. In 2001, the manufacturing industry employed the greatest number of full-time male workers aged 15 years and over (719,200 or 78% of full-time workers in that industry). Just under 8% of these men reported being injured while working. In contrast, the health and community services industry employed the greatest number of full-time female workers in the same age group (322,800 women or 67% of full-time workers in that industry). Under 2% of these women reported being injured while working (see also *Australian Social Trends 2002*, 'Work-related injuries').

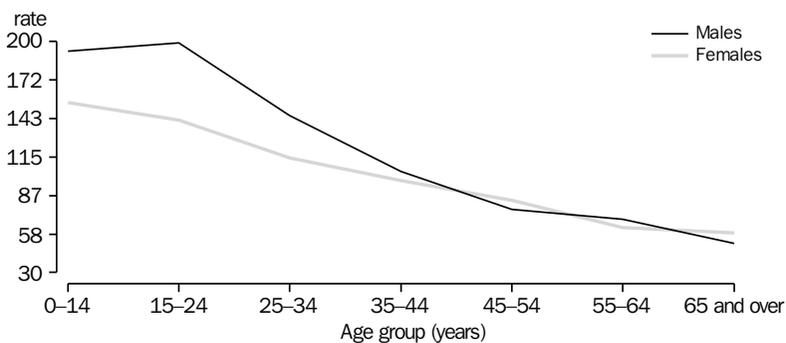
Similarly, because more males participate in organised sport, they are more at risk of sustaining sport-related injuries than females. In 2001, 27% of men participated in organised sport, compared with 20% of women. Boys aged 5–14 years were more likely to participate in organised sport than girls in the same age group (66% and 52% respectively) (ABS 2001). Overall, males of all ages were more than twice as likely as females to report being injured playing organised sport (3% of males compared with 1% of females). Differences in the type of

sports played by males and females may also affect the rate, nature and severity of sporting injuries.

Age-related differences in injury rates are also linked to differences in behaviour and physical characteristics. Young children may have less knowledge of risks and be less able to avoid injury, and young adults are less experienced and tend to take more physical risks than older people (see *Australian Social Trends, 2002*, 'Selected risks faced by teenagers'). In keeping with this, the rate of recent injury was highest among children aged 0–14 years (18%) and people aged 15–24 years (17%), and lowest among older Australians aged 65 and over (6%). However, the rate of injury-related death was highest among older Australians, reflecting their physical vulnerability when injured.

Although young people are less likely to die from injury than older people, injury accounts for the greatest number of deaths among people aged 15–24 years (79% of all deaths among men, and 60% of deaths among women in this age group in 2001). This is partly because young people are less likely than older people to die from other causes, such as health conditions that may develop over long periods of time (e.g. cancers and heart disease).

**S9.6 RATES OF RECENT INJURIES(a), By age group — 2001**



(a) Rate per 1,000 people.

Source: ABS data available on request, 2001 National Health Survey.

People of different ages also experience and die from different kinds of injuries. Children aged 0–14 years were more likely to die from drowning or other accidental threats to breathing, such as choking, suffocation and strangulation (31%), and in transport accidents (37%), than from other causes of injury. Of all types of recent injuries, children aged 0–14 were most likely to be injured in low falls (53%), or from collisions or being struck by an object (14%).

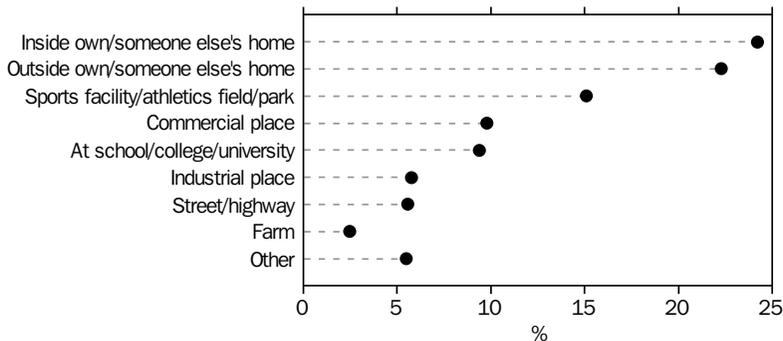
More people aged 15–24 years died in transport accidents than from other causes of injury (45% of all injury-related deaths experienced by this group), while the most common recent injuries in this age group were from low falls, or from collisions or being struck by an object (22% and 23% respectively). While suicide was a major cause of death for young people aged 15–24 years (30% of all injury-related deaths in this age group), the suicide rate was highest among people aged 25–34 years (21 per 100,000 population) in 2001. This age group was also more likely to die from suicide than other causes of injury (43% of injury-related deaths).

Falls made up a higher proportion of injury-related deaths for people aged 65 years and over, than they did for other age groups. This group was also more likely to be injured from a fall than from other types of injury.

## Circumstances of recent injuries

Information about the locations in which injuries occur, and about the activities people are undertaking at the time of injury, can assist in managing the risk of injury in the community. In 2001, injuries most commonly occurred in people's homes — their own or someone else's (46% of all people reporting recent injuries) (graph S9.7). The most common type of injury in and around the home was an open wound, such as a cut which could occur from a sharp knife or tool (45% of those people injured in and around a home). Sports facilities or athletics fields or parks were the second most common venue for injuries (15% of people reporting recent injuries), where the most common type of injury reported at this location was a dislocation, sprain, or strained or torn muscle or ligament. Over three-quarters (77%) of people injured at a sports facility, field or park sustained the injury participating in organised sport, while a further 17% were injured using these areas informally for leisure.

**S9.7 PERSONS WHO REPORTED A RECENT INJURY, Location of injury(a) — 2001**



(a) Most recent injury in the past four weeks.

Source: ABS data available on request, 2001 National Health Survey.

Of a range of activities associated with recent injuries, most people were injured during their leisure time (26% of people reporting recent injuries), followed by working (21%), domestic activities (20%) and organised sport (15%). In 2001, the majority of people reporting a current long-term condition arising from injury sustained that injury at work or school (one million people, or 46% of people with an injury-related long-term health condition), and most of these injuries were reported as being work-related (79%). Injuries from motor vehicle accidents, or sport or exercise participation, also left large numbers of people with a long-term health condition (495,300 and 545,200, respectively).

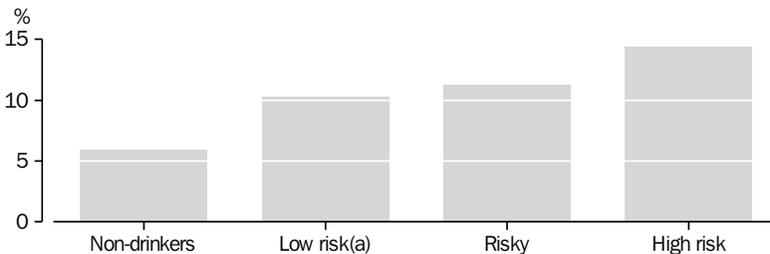
The consumption of alcohol at high levels (i.e. an average of more than five standard drinks per day for men or more than three standard drinks per day for women) is a well known contributing factor in a range of health conditions (Mathers et al. 1999). In addition, there is an association between alcohol consumption and the risk of injury (NIPAC 1999). In 2001, the likelihood of people reporting an injury increased with their drinking risk level. For example, 6% of non-drinkers reported an injury in the four weeks prior to interview, compared with 15% of high risk drinkers (graph S9.10). People who drank at risky or high risk levels were more than twice as likely to report a high fall than

were people who did not drink or who drank at a low risk level. They were also more than five times as likely to have been injured as a result of being attacked.

## Injuries to Aboriginal and Torres Strait Islander peoples

In 2001, injury (classified as external causes of death and including accidents, assault and intentional self-harm) accounted for over twice the number of deaths in the Indigenous population compared to the total Australian population. The Standardised Mortality Ratio (SMR), which calculates the ratio of observed deaths to expected deaths within a population, indicates that Indigenous persons are 2.2 times more likely to die from injury than the Australian population as a whole. Of deaths registered in 2001, 17% of Indigenous deaths and 6% of all deaths were caused by injury. The most common types of injury-related deaths amongst Indigenous persons were suicide (31%) and transport accidents (24%). While this pattern is similar for the entire population, it should be noted that it is likely that a proportion of Indigenous deaths are not registered as Indigenous and therefore these figures are likely to be an underestimate of the true number of Indigenous deaths due to injury.

**S9.10 ALCOHOL RISK(a) AND PROPORTION OF PEOPLE(b) INJURY — 2001**



(a) Risk categories refer to alcohol-related harm in the long-term (i.e. if levels of daily consumption were maintained). Low risk drinking is up to 4 standard drinks per day for men, and up to 2 standard drinks per day for women. Risky drinking is 5 to 6 standard drinks per day for men and 3 to 4 per day for women. High risk drinking is 7 or more standard drinks per day for men and or more for women. (b) Age standardised.

Source: ABS data available on request, 2001 National Health Survey.

The Indigenous supplement to the 2001 NHS found that 14% of Indigenous males and 11% of Indigenous females reported suffering an injury which led to a health-related action in the four weeks preceding the survey. Indigenous males appear more likely to suffer injury than Indigenous females. This feature is particularly apparent in the 25–34 year age group, where 18% of Indigenous males compared to only 7% of Indigenous females reported an injury. The most common types of recent injuries reported were open wounds (48%) followed by bruising (32%), a pattern similar to that for the non-Indigenous population. The leading cause of these injuries was low falls (one metre or less) which accounted for 36% of recent injuries, with collisions or being struck by an object the second most common cause of recent injury of Indigenous persons (22%).

Nearly two-thirds (64%) of reported recent injuries occurred in the home of either the Indigenous respondent or someone they knew.

Among the Indigenous population who reported a recent injury in 2001, 21% reported they attended a hospital due to their injury compared to 8% of the non-Indigenous population. Proportionally, those Indigenous persons who reported suffering a fracture were also more likely to report attending a hospital for medical attention (63%), followed by those who reported a sprain, strain or tear (34%). While open wounds and bruising was the most common recent injury reported among Indigenous persons in 2001, 16% of Indigenous persons who reported these injuries also reported attending a hospital for medical attention. This compared to 6% of non-Indigenous respondents who received open wounds and bruising.

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# Health risk factors among adults

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## Introduction

There are a range of risk factors associated with higher rates of illness or injury in the population. Such factors may be physiological (e.g. high blood pressure), they may relate to the environment (e.g. air pollution) or to lifestyle choices (e.g. smoking). Risk factors have been found to contribute substantially to disease and disability, and thus to reduced length of life and quality of life in Australia (Mathers et al. 1999). However, many risk factors are modifiable. Their impact may often be reduced through action taken by individuals (e.g. quitting smoking or undertaking exercise). In turn, these actions may be influenced by government or community action (e.g. anti-smoking education).

This article focuses on four risk factors: smoking; physical inactivity; overweight and obesity; and risky/high risk alcohol consumption. While each of these is discussed individually, they interact with other risk factors, and are rarely the sole contributor to a disease (WHO 2000).

Data in this article come from the Australian Bureau of Statistics (ABS) 2001 National Health Survey (NHS). In this article, the data refer to adults aged 18 years and over. Definitions or more precise descriptions of terms used in this article, such as 'current smokers', 'physical inactivity', 'overweight and obesity', and 'risky/high risk alcohol consumption' can be found in 'Health risk factors among adults' *Australian Social Trends, 2003* (4102.0). Data on risk factors exhibited by Aboriginal and Torres Strait Islander peoples come from the Indigenous component of the 2001 NHS.

## Smoking

Worldwide, smoking is estimated to cause almost five million premature deaths each year (WHO 2002). In Australia, it is estimated that around 19,000 people died as a result of smoking in 1998 (Riddolfo & Stevenson 2001). Among other conditions, smoking is associated with increased risk of coronary heart disease, stroke, lung cancer, other types of cancer and various respiratory and cardiovascular diseases (WHO 2000). In 2001, people aged 18 years and over who currently smoked were 2.0 times more likely to have bronchitis and were 1.7 times more likely to have emphysema compared with non-smokers. In relation to other conditions such as coronary heart disease, there was little difference between current smokers and people who had never smoked. However, current smokers combined with ex-smokers were 1.4 times more likely to have coronary heart disease and were 1.7 times more likely to have a malignant cancer than those who had never smoked. These higher disease rates — apparent once ex-smokers are included — suggest that certain health conditions may be associated not only with current smoking but with a history of smoking.

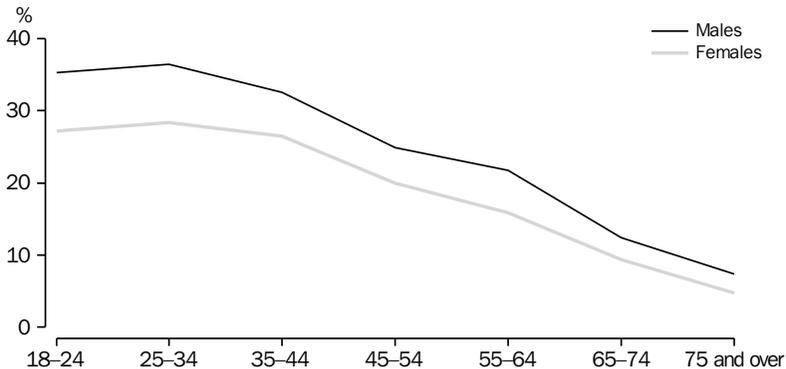
In 2001, 24% of the adult population were current smokers. Smoking was highest among 25–34 year olds (32%), and people were less likely to smoke as they reached older age groups (graph S9.11). This is partly because smoking is associated with higher premature death rates, and smokers are less likely to live to the older age groups.

Men were more likely to smoke than women (28% and 21% respectively). Men were also more likely to smoke over all age categories than women, with the greatest disparity being among those in younger age groups. For 25–34 year olds (the age group with the highest rate of smoking) 37% of men and 28% of women were current smokers.

Adults from the most disadvantaged socioeconomic areas were more likely to smoke than adults from each of the other four socioeconomic areas (graph S9.12). (For a description of the five socioeconomic areas see *Socio-Economic Indexes for Areas* (SEIFA) in (ABS 1998b).) Adults without a tertiary education were more than twice as likely to

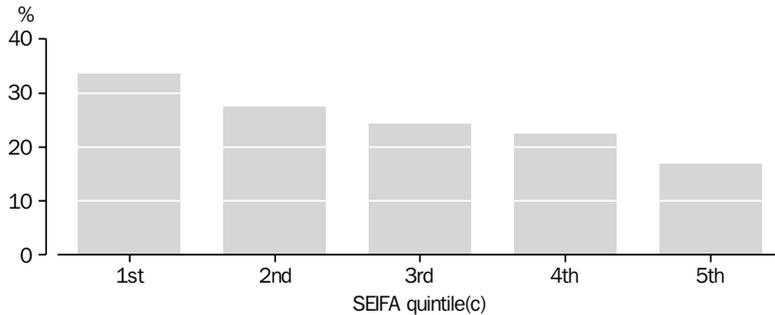
smoke (28% in 2001) compared with those with a tertiary qualification (13%). Smoking was also more prevalent among the unemployed. In 2001, 40% of unemployed adults aged 18–64 years smoked compared with 26% of people aged 18–64 years who were employed.

**S9.11 CURRENT SMOKERS, By age group — 2001**



Source: ABS data available on request, 2001 National Health Survey.

**S9.12 CURRENT SMOKERS(a), By relative socioeconomic disadvantage(b) — 2001**



(a) Persons aged 18 years and over. Age standardised to the 2001 National Health Survey benchmark population. (b) Based on SEIFA. (c) Where the first quintile represents the 20% of the total population living in areas with the highest levels of disadvantage and the fifth quintile represents the 20% of the total population living in areas with the lowest levels of disadvantage.

Source: ABS data available on request, 2001 National Health Survey.

## Physical inactivity

The health benefits of engaging in physical activity are numerous, such as offering protection against some cancers, a reduction in the risk of diabetes and cardiovascular disease and improvements in mental health (Armstrong et al. 2000). Physical activity may also reduce the risk of injury among older people (Armstrong et al. 2000), reduce body fat and improve musculoskeletal health (WHO 2002). Conversely, physical inactivity increases the risk of developing some cancers such as bowel and breast cancer, coronary heart disease, Type 2 diabetes and depression, among other conditions (Mathers et al. 1999). In 2001, physically inactive adults were 1.3 times more likely to have coronary heart disease, and 1.2 times more likely to be obese, than those who exercised. This difference was more evident when comparing inactive adults with those who exercised at moderate or high (rather than low) levels. In this case, physically inactive adults were 1.6 times more likely to be obese and 1.7 times more likely to have a high or very high level of psychological distress.

In 2001, 32% of the adult population were physically inactive (i.e. they did not undertake deliberate exercise, or did so at a very low level, during the survey reference period). When

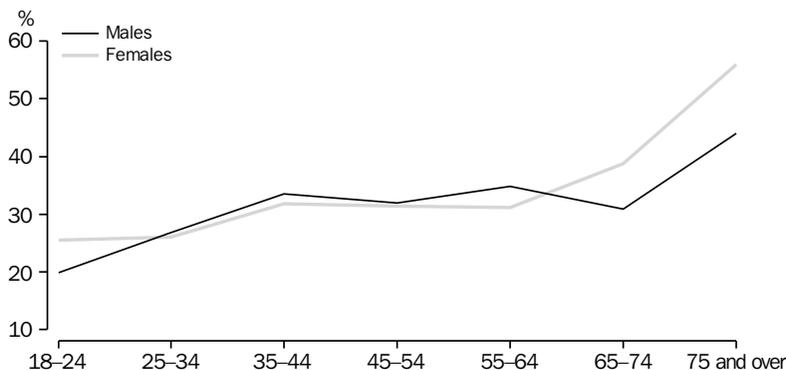
asked to rate their health, 74% of physically inactive adults considered their health to be better than fair, compared with 81% of the total adult population.

In 2001, similar proportions of men and women were physically inactive (31% and 32% respectively). However, men were more likely to exercise at a moderate level (26%) than women (23%), and to exercise at a high level (9%) compared with women (4%).

Physical inactivity was highest among people in older age groups with 35% of those between 65–74 years, and 51% of those over 75 years being physically inactive. Of adults aged 45–54 years, 32% were physically inactive. Males were more likely to be physically inactive than females after the age of 25 years and until retirement age (graph S9.13). Lower proportions of males than females were physically inactive between the ages of 18–24 years and among those over 65 years.

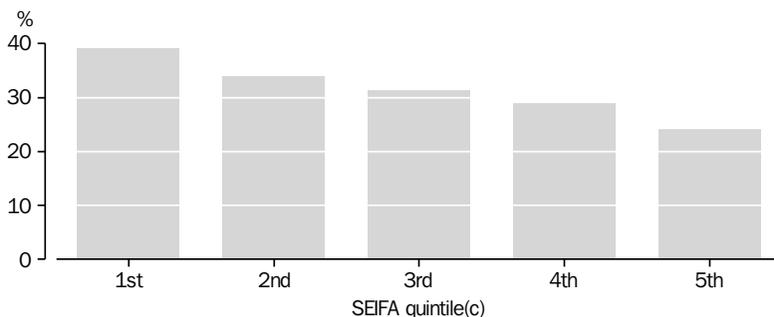
Physical inactivity was more common among adults from the more disadvantaged socioeconomic areas (graph S9.14). Among adults from the most disadvantaged socioeconomic areas, 40% were physically inactive compared with 25% of adults from the least disadvantaged socioeconomic areas.

**S9.13 PHYSICAL INACTIVITY, By age group — 2001**



Source: ABS data available on request, 2001 National Health Survey.

**S9.14 PHYSICAL INACTIVE(a), By relative socioeconomic disadvantage(b) — 2001**



(a) Persons aged 18 years and over. Age standardised to the 2001 National Health Survey benchmark population. (b) Based on SEIFA. (c) Where the first quintile represents the 20% of the total population living in areas with the highest levels of disadvantage and the fifth quintile represents the 20% of the total population living in areas with the lowest levels of disadvantage.

Source: ABS data available on request, 2001 National Health Survey.

## Overweight and obesity

The proportion of people who are either overweight or obese is increasing worldwide (WHO 2000), and despite decreases in the proportion of people who are physically inactive, Australians are also carrying more excess weight. The World Health Organisation recognises that globally there was a decrease in the physical energy people expend in everyday living over the second half of the 20th century (WHO 2000). For example, there is more reliance on motorised transport, and use of labour-saving devices. Changes in the workplace, such as increased use of computers, mean that fewer people now work in physically demanding jobs. Furthermore, there is increased demand for convenience foods which are higher in fat (especially saturated fat) (WHO 2000). People are also more likely now than in the past to participate in leisure activities which involve little, if any, physical activity, such as watching television. In 1997, on average, Australians spent more than half of their free time on such passive leisure activities. Watching television accounted for 36% of all free time (ABS 1998a).

Being overweight or obese is associated with a range of illnesses including coronary heart disease, Type 2 diabetes, certain types of cancer, gallbladder disease, osteoarthritis and high blood pressure (WHO 2000). Compared with adults within the acceptable weight range (according to the Body Mass Index — BMI), persons aged 18 years and over who were

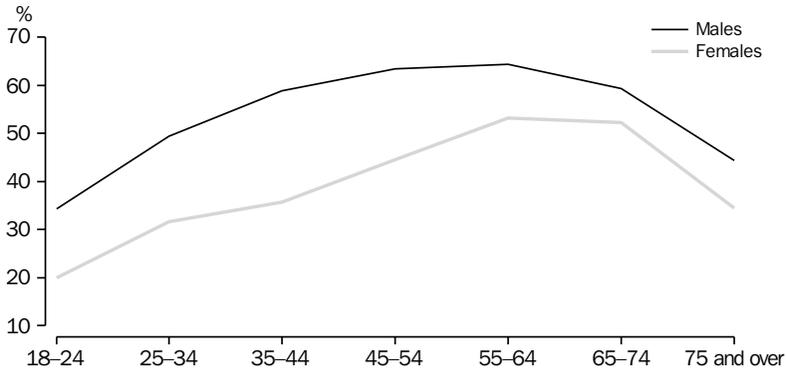
overweight or obese were 1.9 times more likely to have Type 2 diabetes and were 1.6 times more likely to have high blood pressure in 2001. The likelihood increased among those adults who were obese. This group was 2.9 times more likely to have Type 2 diabetes, 2.2 times more likely to have high blood pressure, and 1.5 times more likely to have a form of arthritis.

In 2001, more than 6.5 million Australian adults were overweight or obese. Men were more likely to be overweight or obese than women (55% and 38% respectively), with the average weight of Australians being 74.3 kilograms. The proportion of adults who were overweight or obese tended to increase with age, peaking among those aged 55–64 years (59%). This was the case among both males and females (64% and 53% respectively).

Men were more likely to be overweight than women (40% and 23% respectively). The prevalence of men being overweight was highest among those aged between 55–64 years (47%), while women between the ages of 65–74 years were most likely to be overweight (32%).

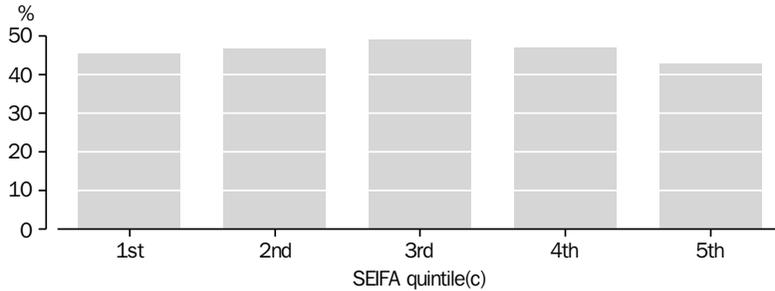
However, women were slightly more likely to be obese than men. Men between 45–54 years had the highest prevalence of obesity (19%), while women aged between 55–64 years were most likely to be obese (22%) (graph S9.15).

**S9.15 OVERWEIGHT OR OBESE, By age group — 2001**



Source: ABS data available on request, 2001 National Health Survey.

**S9.16 OVERWEIGHT OR OBESE(a), By relative socioeconomic disadvantage(b) — 2001**



(a) Persons aged 18 years and over. Age standardised to the 2001 National Health Survey benchmark population. (b) Based on SEIFA. (c) Where the first quintile represents the 20% of the total population living in areas with the highest levels of disadvantage and the fifth quintile represents the 20% of the total population living in areas with the lowest levels of disadvantage.

Source: ABS data available on request, 2001 National Health Survey.

The prevalence of overweight or obesity is higher among certain groups in the population than others. In 2001, 45% of people in the most disadvantaged socioeconomic areas were overweight or obese compared with 43% in the least disadvantaged socioeconomic areas (graph S9.16). However, people in the middle socioeconomic areas (3rd SEIFA quintile) were most likely to be overweight or obese (49%). Among people who were overweight, 34% of men and 21% of women from the most disadvantaged socioeconomic areas were

overweight compared with 39% of men and 23% of women from the least disadvantaged socioeconomic areas. Conversely, there was a higher prevalence of obesity among people from the most disadvantaged socioeconomic areas (18% of men and 19% of women) than among people from the least disadvantaged socioeconomic areas (12% of men and 11% of women). Adults living outside of capital cities were also more likely to be overweight or obese (49%) than those in the capital cities (45%).

## Risky or high risk alcohol consumption

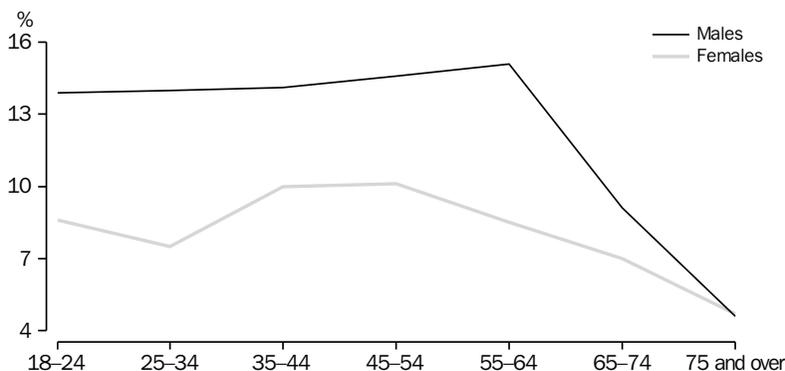
Despite evidence indicating low to moderate levels of alcohol consumption may protect against some conditions such as hypertension, stroke and ischaemic heart disease, consumption at harmful levels can be directly associated with some cancers, liver disease, pancreatitis, diabetes and epilepsy, and indirectly linked to injuries such as through motor vehicle accidents. In 1998, estimated deaths in Australia attributable to the consumption of alcohol was 3,200 (AIHW 2001a). Recent decades have witnessed a global increase in alcohol consumption, with developing countries being the major contributors. In average volume terms, Europeans and North Americans have the highest consumption, with the Eastern Mediterranean, India, Bangladesh and Nepal being among the lowest (WHO 2002). In 1998, Australia was ranked 19th for per capita alcohol consumption; 9th for beer; 18th for wine and 35th for spirits (AIHW 2001a). In the 2001 NHS, 62% of adults recorded that they consumed alcohol in the reference week, and a further 28% recorded consuming alcohol, but not in the reference week.

In 2001, 1.5 million Australian adults (11%) consumed alcohol in risky or high risk amounts. Levels of risky or high risk alcohol consumption was generally constant between

the ages of 18–64 years (around 11%), only decreasing after the age of 65 years. Men were more likely to consume alcohol in risky or high risk amounts (13%) compared to women (9%). Risky or high risk alcohol consumption was most prevalent for men between the ages of 55–64 years (15%), while women were most likely to consume alcohol in risky or high risk amounts at younger ages, with 10% of women between the ages of 35–54 years consuming alcohol at this risk level (graph S9.17).

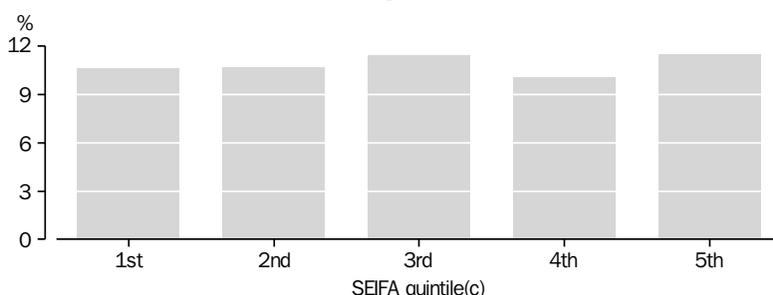
The consumption of alcohol at risky or high risk levels differed among certain socioeconomic groups. Overall, people in the least disadvantaged socioeconomic areas were most likely to consume alcohol at risky or high risk levels (12%). In comparison, the proportion of people in the most disadvantaged socioeconomic areas (graph S9.18) who consumed alcohol in risky or high risk amounts was slightly less (11%). However, men in the most disadvantaged socioeconomic areas were more likely to consume alcohol in risky or high risk amounts than those in the least disadvantaged socioeconomic areas (14% and 12% respectively). Women in the most disadvantaged socioeconomic areas were less likely to consume alcohol in risky or high risk amounts than those in the least disadvantaged socioeconomic areas (8% and 11% respectively).

**S9.17 RISKY/HIGH RISK ALCOHOL CONSUMPTION, By age group — 2001**



Source: ABS data available on request, 2001 National Health Survey.

**S9.18 RISKY/HIGH RISK ALCOHOL CONSUMPTION(a), By relative socioeconomic disadvantage(b) — 2001**



(a) Persons aged 18 years and over. Age standardised to the 2001 National Health Survey benchmark population. (b) Based on SEIFA. (c) Where the first quintile represents the 20% of the total population living in areas with the highest levels of disadvantage and the fifth quintile represents the 20% of the total population living in areas with the lowest levels of disadvantage.

Source: ABS data available on request, 2001 National Health Survey.

## Health risk factors among Aboriginal and Torres Strait Islander peoples

Since the Indigenous population has a different age structure to the non-Indigenous population, comparisons in health risk behaviour are presented after adjusting for the differences in age structure between the two populations.

### Smoking

Indigenous adults aged 18 years or more were more than twice as likely as non-Indigenous adults to be current smokers (49% compared with 22%). Rates of smoking are similar for both females and males.

### Sedentary or low levels of exercise

Around 70% of both Indigenous and non-Indigenous adults living in non-remote areas in 2001 reported their levels of exercise as either sedentary or low in the two weeks prior to being surveyed, with proportions generally increasing with age. A higher proportion of Indigenous women reported undertaking low or sedentary levels of exercise than Indigenous men (64% and 50% respectively).

## References

ABS (Australian Bureau of Statistics) 2003, *Australian Social Trends*, cat. no. 4102.0, ABS, Canberra.  
ABS 1998a, *How Australians Use Their Time*, cat. no. 4153.0, ABS, Canberra.

## Overweight or obesity

Body mass categories discussed in this paragraph are based on self reported measurements of height and weight. Indigenous Australians aged 15 years or more were more likely (61%) to be classified as overweight or obese when compared with non-Indigenous Australians (48%). The proportion of both Indigenous and non-Indigenous persons, aged 18 years or more and classified as obese, has increased since 1995. Indigenous men and women in each age group were more likely to be classified as obese than non-Indigenous Australians in the same age groupings. Proportions of both Indigenous men and women who were overweight or obese generally increased towards older age groups.

## Risky or high risk alcohol consumption

The age-standardised rates for risky/high risk levels of alcohol consumption for the week preceding the 2001 NHS were similar for both the Indigenous and non-Indigenous populations (12% and 11% respectively).

ABS 1998b, *Information Paper: Census of Population and Housing — Socio-Economic Indexes for Areas, Australia, 1996*, cat. no. 2039.0, ABS, Canberra.

AIHW 2001a, *Australia's Health 2002*, AIHW, Canberra.

Armstrong, T, Bauman, A & Davies, J 2000, *Physical activity patterns of Australian adults. Results of the 1999 National Physical Activity Survey*, Australian Institute of Health and Welfare, Canberra.

Mathers, C, Vos, T & Stevenson, C 1999, *The burden of disease and injury in Australia*, AIHW, Canberra.

Riddolfo, B & Stevenson, C 2001, *The quantification of drug-caused mortality and morbidity in Australia*, 1998, AIHW, Canberra.

WHO (World Health Organisation) 2000, *Obesity: preventing and managing the global epidemic*, WHO Technical Series: No. 894, WHO, Geneva.

WHO 2002, *The World Health Report 2002*, WHO, Geneva.

## EDUCATION AND TRAINING

At the broadest level, education and training can be thought of as the lifetime process of obtaining knowledge, attitudes, skills, and socially valued qualities of character and behaviour. In this sense, education is initiated at birth, developed in schooling and other formal pathways of learning, and continued throughout adult life. Education can occur within a variety of environments, some more formal than others.

Formal learning has traditionally taken place within three major sectors: schools, vocational education and training, and higher education. Typically this is characterised by delivery that is systematic, planned and organised ahead of time, and which usually involves some evaluation of achievement. However, in recent years the boundaries between these sectors have become less distinct. Many other kinds of structured learning can take place outside formal institutions and can continue after a person has completed schooling or gained trade or higher qualifications. For instance, structured learning might be undertaken in the workplace, in order to acquire, develop or upgrade work-related skills.

At the other end of the spectrum is non-formal education, which is intentional, but is delivered in an informal and unstructured way, on an ad hoc basis. It does not necessarily involve any student-teacher relationship nor evaluation of achievement. Non-formal education includes on-the-job training and self-directed learning.

Core measures of educational activity in Australia currently focus on educational resources (the inputs), participation (the process of education), attainment (the outputs) and other outcomes. The structure of this chapter reflects these core measures. It begins with the funding inputs to the different categories of education, then discusses the inputs in the form of government assistance to students, before describing the processes for each category of education, and finally educational attainment.

The chapter contains an article *The cost of training Australia's workers*. It concludes with an article *Indigenous education and training*.

## Government responsibilities in education

State and territory governments have the responsibility for most education and training, including the administration and substantial funding of primary and secondary education, as well as the administration and major funding of vocational education and training (VET).

The Australian (Commonwealth) Government has special responsibilities in education and training for Aboriginal and Torres Strait Islander peoples, migrants, international partnerships in education, and assistance for students. It is also principally responsible for the funding of higher education institutions, and provides supplementary funding for schools and for VET.

The Australian Government provides special grants to the states and territories for areas of particular need. The Government is also involved in promoting national consistency and coherence in the provision of education and training across Australia.

## Expenditure on education

The estimates of government expenditure on education provided in this section accord with national accounting concepts.

The accruals-based estimates in tables 10.1, 10.2, 10.3 and 10.4 reflect transactions in the period in which income is earned or expenses incurred, regardless of whether a cash payment is made.

A conceptual framework, derived from the international standard *A System of National Accounts 1993*, is used for these estimates.

For the purposes of table 10.1, government expenditure on education refers to expenditure on all sectors of education, such as preschool, primary, secondary, university, and technical and further education (TAFE), but excludes expenditure on courses provided by non-educational institutions, such as the vocational training programs of private businesses.

Government operating expenses include items such as employee expenses (e.g. wages and salaries) and current transfer expenses (e.g. living allowances for students). The total operating expenses for all governments increased from \$31,050m in 1998–99 to \$37,546m in 2001–02 (table 10.1). As a percentage of gross domestic product, government operating expenses on education were 5.3% in 2001–02, having remained relatively constant since 1998–99.

Over the four-year period, net acquisition of non-financial assets increased from \$87m in 1998–99 to \$801m in 2001–02. Net acquisition of non-financial assets includes expenditure on new and second-hand fixed assets. Within the context of education, such assets include construction work, and expenditure on equipment and buildings.

Sales of goods and services, which includes items such as student fees and charges made by governments and education institutions in exchange for educational services provided, totalled \$6,181m in 2001–02.

### 10.1 GOVERNMENT EXPENDITURE ON EDUCATION(a)

	Units	1998–99	1999–00	2000–01	2001–02
Operating expenses	\$m	31 050	32 273	34 957	37 546
Net acquisition of non-financial assets	\$m	87	303	471	801
Sales of goods and services	\$m	4 615	5 149	5 526	6 181
Gross domestic product (GDP)	\$m	591 917	628 621	669 307	712 980
Operating expenses as a proportion of GDP	%	5.2	5.1	5.2	5.3

(a) Figures expressed as current prices. Changes between years will include price effects.

Source: *Government Finance Statistics, Education, Australia — Electronic Delivery, 2001–02 (5518.0.55.001)*.

Private expenditure on education (which comprises household final consumption expenditure plus gross fixed capital formation) was \$11,445m in 2001–02. Private expenditure data include items such as school fees and the construction of private school buildings, but exclude items such as school books and uniforms. It is important to note that government expenditure on education and private expenditure on education estimates cannot simply be added together to derive an estimate of total expenditure on education because this will result in some double-counting.

Table 10.2 presents the total government operating expenses on education in 2001–02 by purpose. Primary and secondary education expenses were \$21,283m, comprising 56.7% of these expenses, followed by university education (25.9%), and TAFE (10.4%). Total government operating expenses include depreciation of fixed assets, but do not include capital expenditure.

Table 10.3 shows the components of government operating expenses on education by economic transaction type in 2001–02. Employee expenses accounted for 55.1% of total government operating expenses, with the balance largely in non-employee expenses (23.3%) and current transfer expenses (16.7%).

### 10.2 GOVERNMENT OPERATING EXPENSES ON EDUCATION, By purpose — 2001–02

	Commonwealth	State and local	Multi-jurisdictional(a)	Total sectors	Intra-sector transfers	Total(b)
	\$m	\$m	\$m	\$m	\$m	\$m
Primary and secondary education	5 789	21 092	—	26 883	5 599	21 283
Tertiary education						
University education	4 034	121	9 806	13 961	4 243	9 717
Technical and further education	1 137	3 757	—	4 894	998	3 896
Tertiary education n.e.c.	—	23	—	22	—	23
Total	5 171	3 900	9 806	18 876	5 241	13 635
Preschool, special, and other education	190	1 147	—	1 336	191	1 146
Transportation of students	—	900	—	900	—	900
Other education expenses	551	30	—	580	—	581
<b>Total government operating expenses on education</b>	<b>11 701</b>	<b>27 068</b>	<b>9 806</b>	<b>48 578</b>	<b>11 029</b>	<b>37 546</b>

(a) The multi-jurisdictional sector currently contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units falling into this category are public universities.  
(b) Total equals total sectors minus intra-sector transfers.

Source: ABS data available on request, *Government Finance Statistics*.

### 10.3 GOVERNMENT OPERATING EXPENSES ON EDUCATION, By economic transaction — 2001–02

	Commonwealth	State and local	Multi-jurisdictional(a)	Total sectors	Intra-sector transfers	Total(b)
	\$m	\$m	\$m	\$m	\$m	\$m
Employee expenses	64	15 178	5 462	20 705	—	20 704
Non-employee expenses	244	5 250	3 269	8 764	17	8 746
Depreciation of fixed assets	9	974	697	1 679	—	1 679
Current transfer expenses	11 015	5 521	377	16 912	10 631	6 282
Capital transfer expenses	370	146	—	517	381	134
<b>Total government operating expenses on education</b>	<b>11 701</b>	<b>27 068</b>	<b>9 806</b>	<b>48 578</b>	<b>11 029</b>	<b>37 546</b>

(a) The multi-jurisdictional sector currently contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units falling into this category are public universities.  
(b) Total equals total sectors minus intra-sector transfers.

Source: *Government Finance Statistics, Education, Australia — Electronic Delivery, 2001–02 (5518.0.55.001)*.

Table 10.4 summarises Commonwealth Government grants to the states and territories for education in 2001–02. The major beneficiary of Government grants (both current and capital) was primary and secondary education, receiving 52.4% of the total granted (both current and capital) for education. Universities received 36.4% of the total granted, and 9.4% was directed to TAFE.

#### 10.4 COMMONWEALTH GOVERNMENT GRANTS FOR EDUCATION(a)

	2000–01	2001–02
	\$m	\$m
<b>Current grants to states, territories and universities</b>		
Primary and secondary education	4 852	5 258
Technical and further education	916	997
Universities	3 657	3 844
Other education	107	186
<b>Total</b>	<b>9 532</b>	<b>10 285</b>
<b>Capital grants to states, territories and universities</b>		
Primary and secondary education	315	324
Technical and further education	—	—
Universities	42	33
Other education	1	4
<b>Total</b>	<b>358</b>	<b>362</b>
<b>Total grants to states, territories and universities</b>		
Primary and secondary education	5 167	5 582
Technical and further education	916	997
Universities	3 698	3 877
Other education	108	190
<b>Total</b>	<b>9 889</b>	<b>10 645</b>

(a) Figures expressed in current prices. Changes between years will include price effects.

Source: ABS data available on request, Government Finance Statistics.

### Funding of schools

The primary and secondary education operating expenses of Australian governments totalled \$21,283m in 2001–02. Operating expenses associated with preschool, special, and other education were \$1,146m. State and territory governments also contributed funds to other aspects of schooling such as student transport, totalling \$900m in 2001–02. As shown in table 10.2, preschool, primary, secondary, special school and other education expenses were largely met by state and territory governments.

While primary and secondary education is free in government schools in all Australian states and territories, fees may be charged for the hire of text books and other school equipment (particularly in secondary schools). Voluntary contributions may also be sought from parents.

In addition to funding schools directly, most state and territory governments provide financial assistance to parents (under specified conditions) for educational expenses of school children. Assistance includes scholarships, bursaries, and transport and boarding allowances, many of which are intended to assist low-income families. The Australian Government also provides a number of assistance schemes to facilitate access to education.

### Funding of Vocational Education and Training (VET)

Information supplied by the Australian National Training Authority shows that VET providers in receipt of public funds primarily receive revenue from the state and territory governments (57% or \$2,467m in 2002), with additional funds being provided by the Australian Government (22% or \$966m). The remaining 21% (\$925m) is made up of recurrent revenue.

Recurrent revenue comprises revenues appropriated by the Australian Government and state and territory governments to fund the normally occurring business activities of the sector and specifically exclude funds for capital asset construction, improvement or replacement. It also includes revenues earned by the sector from fees and charges arising from 'fee-for-service' activities (11% in 2002), student fees and charges (4%) and other ordinary operating activities (6%).

Most providers charge students fees for the administration of VET courses, for tuition, for materials or for student amenities. These fees vary according to the type of course and its duration.

### Funding of higher education

Most higher education institutions are funded by the Australian Government under the *Higher Education Funding Act 1988* (Cwlth). In 2001–02 the operating revenue (before abnormals) of these institutions amounted to \$10,202m, 44% of which came from Government grants. Government funding is also provided to higher education institutions through various research programs, mostly on the advice of the Australian Research Council.

In addition to government funding, institutions receive revenue from students who are required to contribute to the cost of their education through the Higher Education Contribution Scheme (HECS), and from other fee-paying students. Higher education fees and charges have increased in importance in recent years. In 2001–02, 17.4% of operating revenue was raised from HECS, while other fees and charges accounted for a further 19.8% of operating revenue. These fees and charges included \$1,163.5m from fee-paying overseas students, representing 58% of other fees and charges — a rise of 23% since 2000–01.

Some institutions rely more heavily than others on fees paid by overseas students. For example, the Central Queensland University, Royal Melbourne Institute of Technology University and the Curtin University of Technology in Western Australia received 35.0%, 24.6% and 23.0% respectively of their revenue from fee-paying overseas students. This is well above the overall national average of 11.4%.

## **Government assistance to students**

Australian Government assistance to students is focused on particular groups through the application of separate programs administered by a number of government departments. These individual programs are briefly described below.

### **Austudy and Youth Allowance**

In 1998, Youth Allowance replaced AUSTUDY (now called Austudy) and a number of other payments for young people under 25 years. Youth Allowance is for full-time students under 25 years and unemployed people under 21 years. Austudy now covers full-time students 25 years and over. Youth Allowance and Austudy are administered by the Australian Government Department of Family and Community Services (FaCS), and delivered by Centrelink.

## **ABSTUDY**

ABSTUDY represents a major component of the Australian Government's commitment, under the National Aboriginal and Torres Strait Islander Education Policy, to encourage Australian Aboriginal and Torres Strait Islander peoples to take full advantage of educational opportunities, to promote equality of education, to be involved in decision making, and to improve their educational outcomes.

The scheme provides financial assistance for eligible Australian Aboriginal and Torres Strait Islander peoples who undertake approved secondary or tertiary education courses by full-time study, by correspondence, or who undertake part-time tertiary study. There is also some assistance available to primary school students aged 14 years or over who live at home.

ABSTUDY is administered by the Australian Government Department of Education, Science and Training (DEST), and delivered by Centrelink.

### **Assistance for isolated children (AIC)**

The AIC scheme helps the families of primary and secondary school students, and tertiary students under 16 years old, who do not have reasonable daily access to an appropriate government school primarily because of their geographic isolation. An 'appropriate school' is a government school which offers the student's level of study or, if the student has special health-related or educational needs, one which provides access to the facilities, programs and/or environment required for those needs.

Apart from the additional Boarding Allowance, all AIC allowances are free from income and assets tests, but applicants must meet the eligibility criteria. AIC is administered by FaCS, and delivered by Centrelink.

## Student Financial Supplement Scheme (SFSS)

The SFSS is a voluntary loan scheme introduced in 1993. It is available to students receiving Youth Allowance, Austudy, ABSTUDY and the Pensioner Education Supplement. Dependent full-time students who are not eligible for Youth Allowance may still access a SFSS loan if parental income is below a certain threshold, which was \$61,200 for calendar year 2002.

Loan repayments do not commence until five years after the loan was taken out and only when income reaches a certain level. In 2002–03 the income level for loan repayment was \$34,494.

The Government announced on 24 April 2003 that no loans will be issued under the Scheme from 1 January 2004.

## Preschool students

Preschool generally refers to education that is provided for children in the year prior to the first year of full-time primary school, is largely sessional, and operates only during school terms for children three years of age to school starting age. Preschools may be operated by government, community organisations or the private sector. Preschool programs may also be provided in long-day child care centres. Data about preschools are from the Australian Bureau of Statistics Child Care Survey which is conducted every three years. There is some undercounting of the number of children attending preschool in this survey. Reasons for this include differences in terminology and starting ages of preschool

between states and territories, and the fact that children who are attending a preschool program within a child care centre may not be separately identified in the survey.

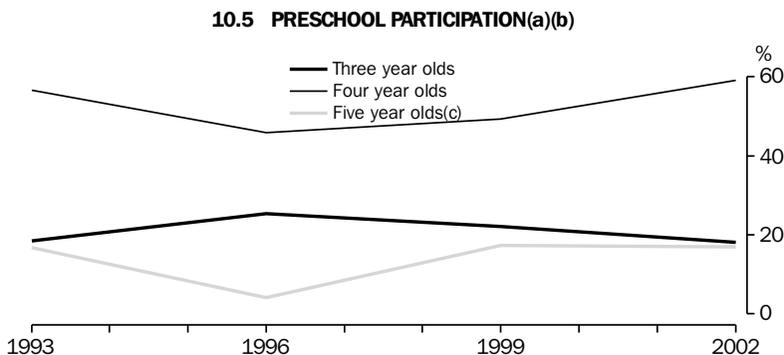
Data on Indigenous preschool students are from the National Indigenous Preschool Census (NIPC) which is conducted annually by Data Analysis Australia on behalf of DEST. The purpose of the NIPC is to allocate Australian Government funding to preschools for Indigenous students. The two data sources are not directly comparable due to differences in scope and collection methodology.

## Attendance

In 2002, some 239,100 children attended preschool, with four year olds representing 62% of all preschool students. This compares with 236,900 attendees in 1993 when four year olds represented 61% of preschool students.

There is no national policy on the provision of preschool education, the responsibility for this resting with individual states and territories. The age at which children may attend preschool varies, reflecting the different school commencement ages in each jurisdiction. The proportion of three year olds attending preschool increased from 18% in 1993 to 25% in 1996 but by 2002 had decreased to 18% (graph 10.5).

There was some fluctuation in the proportion of four year olds attending preschool between 1993 and 2002, with a high of 59% in 2002 and a low of 46% in 1996 (graph 10.5).



(a) The survey was conducted in June 1993, March 1996, June 1999 and June 2002. (b) Shown as a proportion of the relevant age group. (c) Excludes five year olds attending school.

Source: *Child Care, Australia (4402.0)*.

In 2002, 17% of five year olds attended preschool (reflecting the entry of the majority of five year olds into primary school). This proportion was fairly steady for the 1993, 1999 and 2002 Child Care Surveys which were all conducted in June. The 1996 Child Care Survey was conducted in March and this may account for the lower number of five year olds and the higher number of three year olds reported in that year.

The changing focus of long day care to include an educational component may account for some of the changes in the participation of four year olds at preschool. While the proportion of four year olds attending preschool has fluctuated somewhat between 1993 and 2002, the proportion attending long-day child care centres has increased steadily (from 12% in 1993 to 25% in 2002) (table 10.6).

#### 10.6 PARTICIPATION OF FOUR YEAR OLDS

Type of care	Units	June 1993	March 1996	June 1999	June 2002
Preschool	%	56.6	45.9	49.2	59.0
Long day care	%	11.8	14.0	21.7	25.1
<b>Total</b>	<b>'000</b>	<b>174.8</b>	<b>154.4</b>	<b>186.1</b>	<b>195.8</b>

Source: *Child Care, Australia (4402.0)*.

### Indigenous preschool students

In 2002, a total of 8,731 Indigenous children were enrolled in government and non-government preschools Australia-wide, representing 4% of total preschool enrolments, as counted by the NIPC. Of these enrolments 31% were in New South Wales. Table 10.7 contains time series data for Indigenous preschool enrolments from 2000 to 2002. Between 2001 and 2002, the number of Indigenous children enrolled in preschools increased across all states and territories, excluding Tasmania where enrolments declined by 8%. A change in the definition of a preschool in Queensland and Western Australia in 2001 has made the estimates for these two states no longer comparable to earlier estimates.

The 2002 NIPC also shows that 60% of Indigenous preschool students were aged four, 25% were aged three and the remaining 15% were aged five or more.

### 10.7 INDIGENOUS PRESCHOOL ENROLMENTS

	2000	2001	2002
New South Wales	2 386	2 437	2 676
Victoria	486	519	530
Queensland(a)	3 447	793	863
South Australia	906	952	1 035
Western Australia(a)	2 957	1 149	1 875
Tasmania	311	271	249
Northern Territory	1 266	1 235	1 420
Australian Capital Territory	63	78	83

(a) There were changes in definition of preschool in Qld and WA in 2001, resulting in data from these two states no longer being comparable to previous years.

Source: *Department of Education, Science and Training, 'National Indigenous Preschool Census 2002'*.

## Primary and secondary education

### School attendance

School attendance is compulsory throughout Australia between the ages of 6–15 years (16 years in South Australia and Tasmania). Most children start primary school at five years of age.

Each state and territory has developed its own approach to schooling, particularly in relation to the structure of Pre-year 1 education and the transition from primary to secondary schooling. Primary schooling in most states and territories begins with a preparatory or kindergarten year, followed by six or seven primary grades, then a further five or six years to complete a full secondary course of study. In total, states and territories offer 13 years of schooling (except for Queensland, which offers 12 years and in 2003 is trialling Pre-year 1 in a small number of schools).

Commencing in 2002, a half cohort (a full cohort approximates the number of persons turning five years of age by 30 June in the year preceding Year 1 schooling) of students in Western Australia have begun attending a Pre-year 1 level of schooling full-time. The year is called Pre-primary in Western Australia but parallels Kindergarten, Transition, etc. in other states and is now within the scope of the schools collection.

While the final two years of secondary schooling generally fall outside the compulsory stage of education, in 2002 some 88% of full-time secondary students remained at school until Year 11 and 75% remained until Year 12.

### **School organisation and operation**

Primary schooling provides a general elementary program lasting for seven or eight years until Year 6 or Year 7. Students enter secondary schools at Year 7 in some state (or territory) systems and at Year 8 in others. Primary and secondary schools are usually separate institutions, but in some areas there are central or area schools which provide both levels of schooling. In Tasmania and the Australian Capital Territory, the final two years of government schooling are undertaken at separate secondary colleges.

Generally, schools in Australia have a considerable degree of autonomy. Most states and territories have established regional administrations which are responsible for matters such as planning school buildings and deploying staff, while a central curriculum unit provides general guidelines on course planning. Typically, individual schools determine teaching and learning approaches within the given guidelines and offer various course options. The assessment of students varies across states and territories, some having a completely school-based assessment system, while others combine school-based assessment with external examinations.

### **Primary schooling**

In early primary education, the main emphasis is on the development of basic language and literacy skills, simple arithmetic, moral and social education, health training and some creative activities.

In the upper primary years the focus is on development of the skills learned in earlier years. English, mathematics, social studies, science, music, art and craft, physical education and health are studied. There are also optional subjects such as religious instruction, foreign and community languages, and music.

### **Secondary schooling**

In some systems the first one or two years of secondary school consist of a general program which is undertaken by all students, although

there may be some electives. In later years, a basic core of subjects is retained, with students able to select additional optional subjects. In other systems, students select options from the beginning of secondary school.

In senior secondary years, a wider range of options is available in the larger schools and there is an increasing trend towards encouraging individual schools to develop courses suited to the needs and interests of their students, subject to accreditation and moderation procedures. There is also an increasing emphasis on the incorporation of vocational programs into the senior secondary curriculum. School students may obtain certificates and undertake New Apprenticeships in VET as part of their senior school study and undertake some parts of their programs in the workplace.

Students reaching the minimum school leaving age may leave school and seek employment, or enrol in a vocational course with a VET institution, such as a TAFE institution or a private business college. For many VET courses, completion of Year 10 of secondary school is a minimum entry requirement. For those continuing to the end of secondary school (Year 12), opportunities for further study are available at higher education institutions, VET institutions and other educational institutions. For students continuing to higher education, eligibility to undertake university courses is almost always based on completion of a senior secondary school certificate.

### **Other schooling arrangements**

Children may be exempted from the requirement of compulsory attendance at a school if they live too far from a school or have a disability. These children receive tuition through a variety of educational delivery mechanisms, including distance education, Schools of the Air, and use of computer and facsimile technologies.

Children of some Indigenous groups in remote areas of the Northern Territory, who live in small decentralised communities, receive schooling mainly in Homeland Learning Centres or Catholic Indigenous schools. They are taught by Indigenous teaching assistants supported by visiting teachers from established schools.

Boarding facilities are available at some non-government schools, mainly in the larger towns and cities. A small number of government schools, in particular those catering for groups such as Indigenous people, have residential hostels located close by.

Children may receive tuition at home, but they must have applied to their state or territory Department of Education for permission. They must be enrolled as a student at a day school and be available when required for assessment against the regular school year curriculum.

Special education is provided by government and non-government authorities in special classes or units in regular schools, by withdrawal from regular classes for periods of intensive assistance by special staff, or in specialist schools. In all states and territories, and particularly in New South Wales, Queensland and Victoria, parents have formed voluntary organisations to establish additional schools catering for their children's special needs. The Australian Government

provides funds to states and territories, non-government authorities and community groups to assist in the provision of services and upgrading of special education facilities.

### Schools, students, and teaching staff

There were 9,632 schools operating in Australia in August 2002, 72% of which were government schools. There were 152,982 full-time, plus full-time equivalent (FTE) of part-time, teaching staff employed in government schools (68% of all teachers), and a further 72,371 employed in non-government schools (table 10.8).

In 2002, 3.3 million students (FTE) were attending primary and secondary schools, comprising 2.3 million (68%) in government schools and 1.0 million (32%) in non-government schools. Between 1997 and 2002, the number of students (FTE) attending government schools increased by 28,100 (1.3%) while the number of students attending non-government schools increased by 103,900 (11.0%) (table 10.9).

#### 10.8 SCHOOLS, STUDENTS AND TEACHING STAFF — August 2002

	Government schools %	Non-government schools			All schools '000
		Catholic %	Independent %	Total %	
Schools	72.4	17.6	10.0	27.6	9.6
Students (FTE)(a)					
Males	68.9	19.5	11.6	31.1	1 688.1
Females	67.9	20.1	11.9	32.1	1 626.8
Persons	68.4	19.8	11.7	31.6	3 314.9
Teaching staff (FTE)(b)					
Males	66.3	17.8	15.9	33.7	73.7
Females	68.7	18.9	12.5	31.3	151.6
Persons	67.9	18.5	13.6	32.1	225.4

(a) Full-time students plus full-time equivalent of part-time students. (b) Full-time teaching staff plus full-time equivalent of part-time teaching staff.

Source: *Schools, Australia, 2002* (4221.0).

### 10.9 STUDENTS(a), By category of school — August(b)

	1997	1998	1999	2000	2001	2002
	'000	'000	'000	'000	'000	'000
Government schools						
Males	1 145.4	1 149.2	1 153.1	1 159.7	1 156.9	1 163.4
Females	1 095.3	1 100.5	1 105.9	1 105.6	1 103.0	1 105.4
Persons	2 240.7	2 249.7	2 259.0	2 260.3	2 259.9	2 268.8
Non-government schools						
Males	474.2	482.8	492.2	501.7	512.1	524.7
Females	468.0	477.2	487.8	498.4	508.9	521.4
Persons	942.3	960.0	979.9	1 000.1	1 021.1	1 046.2
All schools						
Males	1 619.7	1 632.0	1 645.3	1 656.5	1 669.0	1 688.1
Females	1 563.3	1 577.7	1 593.7	1 604.0	1 611.9	1 626.8
Persons	<b>3 183.0</b>	<b>3 209.7</b>	<b>3 238.9</b>	<b>3 260.5</b>	<b>3 280.9</b>	<b>3 314.9</b>

(a) Full-time equivalent students. (b) School census date.

Source: *Schools, Australia (4221.0)*.

Table 10.10 shows the percentage of school students (FTE) in 2002 by level of education. Among primary school students, 72.0% attended government schools and 28.0% attended non-government schools. For the secondary school students, 63.4% attended government

schools and 36.6% attended non-government schools. Approximately one-fifth of all school students attended Catholic schools (18.9% of primary school students and 21.1% of secondary school students).

### 10.10 STUDENTS(a), By level/year of education — August 2002

	Government schools %	Non-government schools			All schools		
		Catholic %	Independent %	Total %	Males %	Females %	Persons '000
Primary							
Pre-year 1(b)	70.7	20.3	9.0	29.3	51.7	48.3	204.3
Year 1	72.0	19.4	8.5	28.0	51.3	48.7	265.5
Year 2	72.4	19.2	8.4	27.6	51.3	48.7	268.6
Year 3	72.3	19.2	8.5	27.7	51.2	48.8	267.9
Year 4	72.2	19.1	8.7	27.8	51.1	48.9	269.0
Year 5	71.8	18.9	9.3	28.2	51.2	48.8	267.8
Year 6	71.3	19.0	9.7	28.7	51.1	48.9	269.0
Year 7 (Qld, SA, WA, NT)	73.1	15.7	11.2	26.9	51.3	48.7	103.7
Ungraded	85.9	2.1	12.0	14.1	65.9	34.1	16.9
Total	72.0	18.9	9.0	28.0	51.4	48.6	1 932.6
Secondary							
Year 7 (NSW, Vic., Tas., ACT)	61.8	23.7	14.5	38.2	51.2	48.8	161.4
Year 8	63.2	21.5	15.4	36.8	51.1	48.9	263.2
Year 9	63.8	21.1	15.2	36.2	50.9	49.1	257.4
Year 10	63.6	20.9	15.4	36.4	50.8	49.2	251.2
Year 11	63.3	20.4	16.3	36.8	49.2	50.8	228.3
Year 12	61.8	21.3	16.9	38.2	47.3	52.7	199.8
Ungraded	88.1	3.5	8.4	11.9	60.2	39.8	21.2
Total	63.4	21.1	15.5	36.6	50.3	49.7	1 382.3
<b>Total</b>	<b>68.4</b>	<b>19.8</b>	<b>11.7</b>	<b>31.6</b>	<b>50.9</b>	<b>49.1</b>	<b>3 314.9</b>

(a) Full-time equivalent students. (b) Pre-year 1 does not include Qld.

Source: *Schools, Australia, 2002 (4221.0)*.

Graph 10.11 shows student/teacher ratios by category of school by level, in 1998 and 2002. These ratios represent the number of students (FTE) divided by teaching (FTE) staff. In 1998, non-government schools had a slightly lower student/teacher ratio than government schools. In 2002, the ratios for both school systems were reduced, but non-government schools were still lower than government schools (14.5 and 14.8 students per teacher, respectively). The greatest change in the student/teacher ratio was for Catholic primary schools, where the ratio declined from 19.9 students per teacher in 1998 to 18.5 students per teacher in 2002.

### Apparent retention rates

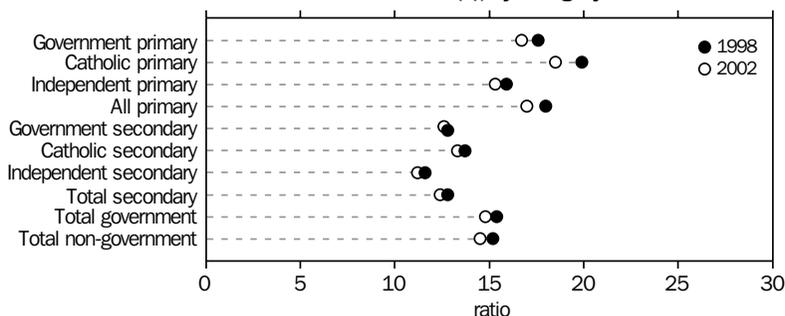
Apparent retention rates are important measures of the performance of education systems and related government policies. The apparent retention rate is an estimate of the percentage of

students of a given cohort who continued to a particular level or year of education. For instance, in 2002 the apparent retention rate of full-time secondary school students from Year 7/8 to Year 12 was 75%. As in previous years, the 2002 apparent retention rate for female students remains higher than the corresponding rate for male students.

Table 10.12 shows apparent retention rates from Year 10 to Year 12 rather than from the commencement of secondary schooling, where attendance due to age requirements is generally compulsory. Retention rates have been calculated for full-time students, and for total students, who continued to Year 12 from their respective cohort at Year 10.

The apparent retention rate in 2002 of full-time students from Year 10 to Year 12 was 2.5 percentage points higher than the 1997 rate.

**10.11 STUDENTS TO TEACHING STAFF(a), By category of school**



(a) Number of students (FTE) divided by the number of teaching (FTE) staff.

Note: This graph should not be used as a measure of class size.

Source: *Schools, Australia (4221.0)*.

**10.12 APPARENT RETENTION RATES, From Year 10 to Year 12**

	1997	1998	1999	2000	2001	2002
	%	%	%	%	%	%
Full-time students						
Males	69.3	68.9	68.9	69.0	70.8	72.4
Females	79.9	79.4	79.9	80.0	80.1	81.7
Persons	74.5	74.1	74.4	74.4	75.4	77.0
Total students(a)						
Males	72.4	71.8	71.9	72.1	73.9	75.7
Females	84.6	83.6	84.5	84.7	84.9	86.9
Persons	78.4	77.6	78.1	78.3	79.4	81.3

(a) Includes part-time students.

Source: *Schools, Australia (4221.0)*.

Care should be taken in interpreting apparent retention rates since various factors affecting their calculation have not been taken into account. These include students who repeat a year of education, migration, and changing characteristics of the school population, such as the growing number of full-fee paying overseas students.

## Vocational Education and Training (VET)

### Institutions

Most VET in Australia is provided in government-administered colleges. In some states and territories these are referred to as TAFE colleges or institutes. To a lesser extent, VET may also be provided by Institutes of Technology, some higher education institutions, schools and agricultural colleges, adult and community education authorities, private providers of education (such as business colleges) and employers. VET institutions offer programs for a wide range of purposes, ranging from recreation and leisure, through basic employment and educational preparation, to trades training, and para-professional and professional levels.

In 2002 there were 85 TAFE and other publicly funded institutions with 1,461 provider locations delivering VET training. A further 894 community education providers and 5,402 other providers (mainly private providers) delivering VET were at least partly publicly funded.

### Students and courses

Table 10.13 shows participation in the publicly funded VET system. In 2002 there were 60,500 more female than male VET clients. Just over 53% of VET clients aged under 30 years were male. Females, however, were in the majority (55%) for VET clients aged 30 years or more.

VET programs are described according to Field of Education in the Australian Standard Classification of Education. The classification uses 12 categories to identify the fields of education on the basis of similar emphasis or subject matter orientation. Table 10.14 shows the number of course enrolments in each field of education in 2002. Since clients may be enrolled in more than one VET course the number of course enrolments is

greater than the total number of clients — there were 2.3 million course enrolments in 2002 compared with 2.0 million clients.

**10.13 VET(a) CLIENTS(b), Vocational and preparatory courses(c) — 2002**

Age group (years)	Males '000	Females '000	Persons(d) '000
Under 16	21.2	19.7	40.9
16	32.0	28.4	61.3
17	41.7	33.9	75.7
18	56.7	47.1	103.9
19	55.3	43.7	99.1
20–24	162.5	136.5	299.3
25–29	104.7	104.3	209.4
30–39	183.1	198.9	382.6
40–49	144.2	188.0	332.8
50–59	85.4	109.4	195.3
60–64	17.5	23.3	40.9
65 and over	18.6	30.1	48.9
Not stated	38.1	59.0	103.1
<b>Total clients</b>	<b>961.0</b>	<b>1 022.4</b>	<b>1 993.1</b>

(a) Includes all VET delivery by TAFE and other government providers, registered community providers and publicly funded delivery by private providers. Fee-for-service VET delivery by private providers has been excluded. Schools data submitted by states and territories has been excluded. (b) A client is any individual participating in a specific enrolment or training contract with a specific organisation at any time in 2002. (c) Courses leading to a vocational award. (d) Includes sex not stated.

Source: National Centre for Vocational Education Research, data available on request, National Vocational Education and Training Collection.

If Mixed field programmes are excluded, then Management and commerce, Engineering and related technologies, and Society and culture courses accounted for 55% of the remaining 2,017,700 VET enrolments in 2002.

Males made up a clear majority of enrolments in the fields of education of Architecture and building (86%), Engineering and related technologies (84%), Agriculture, environmental and related studies (74%) and Information technology (62%). Females were in the majority in Society and culture (72%), Creative arts (69%), Management and commerce (64%), Education (59%), Food, hospitality and personal services (59%), Health (58%) and Natural and physical sciences (56%) (table 10.14).

### 10.14 VET(a) COURSE ENROLMENTS, Vocational and preparatory courses(b) — 2002

Field of education	Males '000	Females '000	Persons(c) '000
Natural and physical sciences	9.9	12.8	22.7
Information technology	70.3	42.4	113.0
Engineering and related technologies	293.4	54.4	348.3
Architecture and building	98.1	15.4	113.6
Agriculture, environmental and related studies	89.3	30.4	119.9
Health	56.3	79.6	136.9
Education	34.8	50.7	85.9
Management and commerce	169.8	306.8	478.4
Society and culture	77.4	200.3	278.8
Creative arts	40.9	94.2	135.8
Food, hospitality and personal services	75.3	108.6	184.5
Mixed field programmes	116.2	142.1	258.9
<b>Total enrolments(a)</b>	<b>1 131.7</b>	<b>1 137.7</b>	<b>2 276.6</b>

(a) Includes all VET delivery by TAFE and other government providers, registered community providers, and publicly funded delivery by private providers. Fee-for-service VET delivery by private providers has been excluded. Schools data submitted by states and territories have been excluded. (b) Courses leading to a vocational award. (c) Includes sex not stated.

Source: National Centre for Vocational Education Research, data available on request, National Vocational Education and Training Collection.

### Apprenticeships and traineeships

Some 35% of all apprentices and trainees at 31 December 2002 were in the broad occupational group Tradespersons and related workers. In this group, Construction and Automotive trades accounted for 23% and 17%, respectively, of the group total (table 10.15).

Most (87%) of the apprentices and trainees in the broad occupational group Tradespersons and related workers were male. The only field of trade in this occupational group with a female majority was Hairdressers where 92% were females.

### 10.15 APPRENTICES AND TRAINEES, In training — 31 December 2002

Major occupation group(a)	Males '000	Females '000	Persons '000	Total %
Managers and administrators	2.7	2.9	5.5	1.5
Professionals	1.0	1.5	2.5	0.7
Associate professionals	9.7	11.8	21.4	5.7
Tradespersons and related workers				
Mechanical and fabrication engineering	15.2	0.3	15.5	4.1
Automotive	22.2	0.3	22.5	6.0
Electrical and electronic	16.6	0.3	16.9	4.5
Construction	30.4	0.3	30.7	8.2
Food	14.5	4.7	19.2	5.2
Skilled agricultural and horticultural workers	5.4	0.8	6.2	1.6
Hairdressers	0.9	9.6	10.4	2.8
Tradespersons and related workers n.e.c.	0.4	0.1	0.5	0.1
Other	9.1	1.2	10.3	2.8
Total	114.6	17.6	132.2	35.4
Advanced clerical and service workers	2.4	8.4	10.7	2.9
Intermediate clerical, sales and service workers	32.7	69.8	102.5	27.5
Intermediate production and transport workers	41.9	5.5	47.4	12.7
Elementary clerical, sales and service workers	9.9	8.3	18.2	4.9
Labourers and related workers	23.5	9.2	32.7	8.8
<b>Total</b>	<b>238.4</b>	<b>135.0</b>	<b>373.1</b>	<b>100.0</b>

(a) Major groups are classified according to the Australian Standard Classification of Occupations.

Source: National Centre for Vocational Education Research, data available on request, National Vocational Education and Training Collection.

## Staff

Table 10.16 shows the number of teachers working in VET institutions in 2001–02. Of all VET teachers 53% were employed part-time. The majority of full-time VET teachers (63%) were male. In contrast, 63% of part-time VET teachers were female.

### 10.16 VET TEACHING STAFF — 2001–02(a)

	Full-time staff(b)	Part-time staff	All teaching staff
	'000	'000	'000
Males	8.2	5.2	13.4
Females	4.4	9.0	13.4
<b>Persons</b>	<b>12.6</b>	<b>14.2</b>	<b>26.8</b>

(a) Average over the financial year. (b) Full-time refers to persons working 35 hours or more in the survey week.

Source: *Labour Force, Australia, Detailed — Electronic Delivery, April 2003* (6291.0.55.001).

## The cost of training Australia's workers

### Introduction

This article provides an insight into the time spent and costs involved in developing and delivering work-related training in Australia. Information collected from the 2001–02 Training Expenditure and Practices Survey (TEPS), and the 2001 Survey of Education, Training and Information Technology (SETIT), have been drawn together to compare the cost of structured training from both the perspective of the employer and that of the employee. The article also looks at access to training from both of these perspectives. This article updates a similar article published in the Australian Bureau of Statistics publication, *Australian Economic Indicators, May 1995* (1350.0).

### Background

The TEPS, a survey of employers, was most recently conducted in respect of the financial year ending June 2002. The 2001–02 TEPS obtained information from approximately 5,900 employers on their structured and unstructured training practices, and their expenditure on

structured training. In the TEPS, structured training refers to all training activities which have a specified content or predetermined plan designed to develop employment-related skills and competencies. It consists of instruction, or a combination of instruction and monitored practical work. Unstructured training includes all training activities which do not have a specified content or predetermined plan, including on-the-job training.

Between April and August 2001, the SETIT, a household survey, collected details from around 24,400 persons aged 15–64 years, on:

- socio-demographic and employment characteristics
- educational attainment
- participation in education and training over the previous 12 months
- work-related training courses completed in the previous 12 months
- use of information technology.

Work-related training courses are those that have a structured format, with an orderly or methodical means of presenting or providing the training during a set period of time. Work-related training refers to activities that are undertaken primarily to obtain, maintain, or improve employment-related skills or competencies.<sup>1</sup>

## The employer perspective

### Training expenditure by employers

Gross direct training expenditure comprises the wages and salaries of persons employed as dedicated trainers, any fees paid to external training providers and other costs associated with the provision of structured training, such as the costs of training facilities and equipment, and travel, accommodation and meals for employees attending training. During 2001–02 gross direct expenditure on structured training by Australian employers totalled \$4,018m, with the wages and salaries of dedicated trainers contributing \$1,037m (or 26%) of this figure. The costs of providing training are offset to some extent by the receipt of subsidies and grants to be utilised for training purposes, and by payments received

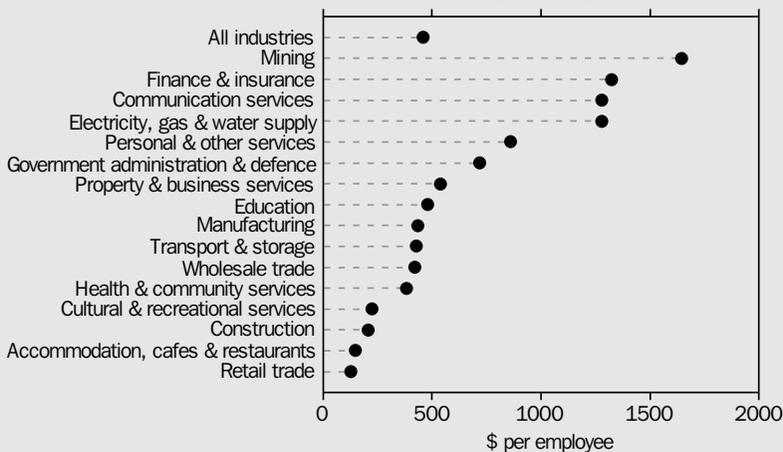
from external attendees of internal training courses. These receipts totalled \$366m in 2001–02, resulting in net direct expenditure on structured training of \$3,653m.

Net direct expenditure by employers on structured training to their employees in the same period was an average of \$458 per employee. This level of expenditure varied between industries. Mining had the highest average expenditure on structured training (\$1,643 per employee), while Retail trade had the lowest (\$127 per employee) (graph 10.17).

### Indirect expenditure on training

Employers also bear the indirect wage and salary cost for the time during which their employees receive training. The 2001–02 TEPS did not collect data on the indirect cost of employee participation in training, but comparable estimates are available as unpublished data from the 2001 SETIT. In the 12 months prior to the survey, employees spent almost 122.9 million hours in training courses, at a total wage and salary cost to employers of approximately \$2,634.1m.

**10.17 AVERAGE TRAINING EXPENDITURE, By industry — 2001–02**



Source: *Employer Training Expenditure and Practices, Australia, 2001–02* (6362.0).

## Employer support for training

Employers may contribute directly to the cost of structured training in a variety of ways including: paying employees' wages and salaries while they attend training, paying employees' training fees, paying for employees' training materials and paying for employees' travel/accommodation expenses associated with training.

The 2001–02 TEPS collected information from employers about the different ways they provided support for their employees' structured training. Over 89% of all employers that provided structured training, paid for their employees' wages and salaries while they attended training. More than three-quarters of employers (77%) paid their employees' training fees, and half paid for employees' training materials. Larger employers more frequently provided support for structured training than did smaller employers. For example, 97% of employers with 100 or more employees paid for employees' wages and salaries while attending training, compared to 34% of employers with less than 20 employees.

## The worker perspective

Results from the 2001 SETIT show that 37% (4,781,000 people) of the Australian population aged 15–64 years had completed at least one work-related training course in the 12 months prior to the survey. Some 7% of the population had completed four or more training courses over this period.

In the SETIT, wage or salary earners are people who worked for an employer for wages or salary in their main job during the reference week. In all, 8,261,600 work-related training courses (84% of all work-related training courses) were completed by wage or salary earners in Australia in 2001. For 89% of training courses completed by wage or salary earners, participants considered the skills gained from the training course to be transferable, that is, they could be used in a similar job with another employer.

## Support for training courses and study

Almost three-quarters of work-related training courses were undertaken internally. Of the 27% of courses that were completed externally, 74% were completed with financial support. Public sector wage or salary earners were more likely to have received financial support to attend external training courses (78%) compared to the private sector (73%). Public sector wage or salary

earners were also more likely to have completed internal training courses than private sector wage or salary earners (80% and 69% respectively) (table 10.18).

Full-time wage or salary earners completed 6,125,800 training courses in 2001, some 74% of all training courses completed. Of the courses completed by wage or salary earners, the majority (72%) were undertaken internally. By comparison, 76% of courses completed by part-time wage or salary workers were undertaken internally (table 10.19).

### 10.18 TRAINING COURSES COMPLETED(a), By employment sector(b) — 2001

	Public(c) '000	Private '000	Not deter- mined '000	Total '000
Internal training course	2 291.1	3 572.2	170.1	6 033.3
External training course				
Received financial support	435.6	1 143.7	62.0	1 641.4
Did not receive financial support	119.4	432.9	34.5	586.9
<b>Total</b>	<b>555.0</b>	<b>1 576.6</b>	<b>96.5</b>	<b>2 228.3</b>
<b>Total</b>	<b>2 846.1</b>	<b>5 148.9</b>	<b>266.6</b>	<b>8 261.6</b>

(a) Wage and salary earners. (b) At time of training course.  
(c) Includes Defence Forces.

Source: ABS data available on request, Survey of Education, Training and Information Technology, 2001.

### 10.19 TRAINING COURSES COMPLETED(a), By employment status(b) — 2001

	Working full-time '000	Working part-time '000	Total(c) '000
Internal training course	4 427.9	1 462.0	6 033.3
External training course			
Received financial support	1 322.7	272.8	1 641.4
Did not receive financial support	375.2	181.5	586.9
<b>Total</b>	<b>1 697.9</b>	<b>454.3</b>	<b>2 228.3</b>
<b>Total</b>	<b>6 125.8</b>	<b>1 916.3</b>	<b>8 261.6</b>

(a) Wage and salary earners. (b) At time of training course.  
(c) Includes courses where it could not be determined if the participant was working full-time or part-time.

Source: ABS data available on request, Survey of Education, Training and Information Technology, 2001.

## 10.20 TRAINING COURSES COMPLETED(a), By field of training(b) — 2001

	Total training hours		
	Males '000	Females '000	Persons '000
Management and professional	24 156.4	20 653.2	44 809.6
Technical and para-professional	12 438.5	8 249.6	20 688.1
Trade/craft	11 861.3	3 834.0	15 695.3
Clerical or office	1 157.7	3 761.7	4 919.4
Sales and personal service	3 687.8	4 679.0	8 366.8
Transport, plant and machinery operation	4 919.2	333.7	5 252.9
Labouring and related training	1 340.2	498.5	1 838.7
Induction	4 797.7	3 844.4	8 642.1
Supervision	2 351.2	1 324.3	3 675.4
Computing skills	7 745.1	6 394.3	14 139.3
Health and safety	8 285.2	5 747.2	14 032.3
Other(c)	290.1	1 099.7	1 389.8
<b>Total(d)</b>	<b>83 030.3</b>	<b>60 419.5</b>	<b>143 449.8</b>

(a) Wage and salary earners. (b) This table relates to the number of courses completed not the number of persons. Estimates relate to a maximum of four training courses. Therefore, a person may contribute more than once to a given category and/or to more than one category. It relates to wage or salary earners at the time of training only. (c) Includes courses in the fields of English language, Literacy, Numeracy, and Music and arts. (d) Includes cases where field of training course could not be determined.

Source: ABS data available on request, Survey of Education, Training and Information Technology, 2001.

The average duration of work-related training courses completed by wage and salary earners was 17 hours in 2001 (table 10.21). For courses undertaken by wage and salary earners in the public sector, the average number of training hours per course was 19 hours, compared to an average length of 16 hours for courses undertaken by wage and salary earners in the private sector.

### Access to training

#### Training provision

The TEPS gives an insight into the reasons why Australian employers have undertaken to provide training for their employees. Employers were able to nominate more than one reason for providing training. Of employers who provided structured training to employees in the financial year ended June 2002, 55% reported maintaining professional status and/or meeting industry standards as the main reason for providing structured training. Staff development/ advancement and improving the quality of goods/services provided were also important reasons (54% and 53% of employers, respectively).

## 10.21 TRAINING COURSES COMPLETED(a), By average training hours per course(b) — 2001

Industry of employer(c)	hours
Agriculture, forestry and fishing	16.9
Mining	22.5
Manufacturing	20.4
Electricity, gas and water supply	16.6
Construction	15.4
Wholesale trade	16.5
Retail trade	14.2
Accommodation, cafes and restaurants	17.8
Transport and storage	19.9
Communication services	19.8
Finance and insurance	15.8
Property and business services	16.9
Government administration and defence	24.8
Education	13.2
Health and community services	13.8
Cultural and recreational services	16.3
Personal and other services	26.7
<b>Total(d)</b>	<b>17.4</b>

(a) Wage and salary earners. (b) This table relates to the number of courses completed not the number of persons. Estimates relate to a maximum of four training courses. Therefore, a person may contribute more than once to a given category and/or to more than one category. It relates to wage or salary earners at the time of training only. (c) Main period employer. (d) Includes cases where industry of main period employer could not be determined.

Source: ABS data available on request, Survey of Education, Training and Information Technology, 2001.

The reasons for employers providing training varied between industries. The Electricity, gas and water supply industry most frequently reported legislative, regulatory, or licensing requirements as a reason for providing structured training (77%), whereas this reason was least reported by the Wholesale trade industry (20%). Employers in the Government administration and defence industry most frequently cited staff development/advancement as a reason for providing structured training (89%), compared with 36% of employers in the Construction industry (table 10.22).

### Barriers to training

The 2001 SETIT further reveals that there were 2,931,600 people aged 15–64 years, who no longer attended school but wanted to undertake a work-related training course or courses in the previous 12 months. Of these people the main reason they did not undertake training was ‘Too

much work’ (18%). Other main reasons were ‘No time’ (17%), ‘Financial reasons’ (14%), and ‘Lack of employer support’ (12%).

Males were more likely than females to list ‘Too much work’ as the main reason for not undertaking further work-related training courses (23% compared to 14%). Females were more likely than males to cite ‘Caring for family members’ as the main reason for not undertaking such training courses (12% compared to 1%).

Respondents in the 2001 SETIT who indicated that they wished to complete more training were also able to list all of the reasons that they did not undertake more training courses in the previous 12 months as well as the main reason. Again, the most common responses were ‘Too much work’ (17%), ‘No time’ (17%), ‘Financial reasons’ (14%) and ‘Lack of employer support’ (10%).

### 10.22 EMPLOYERS THAT PROVIDED STRUCTURED TRAINING, By industry — 2001–02

	Reasons why structured training was provided(a)							Number of employers '000
	Legislative, regulatory or licensing requirements %	Maintain professional standards and/or meet industry standards %	Improve quality of goods and services provided %	Respond to new technology %	Develop and maintain a flexible and responsive work force %	Staff development and advancement %	Other %	
Mining	60.9	65.3	*43.3	*23.8	*36.9	*49.1	*21.2	1.0
Manufacturing	30.9	46.6	50.8	32.5	49.6	47.0	43.3	20.4
Electricity, gas & water supply	76.9	69.5	66.5	49.7	69.6	70.2	39.3	0.6
Construction	56.4	43.9	32.4	*19.1	*21.9	36.4	*14.4	42.1
Wholesale trade	19.5	42.6	64.8	41.9	54.6	59.0	21.6	18.3
Retail trade	31.2	45.3	61.3	32.3	48.0	42.6	29.0	37.7
Accommodation, cafes & restaurants	56.1	37.9	41.9	*23.8	*14.1	52.5	*32.2	12.7
Transport & storage	*59.9	*58.7	*57.6	*46.0	*38.0	*45.4	**28.6	*5.3
Communications services	*51.0	*76.4	*68.7	*61.4	*58.0	**33.5	**33.0	*1.7
Finance & insurance	59.0	64.3	39.6	*30.7	*19.8	61.7	*8.0	11.3
Property & business services	29.4	63.8	60.0	43.9	27.2	57.8	23.2	61.7
Government administration & defence	61.1	63.3	81.4	66.6	77.7	89.3	36.5	1.4
Education	*28.1	83.5	66.3	51.1	*41.7	80.7	*16.0	8.2
Health & community services	34.3	72.9	61.5	61.8	41.3	72.4	*16.6	28.7
Cultural & recreational services	**26.1	*38.2	*42.7	*20.3	*31.9	*40.9	*25.1	7.4
Personal & other services	44.4	55.4	46.8	*23.2	*35.1	65.4	*24.7	17.1
<b>All industries</b>	<b>38.1</b>	<b>54.7</b>	<b>53.1</b>	<b>36.4</b>	<b>35.1</b>	<b>53.6</b>	<b>23.3</b>	<b>275.6</b>

(a) Employers were able to give more than one reason therefore percentages may not add to 100% across the columns.

Source: ABS data available on request, 2001–02 Training Expenditure and Practices Survey.

## Endnote

- 1 For a detailed description of training and training courses in the SETTT, see the Glossary in *Education and Training Experience, Australia, 2001*, cat. no. 6278.0.

## References

ABS (Australian Bureau of Statistics), *Australian Economic Indicators, May 1995*, cat. no. 1350.0, ABS, Canberra.

ABS, *Education and Training Experience, Australia, 2001*, cat. no. 6278.0, ABS, Canberra.

ABS, *Employer Training Expenditure and Practices, Australia, 2001–02*, cat. no. 6362.0, ABS, Canberra.

## Higher education

### Institutions

There were 40 higher education institutions which received operating grants from DEST in 2002, as well as the Australian Film, Television and Radio School, Avondale College, The National Institute of Dramatic Art and the Australian Defence Force Academy. The private Melbourne College of Divinity reported data for postgraduate students only, while Bond University in Queensland reported data for research students only.

Apart from the Australian National University and the Australian Maritime College, which are established under Commonwealth legislation, Australian universities operate under state or territory legislation. However, they are autonomous bodies responsible for their own governance and make their own decisions on allocation of funding, staffing and academic courses.

Most higher education institutions provide both full-time and part-time courses and external or distance education courses. In addition, some institutions offer courses which associate full-time study with periods of employment.

### Students and courses

Prior to 2001, institutions providing data supplied only one student enrolment file per year based on a 31 March census date. This meant enrolment numbers were a count of unique (individual students only appeared once) student enrolments as at 31 March.

In 2001, institutions started providing a second student enrolment file based on a 31 August census date. This means enrolment numbers now provide a count of students (one entry only per student) who were enrolled anytime within a 12-month period, that being 1 September to 31 August, and cover all enrolments at higher education institutions over that period.

Where time series data are shown, as in table 10.25, two figures are provided for 2001, one figure based on the 'old' scope and one figure based on the 'new' scope.

Table 10.23 shows the numbers of higher education students and their mode of participation at higher education institutions. The number of such students in 2002 was 896,621, a rise of more than 54,400 (or 6.5%) since 2001. This growth was almost entirely among those in face-to-face (internal) tuition. The proportion of students who were female was 54%, the same as for 2001. In 2002 full-time study was the choice of 64% of higher education students.

### 10.23 HIGHER EDUCATION STUDENTS(a), By mode(b) and type of enrolment

	2001			2002		
	Males	Females	Persons	Males	Females	Persons
<b>Internal</b>						
Full-time	224 529	262 785	487 314	242 537	282 695	525 232
Part-time	86 486	99 547	186 033	92 685	106 997	199 682
<i>Total</i>	<i>311 015</i>	<i>362 332</i>	<i>673 347</i>	<i>335 222</i>	<i>389 692</i>	<i>724 914</i>
<b>External</b>						
Full-time	9 239	12 421	21 660	10 833	13 608	24 441
Part-time	52 081	62 610	114 691	50 970	63 817	114 787
<i>Total</i>	<i>61 320</i>	<i>75 031</i>	<i>136 351</i>	<i>61 803</i>	<i>77 425</i>	<i>139 228</i>
<b>Multi-modal</b>						
Full-time	8 827	15 370	24 197	8 938	15 969	24 907
Part-time	2 969	5 319	8 288	2 670	4 902	7 572
<i>Total</i>	<i>11 796</i>	<i>20 689</i>	<i>32 485</i>	<i>11 608</i>	<i>20 871</i>	<i>32 479</i>
<b>Total</b>						
Full-time	242 595	290 576	533 171	262 308	312 272	574 580
Part-time	141 536	167 476	309 012	146 325	175 716	322 041
<b>Total</b>	<b>384 131</b>	<b>458 052</b>	<b>842 183</b>	<b>408 633</b>	<b>487 988</b>	<b>896 621</b>

(a) The scope of the data in this table is students enrolled at anytime within the 12-month period 1 September to 31 August. Previously, published data referred to students enrolled at 31 March of the stated year. (b) This relates to the delivery of education to the student. 'Internal' is where the delivery of education is done entirely within the institution, 'external' refers to delivery of course material to students off-campus, and 'multi-modal' is where at least one, but not all units, are provided at the institution.

Source: Department of Education, Science and Training, 'Students 2002: Selected Higher Education Statistics'.

The basic undergraduate course at most institutions is a Bachelor degree of three or four years duration. At some institutions, courses may also be offered at the Diploma or Advanced diploma level. Most institutions also offer postgraduate level study. One to two years of full-time postgraduate study are required for a Master's degree and three to five years for a Doctoral degree. Postgraduate diplomas and certificates are offered in some disciplines. In 2002, 70% of higher education students were enrolled in bachelor courses, with a further 25% enrolled in higher degree and other postgraduate courses (table 10.24).

Higher education institutions offer a wide variety of courses embracing such areas as Natural and physical sciences, Information technology,

Engineering and related technologies, Architecture and building, Agriculture, environment and related studies, Health, Education, Management and commerce, Society and culture, Creative arts and Food, hospitality and personal services. Fields of education with the largest numbers of award course students in 2002 were Management and commerce (28%); Society and culture (22%); Health (11%); and Education (10%).

Table 10.25 shows the number of higher education students by age group and sex. Between 2001 and 2002 the growth in higher education student numbers (6.5%) has been strongest among 20–24 year olds (9.1%) and 25–29 year olds (6.7%).

## 10.24 HIGHER EDUCATION STUDENTS, By level of education(a) — 2002

Field of education(b)	Level of education of study					Total courses '000
	Postgraduate degree '000	Graduate diploma/ Graduate certificate '000	Bachelor degree '000	Advanced diploma/ Diploma '000	Other education '000	
Natural and physical sciences	9.3	1.6	56.5	0.2	0.6	68.2
Information technology	14.0	7.5	57.3	0.2	0.2	79.1
Engineering and related technologies	9.3	2.2	48.2	0.3	1.2	61.3
Architecture and building	2.0	1.1	14.6	0.1	—	17.8
Agriculture, environment and related studies	3.3	1.0	11.9	1.7	0.6	18.5
Health	13.5	9.6	73.0	0.6	0.7	97.3
Education	14.6	12.9	59.6	0.6	1.7	89.4
Management and commerce	59.0	20.0	160.3	0.6	1.3	241.2
Society and culture	27.4	10.8	148.2	6.0	4.0	196.4
Creative arts	5.2	2.3	45.6	0.3	1.2	54.7
Food, hospitality and personal services	—	—	0.1	—	—	0.2
Mixed field programmes	—	—	—	—	1.9	1.9
Non-award	—	—	—	—	22.3	22.3
<b>Total</b>	<b>157.7</b>	<b>68.9</b>	<b>623.8</b>	<b>10.7</b>	<b>35.5</b>	<b>896.6</b>

(a) Level of education of study. (b) Combined courses are coded to two fields of education. As a consequence, the data in the total may be less than the sum of the data aggregated down each level of education.

Source: Department of Education, Science and Training, 'Students 2002: Selected Higher Education Statistics'.

## 10.25 HIGHER EDUCATION STUDENTS(a), By age group

Age group (years)	2000(b)	2001(b)	2001(c)	2002(c)
	'000	'000	'000	'000
19 and under				
Males	78.9	81.2	86.4	88.8
Females	110.4	113.4	120.0	123.3
Persons	189.3	194.5	206.4	212.1
20–24				
Males	107.1	113.0	129.7	141.2
Females	126.2	132.7	150.3	164.3
Persons	233.3	245.7	280.0	305.5
25–29				
Males	45.2	47.6	59.7	63.7
Females	49.0	51.2	63.1	67.3
Persons	94.1	98.7	122.8	131.0
30 and over				
Males	80.2	84.8	108.3	115.0
Females	98.6	102.7	124.6	133.0
Persons	178.8	187.4	232.9	248.0
Total				
Males	311.4	326.6	384.1	408.6
Females	384.1	399.8	458.1	488.0
Persons	<b>695.5</b>	<b>726.4</b>	<b>842.2</b>	<b>896.6</b>

(a) Includes students in enabling and non-award courses. (b) Students enrolled at 31 March. (c) In 2001 the scope used to define the data in this table changed to include students enrolled at anytime within the 12-month period 1 September to 31 August. Previously, published data referred to students enrolled at 31 March of the stated year. Both old scope and new scope series are presented here for 2001.

Source: Department of Education, Science and Training, 'Students 2002: Selected Higher Education Student Statistics'.

## Graduate starting salaries

The average annual starting salary of male bachelor degree graduates has risen by 32% between 1992 and 2002, to \$42,366. For females the rise was 33% to \$37,784 (table 10.26).

These starting salaries, as a percentage of average annual full-time adult ordinary time earnings, have declined in the years 1992–2002. For males they dropped from 98.9% to 88.1%. For females the respective percentages dropped from 105.0% to 92.8%.

The male postgraduate average annual starting salary rose by 50% between 1992 and 2002, to \$67,165. For females the rise was 44% to \$52,747. Male postgraduate starting salaries, as a percentage of average annual full-time adult ordinary time earnings, show rises between 1992 and 2002 increasing from 138.2% to 139.6%. For females they declined from 135.6% to 129.5%.

Female starting salaries for bachelor degree graduates were 89.1% of the equivalent male starting salaries in 2002. The ratio for female to male postgraduate starting salaries was 78.5% in 2002.

## Staff

Table 10.27 shows that in 2002 there were almost equal proportions of male and female staff in higher education. This has changed somewhat over the last decade — in 1992, 53% of all higher education staff were male.

Higher education staff may be classified as academic or non-academic. In 2002, as in previous years, there were more non-academic than academic staff. The largest numbers of academics were at the lecturer and senior lecturer levels.

While there were more male than female academics in 2002, the proportions were closer than they had been a decade earlier. In 2002, 62% of academics were male, compared to 68% in 1992. Men outnumbered women at all levels of academic staff except 'below lecturer'. Between 1992 and 2002, the proportion who were women increased for all levels of academic staff, most notably for senior lecturers.

### 10.26 STARTING SALARIES FOR EMPLOYED HIGHER EDUCATION GRADUATES

	Bachelor graduates(a)		Postgraduates(a)		Average annual full-time adult ordinary time earnings(b)	
	Males	Females	Males	Females	Males	Females
	\$	\$	\$	\$	\$	\$
1992	32 127	28 429	44 852	36 718	32 462	27 079
1997	36 467	32 139	54 335	42 831	38 870	32 448
2002	42 366	37 784	67 165	52 747	48 099	40 733

(a) Self-employed graduates are included in 1992 and 1997 but excluded in 2002. (b) Of employees.

Source: *Average Weekly Earnings, Australia (6302.0)*; *Graduate Careers Council of Australia, Graduate Destinations Survey*.

### 10.27 HIGHER EDUCATION STAFF

Staff classification	1992			2002		
	Males %	Females %	Persons no.	Males %	Females %	Persons no.
<b>Academic staff</b>						
Above senior lecturer	89.9	10.1	5 411	81.9	18.1	7 475
Senior lecturer	80.9	19.1	7 606	67.7	32.3	8 543
Lecturer	60.0	40.0	12 228	54.2	45.8	11 995
Below lecturer	48.7	51.3	5 939	46.1	53.9	6 587
<b>Total</b>	<b>68.1</b>	<b>31.9</b>	<b>31 184</b>	<b>62.0</b>	<b>38.0</b>	<b>34 600</b>
<b>Non-academic staff</b>	<b>42.2</b>	<b>57.8</b>	<b>42 771</b>	<b>38.1</b>	<b>61.9</b>	<b>46 544</b>
<b>Total</b>	<b>53.1</b>	<b>46.9</b>	<b>73 955</b>	<b>48.3</b>	<b>51.7</b>	<b>81 144</b>

Source: *Department of Education, Science and Training, 'Staff 2002: Selected Higher Education Statistics'*.

## Adult and community education (ACE)

ACE is the most decentralised of the education sectors. ACE refers to the provision of those general adult education programs and activities which fall outside, but complement, the formal programs and qualification pathways provided by the school, VET and higher education sectors. ACE focuses on the provision of learning opportunities at a community level, rather than work-related training. The community education and VET sectors are the largest providers of adult recreational and leisure courses.

Courses range from general interest, recreational and leisure activities, personal development, social awareness and craft, through to vocational, remedial and basic education. Community-based adult education is open to all, and its non-formal characteristic demonstrates the capacity of the community to develop alternatives to institution based education. There were 255,300 enrolments in ACE programs in 2002, of which 72% were by females.

Recreation, leisure and personal enrichment enrolments are mainly with community-based providers (82% of total enrolments in 2002), the balance being almost entirely with government VET providers.

In 2002, 27% of students in ACE courses were enrolled in Society and culture courses, 26% in Creative arts courses, and 10% in Health courses (table 10.28).

## Participation in education and training

In May 2002, 2.6 million people aged 15–64 years had applied to enrol in a course of study (table 10.29). Of all applicants, 92% gained a place and were studying.

Between 1997 and 2002, the demand for education increased, as did the number of people being accepted into educational institutions. Although there was a rise in the number of enrolment applications across all age groups, the number of people unable to gain placement in courses was stable (graph 10.30).

### 10.28 COURSE ENROLMENTS IN PERSONAL ENRICHMENT PROGRAMS — 2002

Field of education	Males '000	Females '000	Total enrolments(a) '000
Natural and physical sciences	3.7	7.6	11.4
Information technology	0.6	0.7	1.3
Engineering and related technologies	7.6	10.3	18.0
Architecture and building	1.9	4.0	5.9
Agriculture, environmental and related studies	2.5	3.5	6.1
Health	5.2	20.1	25.5
Education	6.7	13.8	20.5
Management and commerce	5.0	8.9	14.1
Society and culture	17.3	50.3	68.4
Creative arts	13.8	52.9	67.4
Food, hospitality and personal services	2.7	9.5	12.3
Mixed field programmes	2.1	2.4	4.5
<b>Total</b>	<b>69.2</b>	<b>184.0</b>	<b>255.3</b>

(a) Includes 'sex not stated' but excludes schools data submitted by states and territories.

Source: National Centre for Vocational Education Research, data available on request, National Vocational Education and Training Collection.

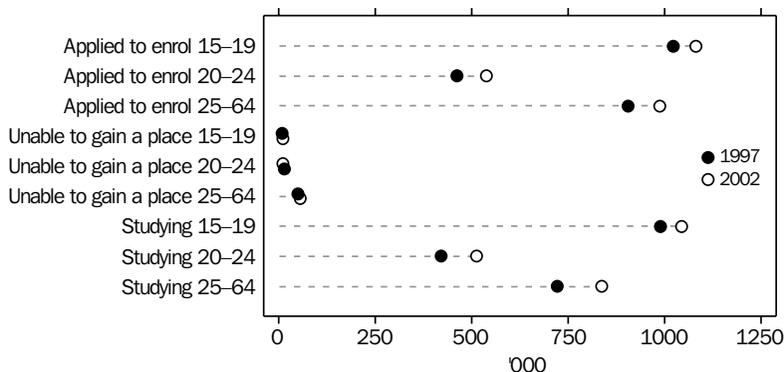
### 10.29 PARTICIPATION IN EDUCATION(a) — May 2002

	Males '000	Females '000	Persons '000
<b>Applied to enrol</b>	<b>1 244.6</b>	<b>1 358.6</b>	<b>2 603.2</b>
Studying	1 151.0	1 239.5	2 390.5
Gained placement but deferred study	61.2	72.7	133.8
Unable to gain placement	32.5	46.4	78.8

(a) Persons aged 15–64 years.

Source: ABS data available on request, Survey of Education and Work, 2002.

### 10.30 PARTICIPATION IN EDUCATION(a), By age group



Source: ABS data available on request, Survey of Education and Work, 1997 and 2002.

While participation in education may occur at any age, many young people continue in full-time education immediately after completing compulsory schooling, either in post-compulsory schooling or within other forms of education such as VET. Some young people return to full-time study after a period of absence after completing compulsory schooling. At May 2002, 70% of 15–19 year olds were in full-time education (including 50% still at school). At age 20–24 years, 26% were undertaking full-time study (including less than 1% still at school) and 11% were participating in part-time tertiary study (table 10.31).

Many people aged 25 years and over return to study, to upgrade their skills or to gain new skills, and often in conjunction with employment. The education participation rate at May 2002 for people in this age group was higher for those in part-time study (5.3%) than for those in full-time study (1.9%).

### Educational attendance and the labour force

Graph 10.32 indicates the labour force status of all students aged 15–64 years at May 2002. Some 61% of those studying Year 12 or below were not in the labour force, while 32% were employed. In contrast, 27% of other students were not in the labour force and 67% were employed. At May 2002, most people aged 15–19 years enrolled in a course of study leading to a qualification, were either not in the labour force at all (51%) or were employed part-time (35%). Some 40% of students aged 20–24 years were employed part-time, and another 29% were not in the labour force (table 10.33). Full-time employment was much higher among students aged 20–24 than among

those aged 15–19 (25% compared to 7%). In both age groups, students who undertook part-time study were more frequently employed full-time than part-time.

The ‘full-time participation rate’ describes the proportion of the population who were either in full-time education or training, or in full-time work, or in both part-time work and part-time education or training. This helps to identify those at risk of marginal participation or non-participation in the labour market. The full-time participation rate for people aged 15–19 years was 87% at May 2002, and 77% for 20–24 year olds (table 10.33).

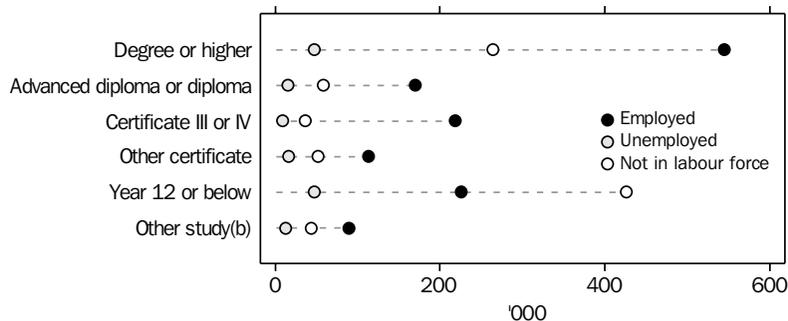
### 10.31 EDUCATION PARTICIPATION RATES(a) — May 2002

	Age group (years)		
	15-19	20-24	25-64
Attending school	50.2	**—	**—
Attending tertiary(b)			
Full-time	19.6	25.6	1.9
Part-time	6.8	10.8	5.3
Total	26.4	36.4	7.3
Total attending	76.7	36.5	7.3
Not attending	23.3	63.5	92.7
Total	100.0	100.0	100.0

(a) Persons aged 15–64 years. (b) Educational institutions offering post-school courses.

Source: ABS data available on request, Survey of Education and Work, 2002.

### 10.32 PARTICIPATION IN EDUCATION(a), By level of study — May 2002



(a) Persons aged 15–64 years. (b) Comprises persons in bridging courses, studying for statements of attainment, other study not leading to a qualification or unable to be determined.

Source: *Education and Work, Australia, May 2002* (6227.0).

### 10.33 PARTICIPATION IN EDUCATION, By labour force status — May 2002

	Enrolled in study leading to a qualification			Other(a) '000	Total '000
	Full-time '000	Part-time '000	Total '000		
<b>15–19 YEARS</b>					
In the labour force					
Employed					
Full-time	*5.1	66.8	72.0	142.7	214.6
Part-time	341.8	17.8	359.6	72.3	431.9
<b>Total</b>	<b>346.9</b>	<b>84.7</b>	<b>431.6</b>	<b>215.0</b>	<b>646.5</b>
Unemployed					
	68.7	*4.0	72.8	58.5	131.1
Not in the labour force					
	525.3	*4.3	529.7	41.3	571.0
<b>Total</b>	<b>940.9</b>	<b>93.1</b>	<b>1 034.0</b>	<b>314.8</b>	<b>1 348.8</b>
<b>20–24 YEARS</b>					
In the labour force					
Employed					
Full-time	13.4	111.3	124.7	568.8	693.5
Part-time	174.4	24.6	199.0	120.7	319.7
<b>Total</b>	<b>187.8</b>	<b>135.9</b>	<b>323.7</b>	<b>689.5</b>	<b>1 013.2</b>
Unemployed					
	20.4	7.0	27.5	75.4	102.8
Not in the labour force					
	144.6	6.7	151.3	110.5	261.8
<b>Total</b>	<b>352.8</b>	<b>149.6</b>	<b>502.4</b>	<b>875.3</b>	<b>1 377.8</b>

(a) Includes those not enrolled and those enrolled in study not leading to a qualification.

Source: *Education and Work, Australia, May 2002* (6227.0).

## Educational attainment

Formal educational qualifications are the desired outcome of most study at educational institutions. When issued by an accredited authority they denote a particular level of knowledge, skills and perhaps competencies. This assists the graduates themselves when entering the labour market, employers in selecting appropriate personnel, and

clients in assessing the quality of professional services. The classification of educational attainment to level assists in measuring the stocks of available skills in a community, enabling policy makers to monitor the volume of skill levels compared to skill shortages, and to influence the direction of future educational focus.

In May 2002, of the 12.9 million persons aged 15–64, 6.2 million (48%) had at least one non-school qualification. These comprised 2.3 million whose level of highest non-school qualification was a bachelor degree or higher, 0.9 million whose highest was an advanced diploma or diploma, 1.9 million whose highest was a certificate III or IV and 0.8 million whose highest was a certificate I or II (table 10.34).

Graph 10.35 shows the proportion of males and females aged 15–64 and their level of highest non-school qualification at May 1992, 1997, and 2002. During this period the proportion of males with a Bachelor degree or higher has increased by 6.0 percentage points, and the proportion of females increased by 10.3 percentage points. In 1992 there was a greater percentage of males (11%) with a Bachelor degree or higher than females

(8.2%). Parity was achieved in 1997 (13.6% of males, 13.5% of females). In 2002 the data shows 18.5% of females having a Bachelor degree or higher, compared to 17.0% of males.

Tables 10.36 and 10.37 examine the highest non-school qualification held by persons aged 15–64 years. Overall, 48% of persons aged 15–64 years held a non-school qualification. Some 15% had a Certificate III or IV as their highest non-school qualification, compared to 13% with a Bachelor degree. The most qualified age group was those aged 25–44 years, 58% of whom held non-school qualifications, as did 50% of those aged 45–64 years. While the younger age groups held fewer non-school qualifications, their participation in education is high (graph 10.30 and table 10.31).

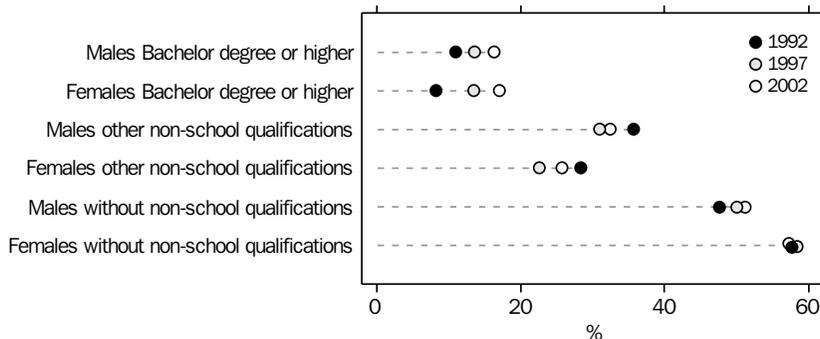
### 10.34 LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION(a) — May 2002

	Highest year of school completed				Total(b)
	Year 12	Year 11	Year 10	Year 9 or below	
	'000	'000	'000	'000	'000
Postgraduate degree	281.6	5.9	*5.2	**1.2	294.0
Graduate diploma/Graduate certificate	282.6	13.6	16.4	*2.1	314.7
Bachelor degree	1 550.1	51.8	74.3	10.7	1 687.4
Advanced diploma/Diploma	672.8	89.4	158.7	28.5	949.4
Certificate III/IV	551.0	309.2	823.8	226.5	1 911.1
Certificate I/II	300.0	136.1	304.6	78.3	819.1
Certificate not further defined	82.0	29.3	44.6	15.2	171.2
Level not determined	36.4	13.0	24.9	9.8	84.0
Without a non-school qualification	2 183.7	886.6	2 106.5	1 482.4	6 695.9
<b>Total</b>	<b>5 940.1</b>	<b>1 534.9</b>	<b>3 559.1</b>	<b>1 854.6</b>	<b>12 926.8</b>

(a) Persons aged 15–64 years. (b) Includes persons who never attended school. Boarding school pupils at May 2002 have not been allocated a highest year of school completed but are included in the total.

Source: *Education and Work, Australia, May 2002* (6227.0).

### 10.35 LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION(a)



(a) Persons aged 15–64 years.

Source: ABS data available on request, *Survey of Education and Work, 1992, 1997 and 2002*.

### 10.36 LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION(a), By age group — May 2002

	Age group (years)				Total '000
	15–19 '000	20–24 '000	25–44 '000	45–64 '000	
Postgraduate degree	—	*3.0	157.9	133.1	294.0
Graduate diploma/Graduate certificate	—	9.6	169.1	136.0	314.7
Bachelor degree	**0.4	197.7	998.4	490.9	1 687.4
Advanced diploma/Diploma	8.8	82.8	485.3	372.5	949.4
Certificate III/IV	30.0	177.8	994.8	708.6	1 911.1
Certificate I/II	31.5	69.1	409.9	308.7	819.1
Certificate not further defined	19.9	49.1	74.1	28.0	171.2
Level not determined	*1.9	*4.1	37.8	40.3	84.0
Total with non-school qualifications	92.5	593.2	3 327.2	2 218.1	6 231.0
Total without non-school qualifications	1 256.3	784.6	2 435.6	2 219.4	6 695.9
<b>Total</b>	<b>1 348.8</b>	<b>1 377.8</b>	<b>5 762.8</b>	<b>4 437.5</b>	<b>12 926.8</b>

(a) Persons aged 15–64 years.

Source: *Education and Work, Australia, May 2002 (6227.0)*.

### 10.37 MAIN FIELD OF HIGHEST NON-SCHOOL QUALIFICATION(a), By age group — May 2002

	Age group (years)				Total '000
	15–19 '000	20–24 '000	25–44 '000	45–64 '000	
Natural and physical sciences	**1.1	20.3	115.2	69.3	205.9
Information technology	5.7	32.2	135.0	42.4	215.3
Engineering and related technologies	11.6	88.3	672.7	538.6	1 311.2
Architecture and building	*3.8	32.9	213.7	160.9	411.4
Agriculture, environment and related studies	*5.1	27.7	101.6	48.8	183.2
Health	*3.2	37.7	326.9	253.1	621.0
Education	**0.8	21.8	218.5	229.4	470.4
Management and commerce	24.0	158.9	786.9	444.0	1 413.8
Society and culture	9.5	67.2	380.8	258.9	716.5
Creative arts	*5.5	40.5	134.2	62.0	242.3
Food, hospitality and personal services	21.0	59.5	211.8	95.2	387.5
Mixed field programmes	**0.8	*1.3	*1.9	**0.3	*4.2
Field not determined	**0.4	*4.8	28.0	15.2	48.4
<b>Total</b>	<b>92.5</b>	<b>593.2</b>	<b>3 327.2</b>	<b>2 218.1</b>	<b>6 231.0</b>

(a) Persons aged 15–64 years.

Source: *Education and Work, Australia, May 2002 (6227.0)*.

In the 25–44 age group there were approximately 1.3 million persons (23% of all 25–44 year olds) whose highest non-school qualification was a Bachelor degree or above (table 10.36). This compares with 760,000 (17%) in the 45–64 age group. In the 25–44 age group 994,800 persons (17%) had a level of highest non-school qualification of Certificate III or IV, compared to 708,600 persons (16%) in the age group 45–64.

Among those without a non-school qualification, 33% had completed Year 12, while for 31%, their highest year of school completed was Year 10 (table 10.34).

Among those aged 15–64 years with a non-school qualification, the two most common main fields of education for the highest non-school qualification held were Management and commerce (1.4 million persons, 23% of those with

qualifications), and Engineering and related technologies (1.3 million persons, 21%) (table 10.37). The largest qualification pools within the 25–44 year age group were Management and commerce, followed by Engineering and related technologies (786,900 and 672,700 persons). For those aged 45–64 years, these two fields of education had their rankings reversed: Engineering and related technologies was followed by Management and commerce (538,600 and 444,000 persons).

Among persons aged 15–19 and 20–24 years the patterns were somewhat different. Of the few 15–19 year olds who already had a qualification, Food, hospitality, and personal services was second to Management and commerce (22.7% and 25.9%, respectively, table 10.37).

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National Centre for Education and Training Statistics, <<http://www.abs.gov.au/ncets>>

National Centre for Vocational Education Research, <<http://www.ncver.edu.au>>

# Indigenous education and training

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Education is generally considered to be a key factor in improving outcomes for Aboriginal and Torres Strait Islander peoples, with many studies having shown that improved health and socioeconomic status are directly linked to educational participation and achievement. A range of issues, however, affect participation in education for Aboriginal and Torres Strait Islander peoples, including: access to educational institutions, financial constraints, and community expectations. While targeted programs aim to improve outcomes in some educational areas, Indigenous students continue to engage in education and training at lower rates of participation and achieve lower levels of educational attainment than for all Australian students.

This article examines the participation of Indigenous students in each of the education sectors: schooling, vocational education and training, and higher education.

## Indigenous school students

In 2002 there were 82,467 full-time plus full-time equivalent (FTE) of part-time Indigenous students attending primary schools and a further 39,618 Indigenous students (FTE) attending secondary schools.

Most Indigenous students (88%) attended government schools in 2002. Of the remainder attending non-government schools, most were attending Catholic schools (66%) (table S10.1). The increase in ungraded students between primary and secondary education is mostly attributable to the ungraded classification of secondary-age students attending Northern Territory remote Homeland Learning Centres.

This is due to the difficulty of classifying such students in terms of the standard secondary grade structure.

Graph S10.2 shows that, for government schools, numbers of Indigenous school students (FTE) decline with each successive year level post Pre-year 1. While there is a gradual decline from Year 1 to Year 7, it is accelerated in secondary schooling as Indigenous students complete compulsory schooling, and particularly from Year 10 to Year 11. At non-government schools, school student numbers (FTE) remain steady from Year 1 to Year 7, then increase to a higher level for Years 8 to 10 as some students of government schools move to non-government schools.

Table S10.3 shows a 20% increase in Indigenous students attending school between 1998 and 2002. Over this period, attendance at school increased from 102,488 to 122,085 students (FTE). While New South Wales and Queensland experienced the largest increases in Indigenous school attendance (by 7,072 and 5,607 students (FTE) respectively), growth was proportionally greatest for the Australian Capital Territory (27%) and Victoria (26%).

Increased attendance by Indigenous students was evident at both primary and secondary levels. This was the case in every state and territory, except the Northern Territory, where attendance at primary schools fell by less than 1%. Growth in Indigenous students over the period was greater at the secondary level (24%) than at the primary level (17%).

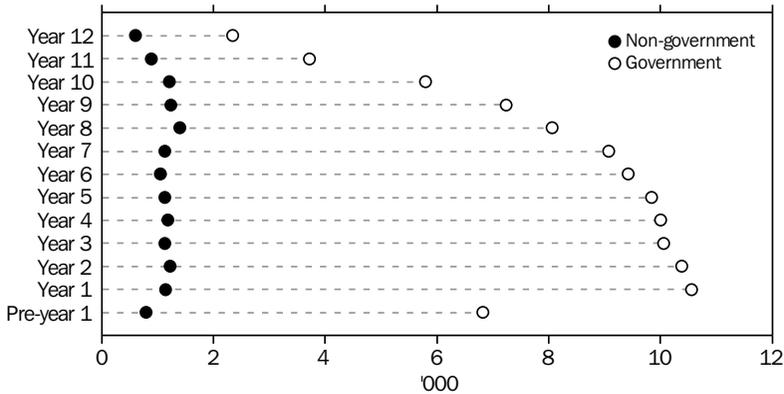
### S10.1 INDIGENOUS SCHOOL STUDENTS (FTE)(a) — August 2002

Level/year of education	Government schools	Non-government schools			All schools
		Catholic	Other	Total	
<b>Primary</b>					
Pre-year 1(b)	6 815	595	220	815	7 630
Year 1	10 553	889	260	1 149	11 702
Year 2	10 380	927	297	1 224	11 604
Year 3	10 061	849	282	1 131	11 192
Year 4	10 004	887	290	1 177	11 181
Year 5	9 837	842	289	1 131	10 968
Year 6	9 417	753	298	1 051	10 468
Year 7 (Qld, SA, WA, NT)	5 556	493	240	733	6 289
Ungraded	1 123	89	221	310	1 433
<i>Total</i>	73 746	6 324	2 397	8 721	82 467
<b>Secondary</b>					
Year 7 (NSW, Vic., Tas., ACT)	3 522	314	76	390	3 912
Year 8	8 148	802	591	1 393	9 541
Year 9	7 284	746	487	1 233	8 516
Year 10	5 832	777	428	1 205	7 037
Year 11	3 841	534	349	883	4 725
Year 12	2 426	418	182	600	3 025
Ungraded	2 040	198	624	822	2 862
<i>Total</i>	33 092	3 789	2 737	6 526	39 618
<b>Total</b>	<b>106 839</b>	<b>10 113</b>	<b>5 134</b>	<b>15 246</b>	<b>122 085</b>

(a) Full-time students plus full-time equivalent of part-time students. (b) Pre-year 1 does not include Qld.

Source: ABS data available on request, National Schools Statistics Collection, 2002.

### S10.2 INDIGENOUS SCHOOL STUDENTS (FTE)(a), By level/year of education — August 2002



(a) Full-time students plus full-time equivalent of part-time students.

Source: ABS 2002.

### S10.3 INDIGENOUS SCHOOL STUDENTS (FTE)(a), By level of education — August

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(b)	Aust.
<b>Primary</b>									
1998	19 185	3 412	19 242	4 511	11 697	2 422	9 629	475	70 572
2002	23 283	4 270	22 845	5 123	13 828	2 862	9 609	648	82 467
<b>Secondary</b>									
1998	9 941	1 750	8 712	1 543	4 470	1 709	3 440	350	31 915
2002	12 915	2 223	10 716	1 982	5 659	2 013	3 708	402	39 618
<b>Total</b>									
1998	29 126	5 162	27 954	6 054	16 167	4 131	13 068	825	102 488
2002	36 198	6 493	33 561	7 105	19 487	4 875	13 317	1 049	122 085

(a) Full-time students plus full-time equivalent of part-time students. (b) Includes one government primary school in Jervis Bay Territory.

Source: ABS data available on request, National Schools Statistics Collection, 2002.

### Apparent retention in school

The growth in retention of Indigenous students in senior secondary schooling has been notable over the five-year period ending 2002. The apparent retention rate for Indigenous students from Year 7/8 to Year 12 rose 5.9 percentage points from 1998 to 2002 compared to a rise of 3.6 percentage points for

non-Indigenous students over the same period. Nonetheless, the rate of retention of Indigenous students in secondary schools remains substantially below that for non-Indigenous students. The apparent retention rate for Indigenous students commencing in Year 7/8 and continuing to Year 12 was 38%, compared to 76% for non-Indigenous students (table S10.4).

### S10.4 APPARENT RETENTION RATES(a), Indigenous and non-Indigenous students

	1998	1999	2000	2001	2002
	%	%	%	%	%
<b>Year 9</b>					
Indigenous	95.0	93.9	95.7	96.5	97.8
Non-Indigenous	99.7	99.9	99.8	100.0	99.8
<b>Year 10</b>					
Indigenous	83.1	82.0	83.0	85.8	86.4
Non-Indigenous	97.5	97.9	98.0	98.2	98.5
<b>Year 11</b>					
Indigenous	52.5	56.0	53.6	56.1	58.9
Non-Indigenous	85.4	86.4	86.2	87.6	88.7
<b>Year 12</b>					
Indigenous	32.1	34.7	36.4	35.7	38.0
Non-Indigenous	72.7	73.2	73.3	74.5	76.3

(a) Full-time students only. From the commencement of secondary school, which is Year 7 in NSW, Vic., Tas., and the ACT and Year 8 in Qld, SA, WA and the NT.

Source: ABS 2002.

## Indigenous VET students

In 2002, 53% of Indigenous vocational education and training (VET) clients were male. In all geographic regions, the number of male Indigenous clients outnumbered their female counterparts (table S10.5). Some 26% of Indigenous clients were located in capital cities compared with 57% of all clients, and a further 28% of Indigenous clients were located in remote areas compared with 3% of all clients.

Since clients may be enrolled in more than one VET course, the number of course enrolments is greater than the total number of clients. There were 79,600 Indigenous course enrolments in 2002 compared with 62,000 Indigenous clients.

In 2002 there were more Indigenous enrolments (25%) in multi-field VET courses (including school courses offered in VET institutions) than in other courses (table S10.6). Management and commerce (15%) and Society and culture (14%) were the next most popular fields of education. By way of contrast, the most popular fields of education for non-Indigenous VET students,

were in Management and commerce (22%), Engineering and related studies (15%) and Society and culture (12%).

The number of Indigenous apprentices and trainees has increased by 75%, from 4,000 in 1998 to 7,000 in 2002. Over the same period, the growth in non-Indigenous apprentices and trainees was 104%. Indigenous apprentices and trainees represented 1.9% of all apprentices and trainees in 2002, compared to 1.8% in 1998.

## Indigenous higher education students

In 2002, 8,871 Indigenous students were enrolled in higher education, an increase of 2.4% on enrolments in 2001. Table S10.7 shows the distribution of Indigenous higher education student enrolments across the states and territories. In 2002, 4,246 Indigenous students commenced higher education study, an increase of 2.8% on the level of commencing students in 2001.

**S10.5 INDIGENOUS VET(a) CLIENTS(b), By geographic region of client address — 2002**

	Units	Capital city	Other urban	Rural	Remote	All regions(c)(d)
Indigenous clients						
Males	'000	8.3	1.8	12.4	9.2	32.7
Females	'000	7.6	1.7	11.0	8.0	28.9
Persons	'000	15.9	3.6	23.4	17.3	61.7
All Indigenous clients	%	25.8	5.8	37.9	28.0	100.0
All clients	%	56.6	6.7	30.3	3.4	100.0

(a) Includes all vocational and preparatory courses delivered by TAFE and other government providers, registered community providers, and publicly funded delivery by private providers that lead to a vocational award. Excludes enrolments in fee-for-service VET courses of private providers, and schools data submitted by states and territories. (b) A client is any individual participating in a specific enrolment or training contract with a specific organisation. (c) Includes Indigenous students whose sex is unknown. (d) Includes 'Indigenous status not stated' and students studying outside Australia.

Source: National Centre for Vocational Education Research, data available on request, National Vocational Education Collection.

**S10.6 INDIGENOUS VET COURSE ENROLMENTS(a), By field of education — 2002**

	Number '000
Natural and physical sciences	0.1
Information technology	1.8
Engineering and related technologies	8.5
Architecture and building	3.6
Agriculture, environmental and related studies	6.6
Health	5.0
Education	2.4
Management and commerce	12.2
Society and culture	11.0
Creative arts	4.3
Food, hospitality and personal services	4.2
Multi-field VET	20.0
<b>Total</b>	<b>79.6</b>

(a) Includes all vocational and preparatory courses delivered by TAFE and other government providers, registered community providers, and publicly funded delivery by private providers that lead to a vocational award. Enrolments in fee-for-service VET courses of private providers have been excluded.

Source: National Centre for Vocational Education Research, data available on request, National Vocational Education Collection.

Overall, females (63%) represented the greater proportion of Indigenous higher education students in 2002. The equivalent proportion among all higher education students was 54%. The proportion of female Indigenous students was higher in the Northern Territory, South Australia and Western Australia (68%, 65% and 64% respectively).

Graph S10.8 illustrates the growth in Indigenous participation in higher education over the past decade. Between 1992 and 2002 the number of Indigenous students in higher education increased by 58% from 5,105 to 8,871.

Table S10.9 shows that in 2002 the fields of study with the largest numbers of Indigenous student enrolments were Society and culture (35%), Education (20%) and Health (13%). Some 70% of Indigenous students in higher education at 2002 were enrolled in courses leading to a Bachelor degree or higher level of qualification. This compares to 95% of all higher education students.

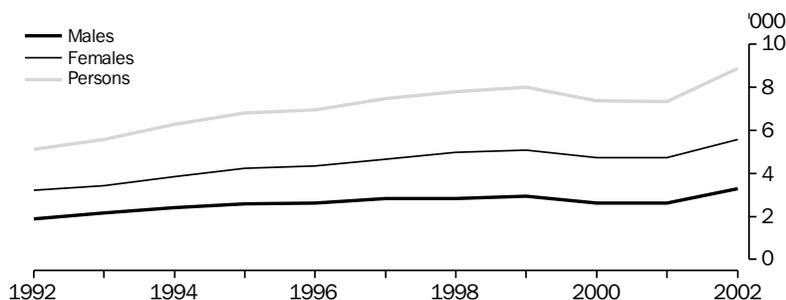
**S10.7 INDIGENOUS HIGHER EDUCATION STUDENTS(a) — 2002**

	Units	Commencing students			All students		
		Males	Females	Persons	Males	Females	Persons
New South Wales	no.	435	556	991	948	1 390	2 338
Victoria	no.	137	214	351	346	524	870
Queensland	no.	310	514	824	677	1 146	1 823
South Australia	no.	84	145	229	185	349	534
Western Australia	no.	318	498	816	556	984	1 540
Tasmania	no.	46	58	104	98	149	247
Northern Territory	no.	216	512	728	333	719	1 052
Australian Capital Territory	no.	39	52	91	86	109	195
Multi-state(b)	no.	30	82	112	63	209	272
<b>Total</b>	<b>no.</b>	<b>1 615</b>	<b>2 631</b>	<b>4 246</b>	<b>3 292</b>	<b>5 579</b>	<b>8 871</b>
Change from 2001	%	7.8	0.0	2.8	5.1	0.9	2.4

(a) Students enrolled at anytime within the 12-month period 1 September to 31 August. (b) Multi-state institutions have campuses in more than one state and/or territory.

Source: DEST 2002.

### S10.8 INDIGENOUS HIGHER EDUCATION STUDENTS(a)



(a) The scope of the data changed in 2001. Prior to this it included students enrolled at 31 March. From 2001 it includes students enrolled at any time in the 12-month period 1 September to 31 August.

Source: DEST 2002.

### S10.9 INDIGENOUS HIGHER EDUCATION STUDENTS, By field of education and level of course — 2002

Field of education	Postgraduate degree	Graduate diploma/ Graduate certificate	Bachelor degree	Advanced diploma/ Diploma	Other education	Enabling courses	Total(a)
Natural and physical sciences	18	6	223	1	2	7	257
Information technology	13	12	150	2	—	—	177
Engineering and related technologies	10	6	102	2	8	1	129
Architecture and building	5	—	45	—	—	—	50
Agriculture, environment and related studies	10	23	118	21	9	42	223
Health	67	89	739	238	9	13	1 155
Education	111	76	1 158	361	10	64	1 780
Management and commerce	106	68	601	7	4	—	786
Society and culture	257	86	1 981	496	19	294	3 133
Creative arts	41	25	370	95	3	149	683
Mixed field programmes	—	—	—	—	—	728	728
Total(a)(b)	638	391	5 209	1 223	64	1 298	8 871

(a) Includes a small number of non-award courses. (b) The data take into account the coding of combined courses to two fields of education. As a consequence, the data in the total row may be less than the sum of the data aggregated down each field of education.

Source: DEST 2002.

## References

- ABS (Australian Bureau of Statistics) 2002, *Schools, Australia, 2002*, cat. no. 4221.0, ABS, Canberra.
- DEST (Department of Education, Science and Training), 2002, *Students 2002: Selected Higher Education Statistics*, DEST, Canberra.

## CRIME AND JUSTICE

The effects of criminal activity, as well as people's perceptions about the extent of such activity, are issues that impact directly or indirectly on the quality of people's lives. This chapter provides an overview of the Australian criminal justice system, including people's involvement with the system either as offenders or as victims of crime. As well as presenting data on the characteristics of crime victims and offenders and on outcomes from the justice process, the chapter also looks at levels of non-reporting of crime. The data presented are based on national crime and justice statistics produced by the Australian Bureau of Statistics (ABS). These are sourced from surveys such as the ABS Crime and Safety Survey and from administrative data that provide information about crimes recorded by police, about the volume and flow of work through the Higher Criminal Courts, and about prisoners handled by correctional services agencies. Justice is primarily administered through state and territory governments, with local variation in legislation, processes and operational structures. However, by taking account of these differences, nationally comparable crime and justice statistics provide indicators of the level and nature of crime across Australia and the associated outcomes of the criminal justice system.

This chapter includes an article *Indigenous prisoners*.

## The criminal justice system

The criminal justice system consists of the state/territory and Australian Government institutions, agencies, departments and personnel responsible for dealing with the justice aspects of crime, victims of crime, persons accused or convicted of committing a crime, and related issues and processes.

Each state and territory has its own police, courts and corrections systems that deal with offences against local laws and also federal laws in some cases, while 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 states and territories have independent legislative powers in relation to all matters that are not otherwise specifically vested in the Commonwealth of Australia. It is the statute law and the common law of the states and territories that primarily govern the day-to-day lives of most Australians.

The eight states and territories have powers to enact their own criminal laws, while the Commonwealth has powers to enact laws, including sanctions for criminal offences, in relation to its responsibilities under the Constitution. Thus there are nine different systems of criminal law in Australia. The existence of cooperative arrangements between the various states and territories and the Commonwealth, such as those relating to extradition or to the creation of joint police services, helps address issues that have arisen out of the separate development of these various systems of criminal law.

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 11.1 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 agencies such as Australian Customs Service (ACS), 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.

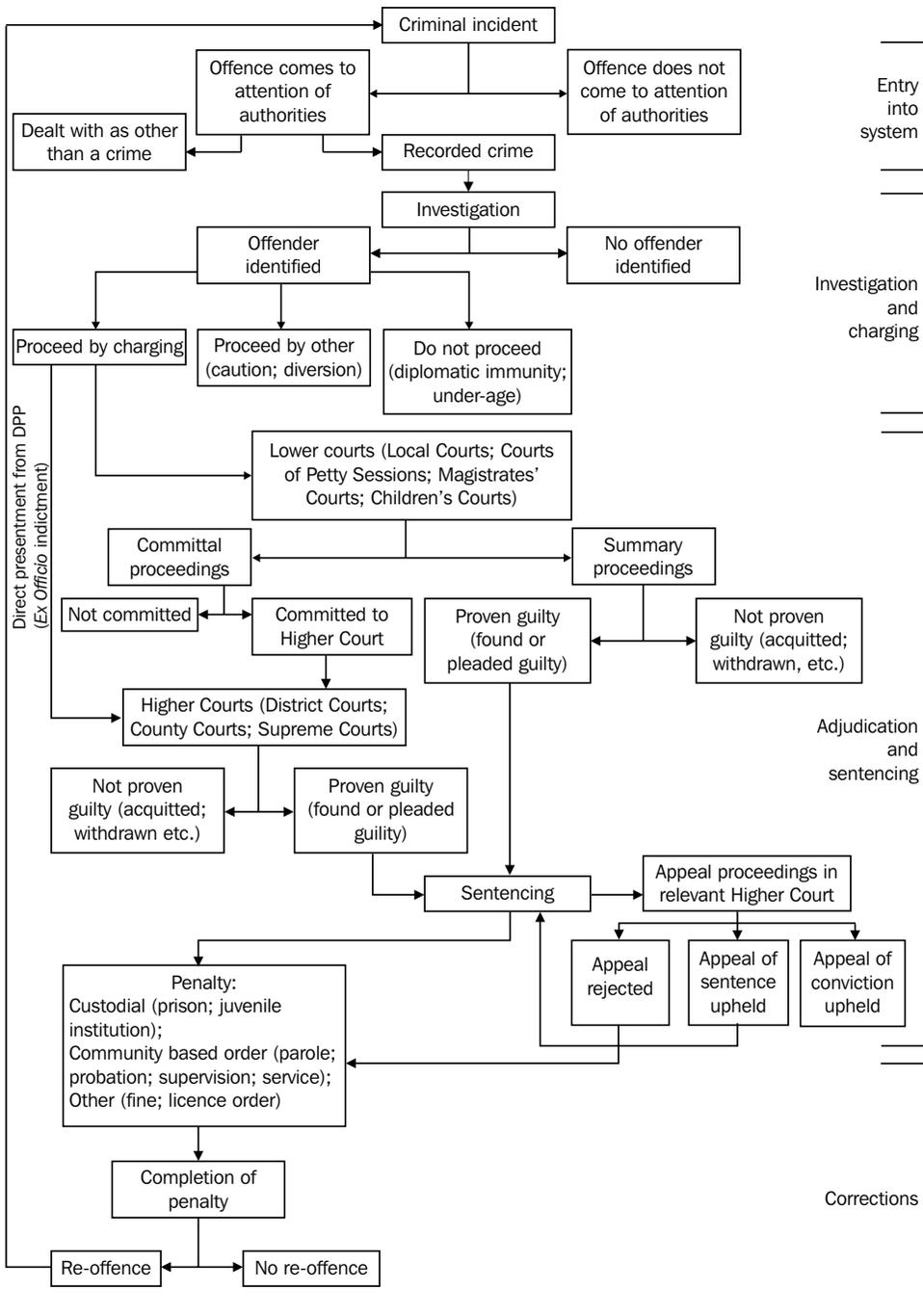
Following the hearing of the charges, in cases where a finding of guilt is made by the court, sentences may be imposed. These may include imprisonment, community service orders of various kinds, fines or bonds. A number of jurisdictions have also introduced penalties such as home detention or work outreach camps that are administered by correctional agencies. Fines and bonds are the most common penalties handed down by the courts.

## Expenditure on public order and safety

The Steering Committee for the Review of Commonwealth/State Service Provision, in its *Report on Government Services 2003*, estimated that recurrent expenditure on justice in 2001–02 was approximately \$361 per person. This excluded spending by governments on items such as justice-related capital works (i.e. new police stations, prisons or court facilities). Of the total recurrent expenditure of nearly \$7.0b in 2001–02, \$4.6b was spent on police services, and \$1.6b on corrective services (table 11.2).

Between 1997–98 and 2001–02, expenditure grew in real terms for corrective services at an annual average of 7.9%, and decreased for civil courts administration at an annual average of 3.6%.

### 11.1 FLOWS THROUGH THE CRIMINAL JUSTICE SYSTEM



Source: ABS unpublished paper, 'National Criminal Justice Statistical Framework, July 2001'.

### 11.2 GOVERNMENT EXPENDITURE ON JUSTICE(a)(b)(c)

	1997-98	1998-99	1999-2000	2000-01(d)	2001-02(d)(e)	Growth(d)(e)(f)
Justice sector	\$m	\$m	\$m	\$m	\$m	%
Police services	3 927	4 289	4 521	4 496	4 610	4.1
Court administration — criminal(g)	409	439	440	450	412	0.2
Court administration — civil(h)	436	476	493	358	375	-3.6
Corrective services	1 171	1 289	1 446	1 498	1 587	7.9
<b>Total justice system</b>	<b>5 943</b>	<b>6 493</b>	<b>6 899</b>	<b>6 802</b>	<b>6 984</b>	<b>4.1</b>

(a) In 2001-02 dollars. (b) Recurrent expenditure plus depreciation less revenue from own sources. (c) Payroll tax has not been included for WA and ACT as they are exempt. For all other jurisdictions, it has been included. (d) Court administration expenditure less income has been used instead of in-house revenue in 2000-01 and 2001-02. This has led to a much larger amount of revenue from own sources, particularly for the civil courts for these two years. Care needs to be taken in comparing the rates of growth of court expenditure prior to these two years. (e) The data for court administration (criminal) include a large amount of income from electronic courts not previously reported. (f) Average annual growth rate over the period 1997-98 to 2001-02. (g) Includes the cost of Magistrates' (including electronic and Children's), District/County, Supreme and Coroners' courts. (h) Includes the cost of Magistrates' (including Children's), District/County, and Supreme courts, Family Court, Federal Court of Australia and Family Court of WA. The Federal Magistrates' service has been included for the first time in 2001-02. The data exclude the cost of probate hearings for all years.

Source: Steering Committee for the Review of Commonwealth/State Service Provision, 'Report on Government Services 2003'.

## The police

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 ACS also have responsibility for the maintenance of law, order and safety.

While 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, they may perform a variety of additional duties in the service of the state. These duties include the prosecution of summary offences, regulation of street traffic, and 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 and the ACC, police in Australia are under the control of the relevant state and 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.

## Commonwealth policing agencies

### Australian Federal Police (AFP)

The AFP is a statutory authority established by the *Australian Federal Police Act 1979* (Cwth). The AFP has its headquarters in Canberra. Its Criminal

Investigations Program is conducted through six Regional Commands, its Headquarters Investigations Department and its numerous liaison officers in many countries.

The AFP is responsible for the prevention, detection and investigation of criminal offences such as drug offences, money laundering and organised crime, identifying the proceeds of crime, and investigation of 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 investigations.

### National Crime Authority (NCA)

The NCA was established by the Commonwealth Government in July 1984 through the *National Crime Authority Act 1984* (Cwth). Complementary legislation was passed in each state and territory to underpin the work of the NCA in those jurisdictions. This ensured that the NCA's investigations were not limited by jurisdictional or territorial boundaries.

On 1 January 2003 the NCA was subsumed by the ACC.

### Australian Crime Commission (ACC)

The ACC brings together the skills and functions of the former NCA, the Australian Bureau of Criminal Intelligence, and the Office of Strategic Crime Assessments. The merging of these agencies provides a coordinated national criminal

intelligence framework. It allows the setting of national intelligence priorities to avoid duplication; allows areas of new and emerging criminality to be identified and investigated; and provides for investigations to be intelligence driven.

The ACC has in-house and taskforce access to all coercive and investigatory powers that had been available to the NCA. A priority taskforce for the ACC is an investigation into illegal handgun trafficking, both into and within Australia. Other investigations include South-East Asian organised crime, money laundering and tax fraud on the Commonwealth, vehicle rebirthing and identity fraud.

### Australian High Tech Crime Centre (AHTCC)

The concept of a national centre to coordinate the efforts of Australian law enforcement in combating serious crime involving complex technology was a priority identified by the Australasian Police Commissioners Conference in its *Electronic Crime Strategy, March 2001* and was endorsed by the Australasian Police Ministers Council in November 2002. The Australian Police Commissioners recommended the creation of a single centre to deliver this capability. The AHTCC, hosted by the AFP, includes representation from all state and territory police forces both in its staff and its Board of Management.

The main strength of the AHTCC lies in leveraging the capabilities of each member agency and in coordinating effort to combat high tech crime. In addition, the AHTCC brings national consistency to the management of referrals, training, education, intelligence, policy advice and investigations.

### Number of sworn police officers

The number of sworn police officers in the various Australian police services is shown in table 11.3. The figures in the table are not directly comparable across the various jurisdictions, as those for ACC and AFP do not differentiate between full-time and part-time officers, whereas those for the states and territories are on a full-time equivalent basis.

Between 2000–01 and 2001–02, all states and the Northern Territory experienced increases in the absolute number of sworn police officers, with the largest increase occurring in Victoria (5%). The Australian Capital Territory was the only jurisdiction with a fall in the number of sworn police officers (1%). The number of sworn police officers per 100,000 population decreased marginally in the Australian Capital Territory (by 2%) and in New South Wales, Western Australia and the Northern Territory (all by less than 1%), and was noticeably higher in the Northern Territory than elsewhere, at 477 per 100,000.

**11.3 SWORN POLICE OFFICERS(a)**

Police officers	2000–01		2001–02	
	no.	rate per 100,000	no.	rate per 100,000
Australian Crime Commission(b)	128	n.a.	116	n.a.
Australian Federal Police(c)	1 442	n.a.	1 459	n.a.
New South Wales	13 296	207	13 716	206
Victoria	9 488	198	9 926	204
Queensland	7 734	215	7 995	218
South Australia	3 582	237	3 702	244
Western Australia(d)	4 742	250	4 778	249
Tasmania	1 081	229	1 094	231
Northern Territory(e)	948	478	954	477
Australian Capital Territory	591	185	584	181

(a) Where possible, based on full-time equivalents (FTE), except for the ACC, AFP and ACT figures which are based on actual number of sworn officers. NSW data for 2001–02 are based on headcount at 30 June 2002, and are not FTE data. (b) Seconded officers from home force. Figures are based on actual number of sworn officers as at 30 June 2002. (c) Excludes the AFP officers who were responsible for ACT policing and who are separately counted against the ACT. (d) For 2001–02 WA data exclude 130 recruits in training. Recruits in training were included in data for previous years. (e) For the NT, sworn police officers include Police auxiliaries and Aboriginal Community Police Officers.

Source: Australian Federal Police 'Annual Report, 2001–02'; National Crime Authority, 'Annual Report, 2001–02'; Steering Committee for the Review of Commonwealth/State Service Provision, 'Report on Government Services 2003', Attachment 5A for state and territory figures.

## National crime statistics

National crime statistics provide comparable data across the states and territories for selected crimes recorded by state and territory police in Australia.

Two sources of national statistics provide a picture of crime in Australia: crimes recorded by police, and crime victimisation surveys. Crimes recorded by police relate to victims of criminal incidents who have become known to police and whose experiences have been recorded by police. These offences may have been reported by a victim, witness or other person, or they may have been detected by police. These statistics do not provide a total picture of crime, as not all crimes come to the attention of police. In addition, care should be taken in interpreting police statistics, as fluctuations in recorded crime may be a reflection of changes in community attitudes to reporting crime, changes in police procedures or resources, or changes in crime recording systems, rather than a change in the incidence of criminal behaviour. Significant events occurring in particular years may also contribute to fluctuations in recorded crime.

A complementary picture of the nature and extent of crime comes from crime victimisation surveys. These household-based surveys collect information on individual's experiences of selected crimes and whether or not they reported the crimes to the police. 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. Crime victimisation 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. It may also be difficult to obtain reliable, comprehensive information about certain types of crime, such as sexual offences and assaults by

other household members. Finally, no reliable data can be collected by household surveys on crimes against commercial establishments.

## Crime and safety

The ABS Crime and Safety Survey is a household survey that has been conducted nationally in 1975, 1983, 1993, 1998 and 2002. The survey provides data on selected household crimes and personal crimes against persons aged 15 years and over for the 12-month period prior to the survey, and the risk factors associated with crime victimisation. Similar surveys have been conducted annually in New South Wales since 1990 (except for 1993, 1998 and 2002); in Victoria in 1994 and 1995; in Queensland in 1995; in South Australia in 1991, 1995 and 2000; in Western Australia in 1991, 1995, 1999 and 2000; in Tasmania in 1998; and in the Australian Capital Territory in 1995.

### Crimes affecting households and persons

Households and individuals in Australia experience a diverse range of crimes. The ABS Crime and Safety Survey focuses on those categories of more serious crime that affect the largest number of people: household break-in, motor vehicle theft, assault (including sexual assault) and robbery.

In the 12 months ended April 2002, 4.7% of households had at least one break-in to their home, garage or shed and 3.4% found signs of at least one attempted break-in (table 11.4). Less than 2% of households experienced at least one motor vehicle theft.

An estimated 0.6% of persons aged 15 years and over reported that they were victims of robbery and 4.7% of persons aged 15 years and over were victims of assault in the 12 months prior to April 2002. An estimated 0.4% of females aged 18 years and over reported that they were victims of sexual assault in the same time period.

Compared with the preceding survey (1998), small increases were found in the victimisation prevalence rate for assault (increasing from 4.3% in 1998 to 4.7% in 2002) and for total personal crimes (increasing from 4.8% in 1998 to 5.3% in 2002). Victimisation prevalence rates for household crimes remained fairly stable.

### 11.4 VICTIMS OF CRIME — 12 months prior to April 2002

Type of crime	Victims '000	Victimisation prevalence rate(a)	
		1998 %	2002 %
<b>Households</b>			
Break-in	(b)354.0	5.0	4.7
Attempted break-in	(b)254.6	3.2	3.4
Break-in/attempted break-in(c)	(b)553.5	7.6	7.4
Motor vehicle theft	(b)134.3	1.7	1.8
<b>Total(d)</b>	<b>(b)665.4</b>	<b>9.0</b>	<b>8.9</b>
<b>Persons</b>			
Robbery	(e)95.8	0.5	0.6
Assault	(e)717.9	4.3	4.7
Sexual assault	(f)28.3	0.4	0.4
<b>Total(g)</b>	<b>811.7</b>	<b>4.8</b>	<b>5.3</b>

(a) The number of victims of an offence in a given population as a percentage of that population. (b) Households. (c) Break-in/attempted break-in includes households that were victims of either a break-in or an attempted break-in, or both. Therefore the figures for break-in/attempted break-in are less than the sum of the break-in and attempted break-in figures. (d) Total household crimes is less than the sum of the components as households may be victims of more than one type of offence. (e) Persons aged 15 years and over. (f) Females aged 18 years and over. (g) Total personal crimes is less than the sum of the components as persons may be victims of more than one type of offence.

Source: *Crime and Safety, Australia, April 2002 (4509.0)*.

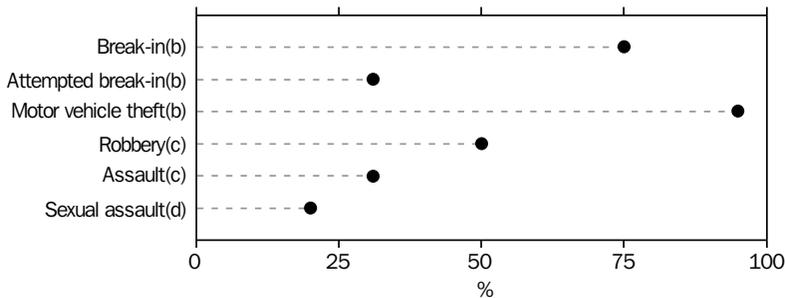
### Reporting to police

Crime is not always reported to the police, with many factors influencing whether or not a crime is reported. In particular, rates of reporting to the police vary depending on the type of offence, as shown in graph 11.5. People are much more likely to report crimes against property to the police (a requirement for any associated insurance claim) than crimes against the person (i.e. assault or sexual assault). In 2002, reporting rates varied from 20% for female victims of sexual assault to 95% for household victims of motor vehicle theft.

### Feelings of safety

Approximately 80% of people surveyed in 2002 indicated they felt safe or very safe when at home alone during the day, compared with 69% feeling this way after dark. Conversely, 4% of people felt unsafe or very unsafe when at home alone during the day, compared with 10% at home alone after dark (graph 11.6). Perceptions of safety varied between males and females, particularly after dark, when 78% of males compared with 61% of females felt safe or very safe when at home alone. Feelings of safety also varied according to age, with 42% of persons aged 15–19 years feeling very safe when at home alone during the day compared with 23% of persons aged 65 years and over.

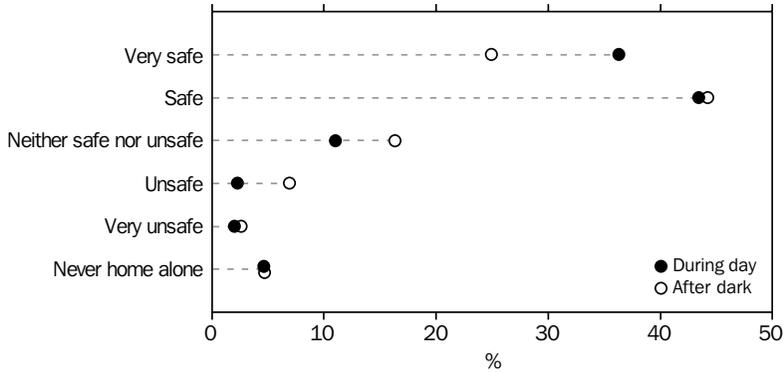
### 11.5 REPORTING RATE(a) TO POLICE OF MOST RECENT INCIDENT — 12 months prior to April 2002



(a) Of household/person victims. (b) Households. (c) Persons aged 15 years and over. (d) Females aged 18 years and over.

Source: *Crime and Safety, Australia, April 2002 (4509.0)*.

### 11.6 FEELINGS OF SAFETY WHEN AT HOME ALONE — April 2002



Source: *Crime and Safety, Australia, April 2002 (4509.0)*.

### Crimes recorded by police

The number of victims of crimes recorded by police decreased between 2001 and 2002 for almost all of the offence categories listed in table 11.7. Declines were particularly noticeable for those offence categories related to the taking of property (such as robbery, unlawful entry with intent and theft offences), as indicated by graph 11.8. The largest proportional decreases

were recorded for victims of armed robbery (30%), driving causing death (21%) and motor vehicle theft (19%). Increases were evident for four offence categories: manslaughter (29%), sexual assault (6%), assault (5%) and murder (2%).

Graph 11.8 shows the change in the number of victims of crime for selected offence categories.

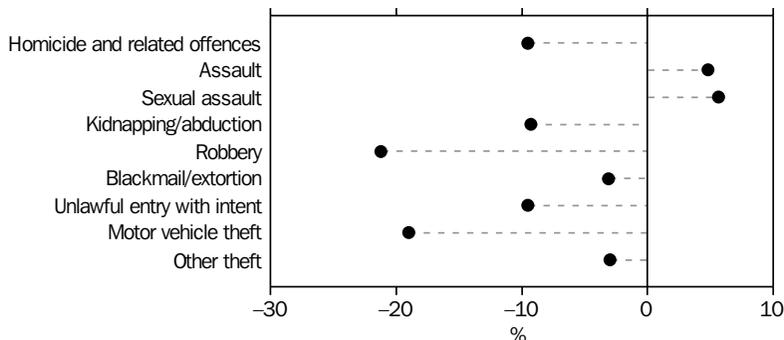
### 11.7 VICTIMS AND VICTIMISATION RATES, By selected offences recorded by police

	1997	1998	1999	2000	2001	2002
NUMBER						
Homicide and related offences	n.a.	995	970	1 020	1 064	963
Murder	321	285	343	315	311	318
Attempted murder	318	387	359	393	460	396
Manslaughter	39	47	43	48	35	45
Driving causing death(a)	n.a.	276	225	264	258	204
Assault	124 500	130 903	134 271	138 708	152 283	159 548
Sexual assault	14 353	14 336	14 104	15 759	16 897	17 850
Kidnapping/abduction	562	705	766	693	767	696
Robbery	21 305	23 801	22 606	23 336	26 591	20 961
Armed robbery	9 054	10 850	9 452	9 483	11 233	7 817
Unarmed robbery	12 251	12 951	13 154	13 853	15 358	13 144
Blackmail/extortion	360	272	255	257	355	344
Unlawful entry with intent	421 569	434 376	415 735	436 968	435 754	394 374
Property theft	332 525	339 512	322 983	(b)n.a.	325 220	292 769
Other	89 044	94 864	92 752	(b)n.a.	110 534	101 605
Motor vehicle theft(c)	130 138	131 587	129 552	138 912	139 894	113 389
Other theft	530 881	563 482	612 559	681 268	700 137	679 460
RATE PER 100,000 PERSONS						
Homicide and related offences	n.a.	5.3	5.1	5.3	5.5	4.9
Murder	1.7	1.5	1.8	1.6	1.6	1.6
Attempted murder	1.7	2.1	1.9	2.1	2.4	2.0
Manslaughter	0.2	0.3	0.2	0.3	0.2	0.2
Driving causing death(a)	n.a.	1.5	1.2	1.4	1.3	1.0
Assault	672.2	699.0	709.2	724.2	784.5	809.7
Sexual assault	77.5	76.6	74.5	82.3	87.1	90.6
Kidnapping/abduction	3.0	3.8	4.0	3.6	4.0	3.5
Robbery	115.0	127.1	119.4	121.8	137.0	106.4
Armed robbery	48.9	57.9	49.9	49.5	57.9	39.7
Unarmed robbery	66.1	69.2	69.5	72.3	79.1	66.7
Blackmail/extortion	1.9	1.5	1.3	1.3	1.8	1.7
Unlawful entry with intent	2 276.2	2 319.5	2 195.7	2 281.4	2 244.9	2 001.4
Property theft	1 795.4	1 812.9	1 705.8	(b)n.a.	1 675.5	1 485.8
Other	480.8	506.6	489.9	(b)n.a.	569.5	515.6
Motor vehicle theft(c)	702.7	702.7	684.2	725.2	720.7	575.4
Other theft	2 866.4	3 008.9	3 235.2	3 556.8	3 607.0	3 448.2

(a) A change in the recording practices for driving causing death offences in NSW resulted in incomplete counts for this offence in 1997. (b) A change in the legislation related to unlawful entry with intent (UEWI) offences in SA resulted in an inability to provide UEWI disaggregated into property theft and other for 2000. (c) Counts for motor vehicle theft prior to 1997 are not directly comparable with those for other years as WA included the theft of caravans and trailers in addition to motor vehicle theft.

Source: Recorded Crime — Victims, Australia, 2002 (4510.0).

### 11.8 VICTIMS(a), Change in number — 2001 to 2002



(a) The definition of a victim varies according to the category of the offence.

Source: Recorded Crime — Victims, Australia, 2002 (4510.0).

### Personal crime

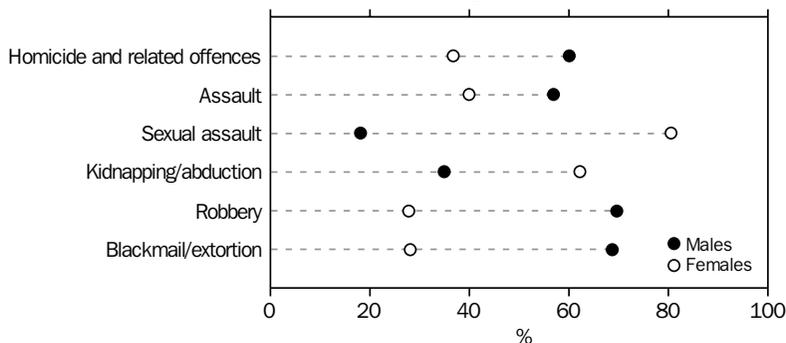
Based on reports to police, males were more likely than females to be victims of personal crime, with the exception of sexual assault and kidnapping/abduction (graph 11.9). The recorded sexual assault victimisation rate for females (144.5 female victims per 100,000 females) was more than four times the male victimisation rate (33.1 male victims per 100,000 males).

As table 11.7 shows, assault is the most common category of offence recorded against the person. Police recorded 159,548 victims of assault during 2002, a 5% increase over the previous year and 28% higher than in 1997. The assault victimisation rate in 2002 was 809.7 victims per 100,000

persons, up from 784.5 in 2001 and 672.2 per 100,000 persons in 1997. In fact, the 2002 recorded assault victimisation rate is the highest it has been since national assault statistics were first collected in 1995.

In 2002, the recorded sexual assault victimisation rate also reached its highest level since national sexual assault records began in 1993. The number of cases of sexual assault recorded in 2002 (17,850) represents an increase of 24% over the number recorded in 1997 (14,353). The 2002 sexual assault victimisation rate (90.6 victims per 100,000 persons) is 17% higher than the rate in 1997 (77.5 per 100,000 persons).

### 11.9 VICTIMS(a), Offence categories — 2002



(a) Refers to individual persons and does not include victims for whom sex was not specified.

Source: Recorded Crime — Victims, Australia, 2002 (4510.0).

In 2002, there were 318 victims of murder, representing a rate of 1.6 victims per 100,000 persons. The annual recorded counts for murder victims in Australia have fluctuated over the period 1997 to 2002, partly due to some specific incidents: in South Australia in 1999, where 12 bodies were discovered at Snowtown; in Western Australia in 1999, where 9 victims resulted from 2 family murder/suicide incidents; and in Queensland in 2000, where 15 victims of the fire at Childers were recorded. Despite this fluctuation in the number of murder victims, the rate has remained relatively stable over the last six years, ranging from 1.5 to 1.8 murder victims per 100,000 persons.

### **Property crime**

Unlawful entry with intent (UEWI) and other theft are the most frequently occurring property offences. The UEWI victimisation rate decreased by 12% between 1997 and 2002 to be 2,001 victims per 100,000 persons in 2002, and is the lowest rate since national records began in 1993. The 2002 rate for other theft was 3,448 victims

per 100,000 persons, 4% lower than in 2001, but representing a 20% increase since 1997. The victimisation rate for motor vehicle theft is at its lowest rate since 1993. The 2002 motor vehicle theft rate of 575 victims per 100,000 persons was 20% lower than in the previous year and 18% lower than in 1997.

### **Age and sex of victims**

Young people aged 15–24 years experienced the highest levels of recorded crime victimisation for the selected offence categories (table 11.10). Males experienced higher recorded assault rates across all age groups. For the offence category of assault, the rates for all 15–24 year olds were approximately twice the national average for all age groups. Robbery and sexual assault rates for the 15–19 year age group were more than three times the national average. The robbery rate for 20–24 year olds was more than twice the national average. Males and females aged 65 and over experienced the lowest level of crime victimisation for the offence categories of assault, sexual assault and kidnapping/abduction.

### 11.10 VICTIMISATION RATES(a) OF SELECTED CRIMES(b) — 2002

Age group (years)	Offence category							
	Murder	Attempted murder	Driving causing death	Assault	Sexual assault	Kidnapping/abduction	Robbery(c)	Blackmail/extortion(c)
<b>MALES</b>								
0–9	1.0	1.0	0.2	144.1	86.7	3.0	4.4	—
10–14	n.p.	0.4	0.6	714.9	90.1	3.9	126.8	0.6
15–19	2.4	3.1	3.4	1 793.0	64.1	7.1	526.6	3.0
20–24	3.2	6.2	4.0	1 934.8	30.7	6.9	336.9	3.4
25–34	2.7	5.4	1.3	1 651.4	19.6	2.1	153.3	2.4
35–44	2.8	3.8	1.1	1 064.9	13.9	0.9	82.3	3.2
45–54	1.9	1.6	1.0	655.4	4.9	1.1	61.6	3.0
55–64	1.3	0.3	0.3	352.7	2.8	0.3	39.6	1.3
65 and over	1.0	0.5	1.0	124.9	1.1	n.p.	20.3	0.8
All ages(d)	2.0	2.7	1.3	929.4	33.1	2.5	124.8	2.0
<b>FEMALES</b>								
0–9	0.3	0.6	n.p.	93.6	194.0	4.5	0.5	—
10–14	n.p.	n.p.	0.5	479.7	461.7	9.8	19.4	—
15–19	0.6	1.6	1.5	1 330.3	499.1	15.4	120.7	1.3
20–24	2.0	1.8	0.9	1 418.1	209.6	7.1	119.9	1.7
25–34	2.3	1.5	0.6	1 160.8	124.0	5.2	65.3	1.0
35–44	1.6	1.9	0.3	764.9	65.0	1.8	49.2	1.3
45–54	1.2	1.2	0.5	400.9	27.5	0.9	42.0	1.0
55–64	1.0	0.6	n.p.	169.3	11.1	0.5	34.4	0.8
65 and over	0.4	0.2	0.5	57.3	5.8	0.3	27.0	0.4
All ages(d)	1.2	1.2	0.5	640.7	144.5	4.4	49.1	0.8
<b>PERSONS</b>								
0–9	0.7	0.8	0.2	120.2	139.7	3.7	2.6	—
10–14	0.3	0.3	0.5	602.1	272.3	6.7	74.7	0.4
15–19	1.5	2.5	2.5	1 580.5	277.6	11.1	331.9	2.2
20–24	2.6	4.2	2.5	1 728.7	121.1	7.6	236.3	2.5
25–34	2.6	3.5	0.9	1 436.5	73.5	3.8	112.4	1.7
35–44	2.2	3.0	0.7	931.8	40.5	1.4	67.0	2.3
45–54	1.6	1.4	0.8	536.0	16.5	1.0	52.5	2.0
55–64	1.2	0.5	0.3	264.9	7.0	0.4	37.8	1.1
65 and over	0.7	0.3	0.7	88.4	3.7	0.2	24.4	0.6
All ages(d)	1.6	2.0	1.0	809.7	90.6	3.5	88.9	1.5

(a) Rate per 100,000 population. (b) As recorded by police forces in all jurisdictions. (c) Refers to individual person victims only and therefore does not include organisations as victims. (d) Includes victims for whom age and/or sex was not specified.

Source: Recorded Crime — Victims, Australia, 2002 (4510.0).

## Weapons used against victims of crime

Of the offences shown in table 11.11, a weapon was most likely to have been used in an attempted murder (75%) and murder (53%), and least likely in sexual assault offences (2%). With the exception of assault, a knife was the most common type of weapon used and was involved in 35% of attempted murders, 23% of murders and 19% of robberies. A firearm was involved in 22% of attempted murders, 13% of murders and 6% of robberies. The most common use of a syringe as a weapon was for the offence categories of robbery (350 victims) and assault (161 victims).

Between 1993 and 2002 the proportion of murders, attempted murders and robberies involving the use of a weapon decreased (graph 11.12). The proportion of murders involving the use of a weapon peaked in 1996 at 78% while the proportion of attempted murders involving the use of a weapon peaked in 1997 at 87%.

The proportion of robberies where a weapon was used has fluctuated from 36% in 1994 and 1995 to 46% in 1998. Since 1998, this proportion has declined to 37%. For those robberies that involved the use of a weapon, the proportion of offences involving firearms decreased from 37% in 1993 to 15% in 2002.

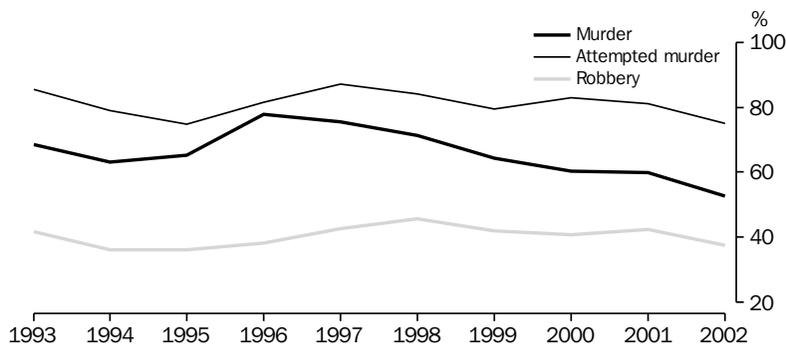
**11.11 VICTIMS(a), By use of weapon in commission of offence — 2002**

Weapon use	Offence category					
	Murder	Attempted murder	Assault	Sexual assault	Kidnapping/abduction	Robbery
NUMBER						
Weapon used						
Firearm	42	87	675	27	34	1 168
Knife	72	138	5 540	139	62	4 047
Syringe	—	—	161	4	3	350
Other weapon	38	53	12 834	92	24	1 290
<i>Total(b)</i>	<b>167</b>	<b>297</b>	<b>19 855</b>	<b>265</b>	<b>130</b>	<b>7 817</b>
No weapon used	151	99	139 693	17 585	566	13 144
<b>Total(c)</b>	<b>318</b>	<b>396</b>	<b>159 548</b>	<b>17 850</b>	<b>696</b>	<b>20 961</b>
PROPORTION (%)						
Weapon used						
Firearm	13.2	22.0	0.4	0.2	4.9	5.6
Knife	22.6	34.8	3.5	0.8	8.9	19.3
Syringe	—	—	0.1	—	0.4	1.7
Other weapon	11.9	13.4	8.0	0.5	3.4	6.2
<i>Total(b)</i>	<b>52.5</b>	<b>75.0</b>	<b>12.4</b>	<b>1.5</b>	<b>18.7</b>	<b>37.3</b>
No weapon used	47.5	25.0	87.6	98.5	81.3	62.7
<b>Total(c)</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) The definition of a victim varies according to the category of the offence. (b) Includes offences where a weapon was used but was not further defined. (c) Includes offences where weapon use was not known or not stated.

Source: *Recorded Crime — Victims, Australia, 2002 (4510.0)*.

### 11.12 VICTIMS(a), Weapon used in commission of offence



(a) Refers to individual persons.

Source: Recorded Crime — Victims, Australia, 2002 (4510.0).

## 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 cooperation between the Australian Government, the state and territory governments, the various police services and other law enforcement agencies. Included in these is the ACS 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.

As table 11.13 shows, in 2001–02 by far the largest category of drug arrests involved cannabis offences, with 55,494 arrests, or 75% of the national total. Queensland recorded almost a third of these arrests (17,068). The next largest category of arrests involved amphetamine offences ('speed'), with 8,063 offenders, or 11% of the national total.

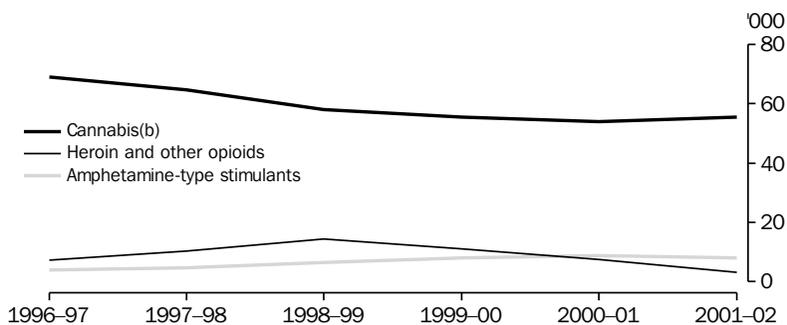
### 11.13 DRUG ARRESTS(a) — 2001–02

Drug type	NSW	Vic.	Qld	SA(b)	WA	Tas.	NT	ACT	Aust.
NUMBER									
Cannabis(c)	12 121	6 692	17 068	9 812	7 156	1 540	822	283	55 494
Cocaine	462	87	20	12	25	1	2	3	612
Heroin and other opioids	884	1 808	263	63	165	34	2	20	3 239
Amphetamine-type stimulants	2 043	1 608	2 007	475	1 725	89	56	60	8 063
Hallucinogens	26	32	12	12	7	1	3	—	93
Steroids	39	2	43	—	—	1	1	2	88
Other drugs(d)	1 048	982	3 313	176	451	237	1	10	6 218
<b>Total</b>	<b>16 623</b>	<b>11 211</b>	<b>22 726</b>	<b>10 550</b>	<b>9 529</b>	<b>1 903</b>	<b>887</b>	<b>378</b>	<b>73 807</b>
RATE PER 100,000 ADULT POPULATION									
Cannabis(c)	183.4	138.4	465.8	647.3	373.9	326.2	416.0	88.4	284.2
Cocaine	7.0	1.8	0.5	0.8	1.3	0.2	1.0	0.9	3.1
Heroin and other opioids	13.4	37.4	7.2	4.2	8.6	7.2	1.0	6.2	16.6
Amphetamine-type stimulants	30.9	33.2	54.8	31.3	90.1	18.9	28.3	18.7	41.3
Hallucinogens	0.4	0.7	0.3	0.8	0.4	0.2	1.5	—	0.5
Steroids	0.6	—	1.2	—	—	0.2	0.5	0.6	0.5
Other drugs(d)	15.9	20.3	90.4	11.6	23.6	50.2	0.5	3.1	31.8
<b>Total</b>	<b>251.5</b>	<b>231.8</b>	<b>620.2</b>	<b>696.0</b>	<b>497.9</b>	<b>403.1</b>	<b>448.8</b>	<b>118.0</b>	<b>377.9</b>

(a) The arrest data for each state and territory include AFP data. (b) SA data are not comparable to data published in previous years due to differences in extraction and validation methods. (c) The SA, NT and ACT figures include infringement notices. (d) 'Other drugs' includes phencyclidine (PCP or 'angel dust'), diazepam, lignocaine, benzocaine, dothiepin, flunitrazepam, other prescription drugs, and any drug not included in the other categories.

Source: Australian Crime Commission, 'Australian Illicit Drug Report, 2001–02'.

## 11.14 SELECTED DRUG ARRESTS(a)



(a) The arrest data for each state and territory include AFP. (b) SA, NT and ACT figures include infringement notices.

Source: Australian Crime Commission, 'Australian Illicit Drug Report, 2001-02'.

While the number of cannabis arrests and infringement notices declined in the period 1996-97 through to 2000-01, the figures for 2001-02 showed a small increase. The upward trend in arrests associated with amphetamines peaked in 2000-01, before falling marginally in 2001-02. Heroin arrests peaked during 1998-99, before falling from this high point: 3,239 persons were arrested in 2001-02 compared to 7,396 in 2000-01, a 56% decrease (graph 11.14).

Information on the widespread problems arising from drug abuse in Australia, and on how these problems are being approached, is presented in the *Australian Illicit Drug Report* produced by the ACC.

### 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. The status of investigations includes:

- 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
- 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 caution).

In 2002, a higher proportion of offences against the person (murder, attempted murder, assault, sexual assault, kidnapping/abduction and robbery) reached a finalised status within 30 days of initiation of the investigation than was the case for offences against property (UEWI and motor vehicle theft offences). Similarly, the proportion of offenders proceeded against was higher for offences against the person than for property offences (table 11.15). Almost half of all finalised sexual assault investigations resulted in no offender being proceeded against.

### 11.15 VICTIMS OF RECORDED CRIME, By outcome of investigations at 30 days — 2002(a)

Investigation status	Murder %	Attempted murder %	Assault %	Sexual assault %	Kidnapping/ abduction %	Robbery(b) %	UEWI(c) %	Motor vehicle theft %
<i>Investigation not finalised</i>	39.9	36.9	42.2	62.7	58.9	79.4	92.8	89.3
Investigation finalised								
No offender proceeded against	6.9	6.8	12.7	18.1	14.1	5.4	1.4	2.8
Offender proceeded against	53.1	56.3	45.0	19.2	27.0	15.2	5.8	7.8
<i>Total</i>	60.1	63.1	57.8	37.3	41.1	20.6	7.2	10.7
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For selected offences recorded by police during 1 January–31 December 2002. (b) Robbery includes both armed and unarmed robbery. (c) Unlawful entry with intent.

Source: *Recorded Crime — Victims, Australia, 2002 (4510.0)*.

## Courts

Many courts and court-related tribunals operate throughout Australia. 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 who is alleged to be liable.

There are many other types of courts and tribunals in operation, commonly referred to as specialist courts and tribunals, that were created because the standard courts were not the best way to address certain types of matters. Examples of these include the Coroners' Courts, Family Court, Federal Magistrates' Court, Drug Courts, Workers' Compensation Commissions/Tribunals, Industrial Relations Commission, Small Claims Tribunals, Administrative Appeals Tribunal and Residential Tenancy Tribunal.

Courts and tribunals tend to be arranged in a hierarchy (diagram 11.16), with the majority of less serious matters being heard before magistrates and more serious matters being 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 amount being sought in compensation. A court's or tribunal's ability to deal with either 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 right of appeals. Criminal appeals resulting from the Magistrates' Court can be appealed at either 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.



## **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 by 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.

The courts in Australia are arranged hierarchically. The lowest level of criminal court is the Magistrates' Court or Court of Summary Jurisdiction. The majority of all 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. Relatively minor offences such as property damage or minor road traffic offences can be dealt with in this way. More serious offences are dealt with by the higher court levels.

All states and territories have a Supreme Court that can deal with all criminal matters. The larger jurisdictions also have an intermediate level of court, known as the District or County Court, that deals with the majority of serious offences. The Supreme Courts and Intermediate Courts are collectively referred to as the Higher Courts.

All offences 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.

A defendant proven guilty in a criminal matter is entitled to appeal against the conviction or against the severity of 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 ways in which they deal with 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. In Australia, the highest court of appeal for all jurisdictions is the High Court of Australia.

## **National criminal courts statistics**

As well as differences across the states and territories in terms of legislation, court procedures and the type of matters dealt with, there are also variations in data management practices and differences in the information that is collected as part of court processes. The net result of such differences is a lack of readily available nationally comparable data on court activities and the characteristics of people whose matters are handled by the various courts. The aim of the national criminal courts statistics collection undertaken by the ABS is to redress this situation progressively through the application of national data standards and counting rules.

## **Higher Criminal Courts finalisations**

The number of finalisations in the Higher Criminal Courts decreased by less than 1% to 17,997 between 2000–01 and 2001–02. This was the first decrease in finalisations recorded for this collection since 1996–97 (table 11.17).

### 11.17 HIGHER CRIMINAL COURTS FINALISATIONS

	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
SUPREME COURT						
New South Wales	90	85	123	127	146	136
Victoria	72	75	100	115	92	91
Queensland	743	813	776	856	785	754
South Australia	121	114	69	74	70	51
Western Australia	298	263	238	213	226	192
Tasmania	322	337	611	749	441	486
Northern Territory	206	311	288	268	404	262
Australian Capital Territory	150	138	161	190	205	171
<b>Australia</b>	<b>2 002</b>	<b>2 136</b>	<b>2 366</b>	<b>2 592</b>	<b>2 369</b>	<b>2 143</b>
INTERMEDIATE COURT(a)						
New South Wales	3 494	3 876	4 063	4 173	3 771	3 518
Victoria	1 559	1 662	1 877	2 162	2 055	1 902
Queensland	5 521	5 664	6 819	6 523	6 147	6 476
South Australia	1 178	890	874	862	858	1 080
Western Australia	1 930	2 455	2 655	2 900	2 829	2 878
<b>Australia</b>	<b>13 682</b>	<b>14 547</b>	<b>16 288</b>	<b>16 620</b>	<b>15 660</b>	<b>15 854</b>
TOTAL HIGHER COURTS						
New South Wales	3 584	3 961	4 186	4 300	3 917	3 654
Victoria	1 631	1 737	1 977	2 277	2 147	1 993
Queensland	6 264	6 477	7 595	7 379	6 932	7 230
South Australia	1 299	1 004	943	936	928	1 131
Western Australia	2 228	2 718	2 893	3 113	3 055	3 070
Tasmania	322	337	611	749	441	486
Northern Territory	206	311	288	268	404	262
Australian Capital Territory	150	138	161	190	205	171
<b>Australia</b>	<b>15 684</b>	<b>16 683</b>	<b>18 654</b>	<b>19 212</b>	<b>18 029</b>	<b>17 997</b>

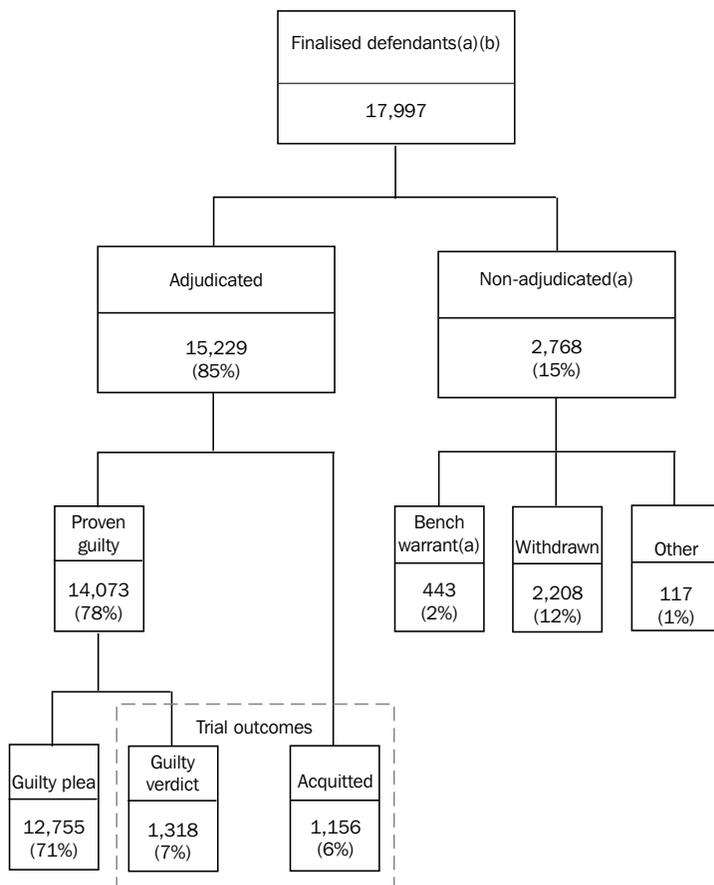
(a) There is no Intermediate Court in Tas., NT or ACT.

Source: *Criminal Courts, Australia, 2001-02* (4513.0).

Of the 17,997 defendants finalised in the Higher Criminal Courts during 2001-02, 78% were proven guilty (i.e. pleaded guilty or were declared guilty at trial) and 6% were acquitted (diagram 11.18). Of the 14,073 defendants who were proven guilty, 91% pleaded guilty and the other 9% were declared guilty at trial. Combined, these two

finalisation outcomes represent defendants who had their cases adjudicated by the courts (85% or 15,229). The remaining 15% (2,768) of defendants were finalised by a non-adjudicated method. This includes charges withdrawn by the prosecution, the defendant absconding or the defendant dying.

## 11.18 HIGHER CRIMINAL COURTS FINALISATIONS — 2001–02



(a) These totals exclude Qld defendants finalised by a bench warrant being issued.

(b) All percentages are calculated as a proportion of finalised defendants and are subject to rounding.

Source: *Criminal Courts, Australia, 2001–02* (4513.0).

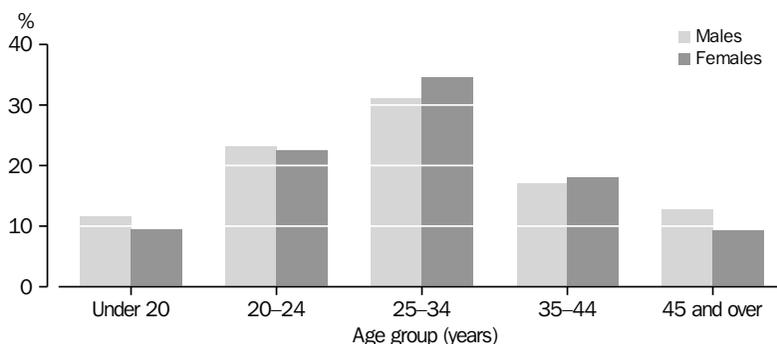
### Adjudicated defendants

Of adjudicated defendants, guilty pleas accounted for 84%. The remaining 16% were subject to a trial outcome, of which over half were found guilty.

### Age and sex

Approximately one-third of both male and female adjudicated defendants in the Higher Criminal Courts were aged 25–34 years (graph 11.19). The median age of defendants finalised by adjudication was 29 years (table 11.20). The majority (55%) of adjudicated defendants were aged between 20 and 34 years.

### 11.19 PROPORTION OF ADJUDICATED DEFENDANTS(a), By age group — 2001–02



(a) Excludes defendants who are organisations and defendants whose sex is unknown.

Source: *Criminal Courts, Australia, 2001–02 (4513.0)*.

### Principal offence

Five principal offence categories accounted for the majority of the adjudicated defendants in Australia's Higher Criminal Courts during 2001–02 (table 11.20). These were: acts intending to cause injury (including assault) (20%); UEWI (including burglary and break and enter) (15%); offences related to robbery and extortion (13%); illicit drug offences (13%); and offences related to sexual assault (10%). There were 10,934 defendants adjudicated by the Higher Criminal Courts with a principal offence in one of these five offence categories.

For both male and female defendants, the most prevalent principal offence category for which they were adjudicated was acts intending to cause injury (21% of males and 19% of females). Males

were more likely than females to have been adjudicated for a principal offence of sexual assault or UEWI, while females were more likely than males to have been adjudicated for a principal offence of deception or illicit drug offences. Males and females were approximately equally likely to have been adjudicated for homicide and related offences (graph 11.21).

The median age of adjudicated defendants displayed considerable variation across the principal offence categories. Defendants with a principal offence related to sexual assault had a median age of 40 years, while defendants with a principal offence related to robbery and extortion or UEWI (including break and enter) had a median age of 24 years.

**11.20 TOTAL HIGHER COURTS ADJUDICATED DEFENDANTS, Principal offence by age group — 2001–02**

ASOC Division(a)	Age group (years)						Total	Median age (years)
	Under 20	20–24	25–34	35–44	45 and over	Unknown		
NUMBER (no.)								
<b>Persons</b>								
Homicide and related offences	27	111	135	103	73	14	463	31.4
Acts intended to cause injury	314	677	1 133	548	273	158	3 103	28.9
Sexual assault and related offences	68	146	356	388	563	64	1 585	39.7
Dangerous or negligent acts endangering persons	39	128	138	49	31	18	403	26.7
Abduction and related offences	11	28	39	21	9	2	110	28.7
Robbery, extortion and related offences	414	697	626	181	46	58	2 022	23.6
Unlawful entry with intent/burglary, break and enter	427	738	714	199	42	86	2 206	24.1
Theft and related offences	134	224	251	114	58	36	817	26.1
Deception and related offences	44	153	336	253	230	90	1 106	34.2
Illicit drug offences	54	314	684	545	383	35	2 015	33.9
Weapons and explosives offences	4	10	17	12	10	7	60	31.5
Property damage and environmental pollution	73	102	100	49	19	24	367	24.8
Public order offences	32	41	41	35	39	7	195	30.4
Road traffic and motor vehicle regulatory offences	1	—	—	—	—	—	1	n.p.
Offences against justice procedures, government security and government operations	24	64	93	54	32	13	280	29.4
Miscellaneous offences	35	58	104	62	53	34	346	30.7
Not able to be determined(b)	22	24	42	23	19	11	141	28.3
<b>Total</b>	<b>1 723</b>	<b>3 515</b>	<b>4 809</b>	<b>2 636</b>	<b>1 880</b>	<b>657</b>	<b>15 220</b>	<b>28.7</b>
Organisations/unknown	—	1	—	1	4	3	9	—
<b>Total defendants</b>	<b>1 723</b>	<b>3 516</b>	<b>4 809</b>	<b>2 637</b>	<b>1 884</b>	<b>660</b>	<b>15 229</b>	<b>28.7</b>
PROPORTION (%)								
<b>Persons</b>								
Homicide and related offences	1.6	3.2	2.8	3.9	3.9	2.1	3.0	..
Acts intended to cause injury	18.2	19.3	23.6	20.8	14.5	24.0	20.4	..
Sexual assault and related offences	3.9	4.2	7.4	14.7	29.9	9.7	10.4	..
Dangerous or negligent acts endangering persons	2.3	3.6	2.9	1.9	1.6	2.7	2.6	..
Abduction and related offences	0.6	0.8	0.8	0.8	0.5	0.3	0.7	..
Robbery, extortion and related offences	24.0	19.8	13.0	6.9	2.4	8.8	13.3	..
Unlawful entry with intent/burglary, break and enter	24.8	21.0	14.8	7.5	2.2	13.1	14.5	..
Theft and related offences	7.8	6.4	5.2	4.3	3.1	5.5	5.4	..
Deception and related offences	2.6	4.4	7.0	9.6	12.2	13.7	7.3	..
Illicit drug offences	3.1	8.9	14.2	20.7	20.4	5.3	13.2	..
Weapons and explosives offences	0.2	0.3	0.4	0.5	0.5	1.1	0.4	..
Property damage and environmental pollution	4.2	2.9	2.1	1.9	1.0	3.7	2.4	..
Public order offences	1.9	1.2	0.9	1.3	2.1	1.1	1.3	..
Road traffic and motor vehicle regulatory offences	0.1	—	—	—	—	—	—	..
Offences against justice procedures, government security and government operations	1.4	1.8	1.9	2.0	1.7	2.0	1.8	..
Miscellaneous offences	2.0	1.7	2.2	2.4	2.8	5.2	2.3	..
Not able to be determined	1.3	0.7	0.9	0.9	1.0	1.7	0.9	..
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>..</b>

(a) Australian Standard Offence Classification. (b) Defendants for whom offence data were missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia, 2001–02 (4513.0)*.

### 11.21 ADJUDICATED DEFENDANTS, By selected principal offence — 2001–02



Source: *Criminal Courts, Australia, 2001–02 (4513.0)*.

### Principal offence duration

Of all adjudicated defendants, those who received a guilty verdict had a median duration (from initiation to finalisation in the Higher Criminal

Courts) of 47 weeks, and those who were acquitted at trial had a median duration of 37 weeks (table 11.22). For those who pleaded guilty the median duration was 17 weeks.

### 11.22 HIGHER COURTS ADJUDICATED DEFENDANTS, Median duration to finalisation(a) — 2001–02

Principal offence	Adjudication type			Total
	Acquitted	Guilty verdict	Guilty plea	
Homicide and related offences	37.9	47.1	28.9	37.9
Acts intended to cause injury	32.9	47.0	19.4	21.9
Sexual assault and related offences	38.1	45.1	20.8	27.1
Dangerous or negligent acts endangering persons	25.3	44.9	16.1	17.4
Abduction and related offences	52.1	44.7	23.0	27.4
Robbery, extortion and related offences	25.4	42.6	15.1	16.4
Unlawful entry with intent/burglary, break and enter	52.0	50.1	11.3	12.0
Theft and related offences	31.5	48.3	17.0	18.2
Deception and related offences	55.0	59.6	18.1	20.1
Illicit drug offences	32.9	51.6	20.1	23.3
Weapons and explosives offences	n.p.	n.p.	21.3	22.9
Property damage and environmental pollution	37.4	56.9	13.8	14.9
Public order offences	n.p.	n.p.	16.9	21.0
Road traffic and motor vehicle regulatory offences	—	—	n.p.	n.p.
Offences against justice procedures, government security and government operations	55.7	45.7	10.7	13.2
Miscellaneous offences	38.9	44.9	14.5	16.4
Not able to be determined(b)	43.9	43.5	14.8	21.6
<b>Total</b>	<b>37.1</b>	<b>47.1</b>	<b>16.6</b>	<b>19.6</b>

(a) Number of weeks from date of initiation to finalisation. (b) Defendants for whom offence data were missing or a principal offence could not be determined.

Source: *Criminal Courts, Australia, 2001–02 (4513.0)*.

## Change in plea

The initial plea entered by the defendant has implications for the workload of the Higher Criminal Courts and the length of time a defendant remains active within the court system. An initial plea of 'not guilty' may lead to a trial while an initial plea of 'guilty' will negate the need for a trial and result in a sentencing hearing.

Of the defendants finalised by adjudication (excluding Queensland), 55% (5,038) entered the Higher Criminal Courts with a not guilty plea and

were therefore expected to be tried (table 11.23). Of the defendants who initially pleaded not guilty, 59% (2,994) changed their plea to guilty during proceedings in the Higher Criminal Courts.

In general, defendants with an initial plea of guilty had a shorter duration than defendants with an initial plea of not guilty and final plea of guilty. Defendants entering an initial plea of not guilty and final plea of guilty in turn had a shorter duration than defendants with an initial and final plea of not guilty.

### 11.23 HIGHER COURTS ADJUDICATED DEFENDANTS, Initial and final plea status — 2001-02

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
NUMBER (no.)									
No change in plea									
Not guilty	770	348	n.a.	179	594	104	22	27	n.a.
Guilty	1 292	934	n.a.	196	1 513	81	21	57	n.a.
Total	2 062	1 282	n.a.	375	2 107	185	43	84	n.a.
Change in plea									
Not guilty to guilty	1 090	613	n.a.	426	462	168	198	37	n.a.
Guilty to not guilty	15	—	n.a.	1	16	—	—	—	n.a.
Total	1 105	613	n.a.	427	478	168	198	37	n.a.
<b>Total</b>	<b>3 167</b>	<b>1 895</b>	<b>6 065</b>	<b>802</b>	<b>2 585</b>	<b>353</b>	<b>241</b>	<b>121</b>	<b>15 229</b>
PROPORTION (%)									
No change in plea									
Not guilty	24.3	18.4	n.a.	22.3	23.0	29.5	9.1	22.3	n.a.
Guilty	40.8	49.3	n.a.	24.4	58.5	22.9	8.7	47.1	n.a.
Total	65.1	67.7	n.a.	46.8	81.5	52.4	17.8	69.4	n.a.
Change in plea									
Not guilty to guilty	34.4	32.3	n.a.	53.1	17.9	47.6	82.2	30.6	n.a.
Guilty to not guilty	0.5	—	n.a.	0.1	0.6	—	—	—	n.a.
Total	34.9	32.3	n.a.	53.2	18.5	47.6	82.2	30.6	n.a.
<b>Total</b>	<b>100.0</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
MEDIAN DURATION (weeks)(a)									
No change in plea									
Not guilty	35.4	43.9	n.a.	42.0	60.0	36.6	37.6	40.1	n.a.
Guilty	14.0	13.9	n.a.	12.4	8.9	6.6	6.6	14.9	n.a.
Total	18.6	17.7	n.a.	23.7	11.1	14.9	22.3	18.5	n.a.
Change in plea									
Not guilty to guilty	26.4	34.0	n.a.	24.1	23.5	19.1	16.9	70.0	n.a.
Guilty to not guilty	26.0	—	n.a.	n.p.	61.4	—	—	—	n.a.
Total	26.4	34.0	n.a.	24.0	24.9	19.1	16.9	70.0	n.a.
<b>Total</b>	<b>21.4</b>	<b>23.3</b>	<b>19.3</b>	<b>23.8</b>	<b>12.3</b>	<b>17.6</b>	<b>17.0</b>	<b>34.9</b>	<b>19.6</b>

(a) From date of initiation to finalisation.

Source: *Criminal Courts, Australia, 2001-02* (4513.0).

## Custodial orders

Just over half (54%) of defendants proven guilty received custodial orders to be served in a correctional facility (i.e. custodial orders excluding fully suspended sentences) (table 11.24).

## Non-custodial orders

Nationally, 28% of defendants proven guilty received a principal sentence type of a non-custodial order (includes community supervision/work orders, monetary orders and other non-custodial orders) (table 11.24). The most common non-custodial sentence type was a community supervision/work order (71% of non-custodial sentences).

### 11.24 HIGHER COURTS DEFENDANTS PROVEN GUILTY, Principal sentence type — 2001–02

	Age group (years)					Unknown(a)	Total(a)	Median age (years)
	Under 20	20–24	25–34	35–44	45 and over			
NUMBER (no.)								
Custodial orders								
Custody in corrections	689	1 771	2 576	1 343	922	275	7 576	29.0
Custody in the community	7	19	20	11	6	—	63	27.0
Fully suspended sentences	200	498	800	477	347	126	2 448	30.5
Total(b)	897	2 297	3 408	1 845	1 295	401	10 143	29.4
Non-custodial orders								
Community supervision work/orders	685	799	667	258	156	167	2 732	23.1
Monetary orders	34	114	194	129	96	28	595	31.5
Other non-custodial orders	73	112	157	109	68	28	547	29.4
Total	792	1 025	1 018	496	320	223	3 874	25.0
Unknown sentence type	4	4	19	17	11	1	56	35.6
<b>Total</b>	<b>1 693</b>	<b>3 326</b>	<b>4 445</b>	<b>2 358</b>	<b>1 626</b>	<b>625</b>	<b>14 073</b>	<b>28.3</b>
PROPORTION (%)								
Custodial orders								
Custody in corrections	40.7	53.2	58.0	57.0	56.7	44.0	53.8	..
Custody in the community	0.4	0.6	0.4	0.5	0.4	—	0.4	..
Fully suspended sentences	11.8	15.0	18.0	20.2	21.3	20.2	17.4	..
Total(b)	53.0	69.1	76.7	78.2	79.6	64.2	72.1	..
Non-custodial orders								
Community supervision work/orders	40.5	24.0	15.0	10.9	9.6	26.7	19.4	..
Monetary orders	2.0	3.4	4.4	5.5	5.9	4.5	4.2	..
Other non-custodial orders	4.3	3.4	3.5	4.6	4.2	4.5	3.9	..
Total	46.8	30.8	22.9	21.0	19.7	35.7	27.5	..
Unknown sentence type	0.2	0.1	0.4	0.7	0.7	0.2	0.4	..
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>..</b>

(a) Includes organisations and persons with unknown sex. (b) Includes defendants with custodial orders not further defined.

Source: *Criminal Courts, Australia, 2001–02 (4513.0)*.

For both males and females, the number of defendants who received custodial orders to be served in a correctional facility (i.e. custodial orders excluding fully suspended sentences) was greatest for defendants aged 25–34 years (graph 11.25).

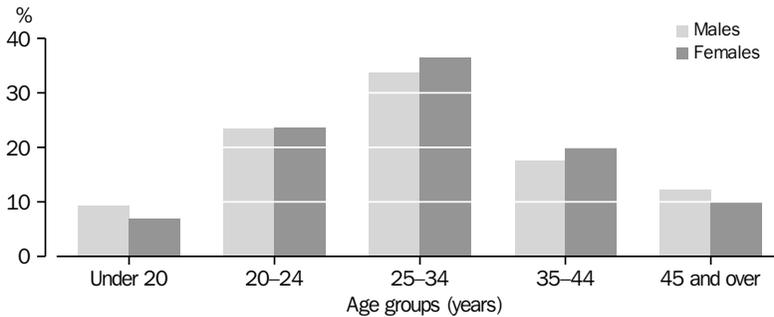
### Total criminal cases

Table 11.26 shows the total number of criminal cases handled in the courts of Australia, including appeal and non-appeal cases. Of all the criminal cases filed in Australia during 2001–02, 95% were filed in the Magistrates' Courts, with New South Wales and Queensland being the largest contributors to the national total. A large proportion of cases in the Magistrates' Court in most states and territories are minor traffic matters.

## Corrective services

Corrective services agencies are responsible for administering those penalties handed down by the criminal courts that require some form of supervision or custody of the offender. This may include imprisonment on either a full-time or part-time basis, community service and other forms of supervised work, home detention, or good behaviour bonds under supervision. Most persons for whom corrective services have responsibility have received a sentence from a criminal court, but some persons have been given orders pending judgement or sentencing (e.g. unsentenced prisoners).

**11.25 PROPORTION OF DEFENDANTS RECEIVING CUSTODIAL ORDERS(a),  
By age group — 2001–02**



(a) Excluding fully suspended sentences.

Source: *Criminal Courts, Australia, 2001–02 (4513.0)*.

**11.26 CRIMINAL COURT FINALISATIONS — 2001–02(a)**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.(b)
Court level	'000	'000	'000	'000	'000	'000	'000	'000	'000
Supreme Court	1.1	0.6	1.0	0.4	0.4	0.5	0.3	0.2	4.5
District/County Court	9.0	3.0	8.0	1.0	3.0	..	..	..	25.0
Magistrates' Court(c)	133.0	110.0	144.0	55.0	60.0	39.0	12.0	5.0	557.0
<b>Total</b>	<b>143.1</b>	<b>113.6</b>	<b>153.0</b>	<b>56.4</b>	<b>63.4</b>	<b>39.5</b>	<b>12.3</b>	<b>5.2</b>	<b>586.5</b>

(a) Lodgments do not equal finalisations in any given year because matters lodged in one year may be finalised in the next.

(b) Australian totals may not add as a result of rounding. (c) In Tas., the number of lodgements declined by between 8,000 and 10,000 matters due to information technology difficulties experienced by a major court user. This has had a considerable flow on effect on finalisations. The matters lodged by this user are usually resolved within the year of lodgement. It is estimated, therefore, that finalisations are affected by between 8,000 and 10,000 matters.

Source: *Steering Committee for the Review of Commonwealth/State Service Provision, 'Report on Government Services 2003'*.

All states and territories operate prisons and other types of corrective services. Separate provisions exist in each state and territory for dealing with juvenile offenders. The majority of convicted adult prisoners from the Australian Capital Territory serve their sentences in New South Wales prisons, but local provision is made for the custody of unsentenced prisoners and periodic detainees, and for those under the supervision of community corrections (e.g. probation and parole). 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 or territory agencies for correctional purposes.

During 2001–02, 12 of the 97 prisons in Australia were privately operated facilities. These prisons operate in conjunction with state operated prisons and are monitored by the corrective services authorities in a similar manner to state operated prisons.

Corrective services oversee prisons, periodic detention and community-based corrections. Community-based corrections includes restricted movement, reparation (fine option and community service) and supervision (parole, bail and sentenced probation).

## Prisoners in Australia

The National Prisoner Census, conducted annually on the night of 30 June, counts all offenders who are in the legal custody of adult corrective services, including periodic detainees in New South Wales and the Australian Capital Territory. 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 persons serving short sentences for less serious offences.

The total prison population in Australia has increased by 45% from 15,559 in 1992 to 22,492 in 2002. There were 21,008 male prisoners on 30 June 2002, comprising 93% of the total prisoner population (table 11.27). The median age of prisoners in Australia was 31 years for males and 30 years for females. The majority of prisoners in Australia are young adult males, with 56% of all prisoners being males aged between 20 and 34 years (graph 11.28). New South Wales had the highest proportion of prisoners (39%), followed by Queensland (21%).

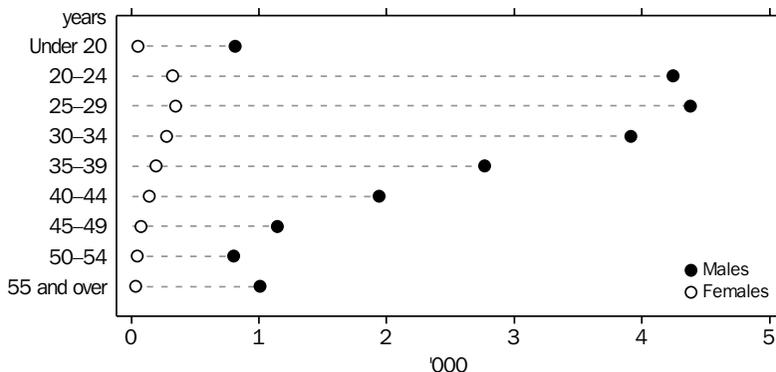
**11.27 PRISONERS, By jurisdiction — 30 June 2002**

	Males no.	Females no.	All prisoners no.	Males rate(a)	Females rate(a)	All prisoners rate(a)
New South Wales(b)(c)	8 154	605	8 759	318.4	22.9	168.0
Victoria	3 286	254	3 540	178.4	13.0	93.4
Queensland	4 433	288	4 721	319.7	20.1	167.3
South Australia	1 377	84	1 461	236.2	13.8	122.7
Western Australia	2 606	194	2 800	356.6	26.2	190.2
Tasmania	397	30	427	225.7	16.1	118.1
Northern Territory	646	21	667	862.4	30.8	466.2
ACT in ACT	109	8	117	..	..	..
ACT in NSW(b)	116	7	123	..	..	..
ACT total(c)	225	15	240	185.1	11.8	96.3
<b>Australia(d)</b>	<b>21 008</b>	<b>1 484</b>	<b>22 492</b>	<b>282.4</b>	<b>19.2</b>	<b>148.3</b>

(a) Rate per 100,000 adult population. (b) The majority of full-time prisoners sentenced in the ACT are held in NSW prisons and are included in the counts for NSW. (c) ACT prisoners who were held in NSW prisons have been excluded from the NSW rate and are included in the ACT rate. (d) ACT in NSW figures are a subset of the NSW figures and are not separately counted in the Australian totals.

Source: *Prisoners in Australia, 2002* (4517.0).

**11.28 PRISONERS, By age group and sex — 30 June 2002**

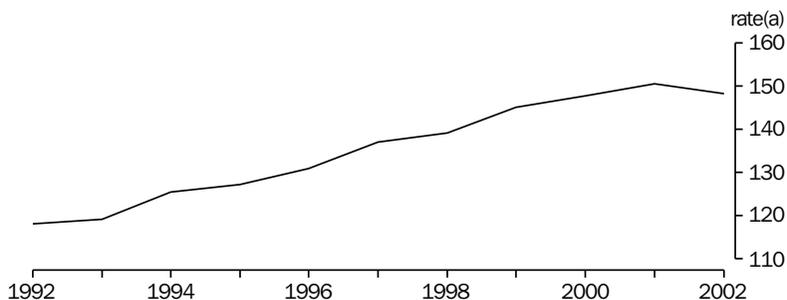


Source: *Prisoners in Australia, 2002* (4517.0).

Some of the factors that have influenced the size of the prison population over this period include: legislative changes affecting the length of time prisoners spend in prison; the abolition of sentence-reducing mechanisms such as remission; significant court delays leading to an increase in unsentenced prisoners in some jurisdictions (the proportion of prisoners who were unsentenced increased from 12% in 1992 to 20% in 2002); an increase in Australia's population; and an increase in the amount of recorded crime. Graph 11.29

shows a time series of the rate of adult prisoners per 100,000 adult population. Nationally, the imprisonment rate was 148 per 100,000 adult population at 30 June 2002. The imprisonment rates vary noticeably between jurisdictions, with the Northern Territory recording the highest imprisonment rate of 466 per 100,000 adult population in 2002 (graph 11.30), substantially greater than the next highest rate of 190 prisoners per 100,000 adult population in Western Australia, and well above the national rate.

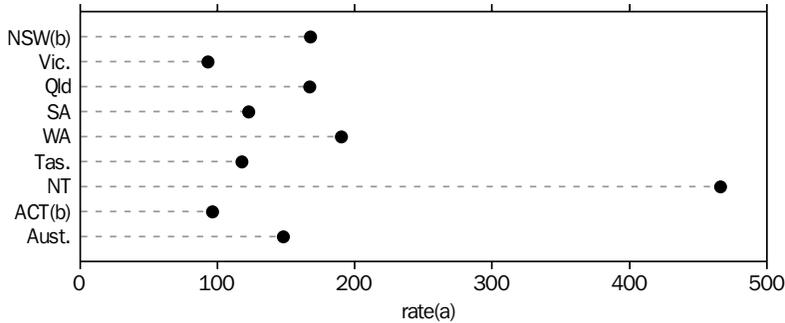
**11.29 IMPRISONMENT RATE(a)**



(a) The data are a snapshot of the prison population as at 30 June each year. The rate is per 100,000 adult population.

Source: 1992-93: *Australian Institute of Criminology*; 1994-2002: *Prisoners in Australia, 2002* (4517.0).

### 11.30 IMPRISONMENT RATE(a), By jurisdictions — 30 June 2002



(a) Rate per 100,000 adult population. (b) ACT prisoners who were held in NSW prisons have been excluded from the NSW rate and included in the ACT rate.

Source: *Prisoners in Australia, 2002 (4517.0)*.

## Indigenous prisoners

At 30 June 2002 there were 4,494 Indigenous prisoners in Australia (20% of the Australian prisoner population) with a national rate of imprisonment for Indigenous persons of about 1,800 per 100,000 adult Indigenous population (table 11.31). Western Australia recorded the highest imprisonment rate (approximately 2,400 Indigenous persons per 100,000 adult Indigenous population) followed by New South Wales (approximately 2,100). Nationally, the Indigenous rate of imprisonment was approximately 15 times that of the non-Indigenous population.

While the highest Indigenous imprisonment rate of approximately 2,400 prisoners per 100,000 adult Indigenous population was recorded in

Western Australia, this was well below the 3,000 prisoners per 100,000 adult Indigenous population recorded a year earlier in that state. During 2002, the following factors in Western Australia impacted on the prisoner population: an increase in the acquittal and dismissal rates in courts; greater use by the courts of suspended imprisonment and community orders as penalties; and a decrease in the breach rate for early release orders. The impact of these factors was proportionally greater on the number of Indigenous prisoners who tend to be convicted of offences that attract shorter sentences.

### 11.31 INDIGENOUS IMPRISONMENT — 30 June 2002

	no.	rate(a)	ratio(b)
New South Wales(c)(d)	1 503	2 146.2	15.4
Victoria	160	1 109.6	12.5
Queensland	1 183	1 733.5	13.5
South Australia	243	1 703.1	19.1
Western Australia	872	2 413.9	18.0
Tasmania	61	621.6	6.0
Northern Territory	459	1 340.0	7.0
ACT in ACT	13	..	..
ACT in NSW(c)	12	..	..
ACT total(d)	25	1 133.8	13.2
<b>Australia(e)</b>	<b>4 494</b>	<b>1 806.3</b>	<b>15.2</b>

(a) Rate of Indigenous prisoners per 100,000 adult Indigenous population. (b) Ratio of Indigenous to non-Indigenous rates of imprisonment. (c) The majority of full-time prisoners sentenced in the ACT are held in NSW prisons and are included in the counts for NSW. (d) ACT prisoners who were held in NSW prisons have been excluded from the NSW rate and included in the ACT rate. (e) ACT in NSW figures are a subset of the NSW figures and are not separately counted in the Australian totals.

Source: *Prisoners in Australia, 2002 (4517.0)*.

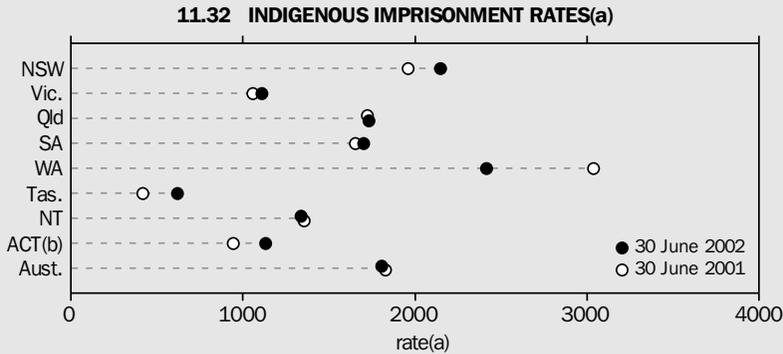
The 20% decrease in Western Australia, along with a 1% decrease in the Northern Territory, offset increases in all other states, resulting in a slight overall (1%) decrease in the national Indigenous imprisonment rate (graph 11.32).

### 10-year comparison

In 1992, 14% of all male prisoners were Indigenous and 18% of all female prisoners were Indigenous. By 2002 this proportion had risen to

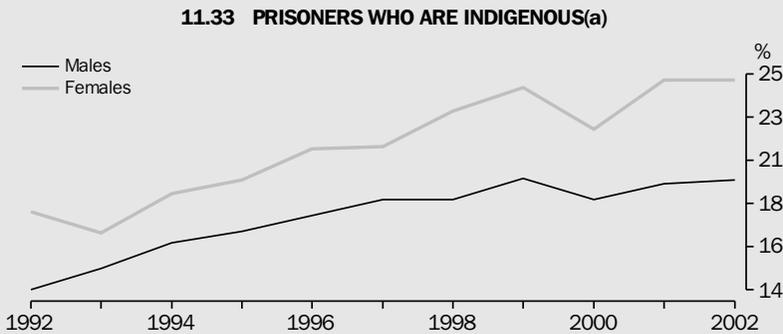
20% for Indigenous males and 25% for Indigenous females (graph 11.33), even though Indigenous persons were estimated to comprise just over 2% of the total Australian population in 2002.

Over the 10 years to 2002, the increase in the proportion of prisoners who are Indigenous was mainly influenced by increases in New South Wales (from 9% in 1992 to 17% in 2002) and Queensland (from 18% in 1992 to 25% in 2002).



(a) Rate per 100,000 adult Indigenous population at 30 June 2002. (b) A change in the method of counting periodic detainees in the ACT contributed to the increase in rates.

Source: *Prisoners in Australia, 2002* (4517.0).



(a) Indigenous male prisoners as a proportion of all male prisoners and Indigenous female prisoners as a proportion of all female prisoners.

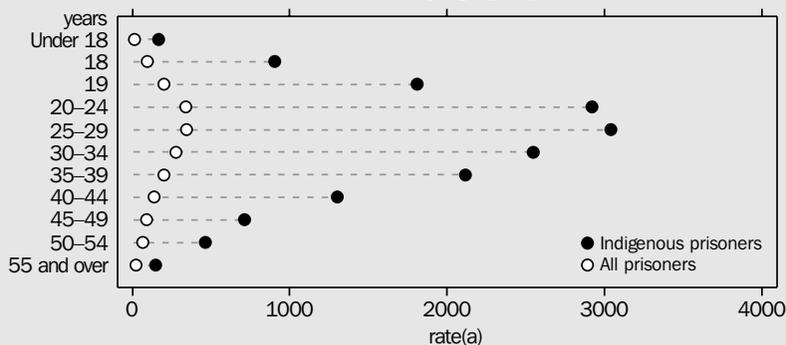
Source: 1992–93: *Australian Institute of Criminology*; 1994–2002: *Prisoners in Australia, 2002* (4517.0).

## Age and sex

The age profile for Indigenous prisoners is younger than that for the overall prisoner population, with the median age for Indigenous prisoners of 29 years being 2 years lower than the 31 years for all prisoners (graph 11.34). Indigenous male prisoners outnumber

Indigenous female prisoners by about 11 to 1 (4,127 compared with 367). Nearly 6% of all Indigenous males aged 25–29 years were in prison at 30 June 2002, compared with 0.6% of all males aged 25–29 years. Nearly 0.6% of all Indigenous females aged 25–29 years were in prison at 30 June 2002, compared with 0.05% of all females aged 25–29 years (table 11.35).

**11.34 IMPRISONMENT RATES(a), By age group — 30 June 2002**



(a) Rate per 100,000 adult population.

Source: *Prisoners in Australia, 2002* (4517.0).

**11.35 INDIGENOUS PRISONERS, By age and sex — 30 June 2002**

Age group (years)	Males			Females			Persons		
	no.	%	rate(a)	no.	%	rate(a)	no.	%	rate(a)
Under 18	15	0.4	325.0	—	—	—	15	0.3	165.1
18	76	1.8	1 608.5	8	2.2	175.2	84	1.9	904.2
19	150	3.6	3 211.3	17	4.6	373.8	167	3.7	1 811.5
20–24	1 041	25.2	5 313.7	94	25.6	488.7	1 135	25.3	2 923.2
25–29	976	23.6	5 610.2	101	27.5	559.9	1 077	24.0	3 039.4
30–34	799	19.4	4 983.2	59	16.1	334.8	858	19.1	2 549.1
35–39	560	13.6	4 177.2	43	11.7	285.0	603	13.4	2 116.1
40–44	286	6.9	2 536.1	27	7.4	212.1	313	7.0	1 303.7
45–49	123	3.0	1 354.9	13	3.5	129.6	136	3.0	711.7
50–54	61	1.5	923.7	4	1.1	53.7	65	1.4	462.5
55–59	23	0.6	485.1	1	0.3	19.5	24	0.5	243.3
60–64	7	0.2	225.0	—	—	—	7	0.2	104.5
65 and over	10	0.2	214.0	—	—	—	10	0.2	90.4
<b>Total</b>	<b>4 127</b>	<b>100.0</b>	<b>3 441.4</b>	<b>367</b>	<b>100.0</b>	<b>284.8</b>	<b>4 494</b>	<b>100.0</b>	<b>1 806.3</b>

(a) Rate of Indigenous prisoners per 100,000 adult Indigenous population.

Source: *Prisoners in Australia, 2002* (4517.0).

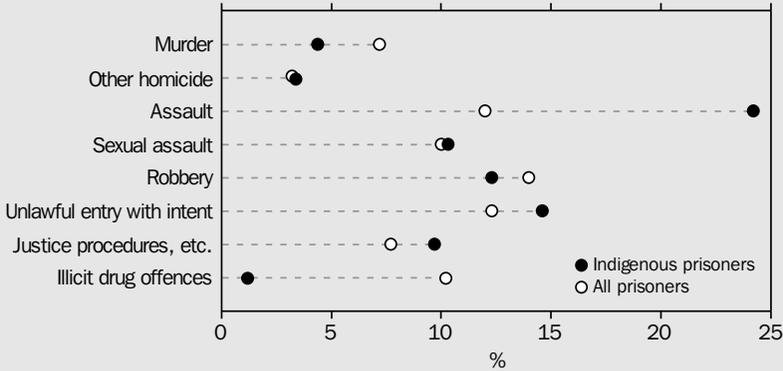
### Most serious offence

The most serious offence is defined as the offence for which prisoners have received the longest sentence. Of the 3,617 Indigenous sentenced prisoners, 24% had a most serious offence of assault, twice the proportion for the overall sentenced prisoner population. In contrast, of 1,840 prisoners sentenced with a most serious offence relating to illicit drug offences, only 2% were Indigenous (graph 11.36).

### Sentence length

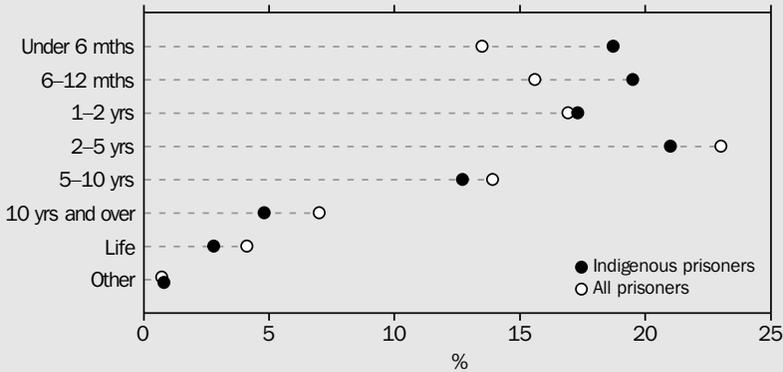
Indigenous prisoners are more likely to be serving shorter sentences than the overall prison population, with 38% of Indigenous prisoners expected to serve less than one year, compared with 29% of all prisoners. The mean expected time to serve for Indigenous prisoners was 2.9 years in 2002, compared with 3.5 years for all prisoners (graph 11.37).

**11.36 SENTENCED PRISONERS, By selected most serious offence — 30 June 2002**



Source: *Prisoners in Australia, 2002* (4517.0).

**11.37 SENTENCED PRISONERS, By expected time to serve — 30 June 2002**



Source: *Prisoners in Australia, 2002* (4517.0).

## Most serious offence

At 30 June 2002, nearly half (46%) of all sentenced prisoners were convicted with a most serious offence involving violence or the threat of violence, including homicide (10%), assault (12%), sexual assault (10%) and robbery (14%) (table 11.38). Another 12% had a most serious offence of UEWI, while a further 10% were serving sentences for a most serious offence involving illicit drugs.

There were differences in the types of most serious offence for which men and women were imprisoned. Graph 11.39 shows that the highest numbers of most serious offences for males in prison at 30 June 2002 involved robbery, UEWI, assault and sexual assault. In the case of female prisoners, drug offences, theft and related offences, robbery, assault and homicide were the frequent most serious offences.

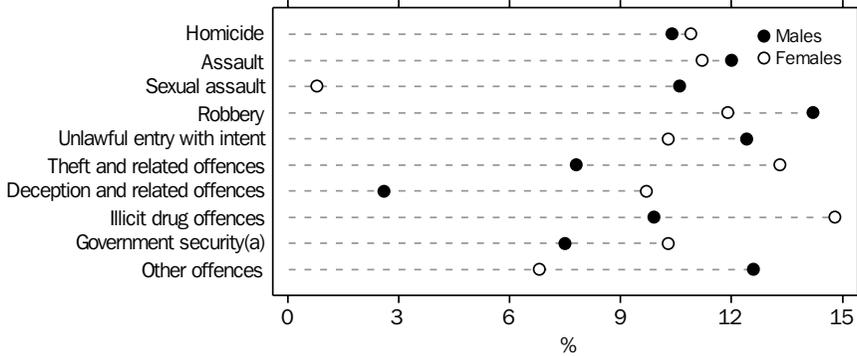
**11.38 SENTENCED PRISONERS, By most serious offence(a) — 30 June 2002**

	NSW(b)	Vic.	Qld	SA	WA	Tas.	NT	ACT in ACT	ACT in NSW(b)	ACT total	<b>Aust.(c)</b>	Aust.(c)
	%	%	%	%	%	%	%	%	%	%	%	no.
Homicide and related offences	8.4	11.9	12.8	15.3	9.3	15.7	8.9	—	10.6	6.8	<b>10.4</b>	1 889
Assault	13.2	6.9	14.0	5.9	10.6	11.2	25.7	17.4	10.6	13.0	<b>12.0</b>	2 165
Sexual assault	6.8	11.7	13.8	10.0	12.6	7.1	9.4	—	8.1	5.2	<b>10.0</b>	1 809
Abduction and related offences	0.8	0.8	0.2	0.4	0.5	—	—	1.4	1.6	1.6	<b>0.6</b>	107
Robbery	14.4	13.0	14.8	14.9	16.6	7.4	3.0	2.9	19.5	13.5	<b>14.0</b>	2 535
Blackmail and extortion	0.8	0.2	0.1	0.1	0.1	—	—	—	—	—	<b>0.4</b>	70
Unlawful entry with intent	10.7	11.9	14.1	14.2	14.2	16.6	9.0	8.7	14.6	12.5	<b>12.3</b>	2 220
Theft and related offences	7.6	17.6	4.0	6.1	6.3	7.4	3.9	20.3	6.5	11.4	<b>8.2</b>	1 471
Deception and related offences	3.4	2.5	3.0	4.6	2.8	1.2	1.4	4.3	1.6	2.6	<b>3.0</b>	551
Illicit drug offences	12.2	10.7	7.5	11.5	10.1	0.9	4.7	—	5.7	3.7	<b>10.2</b>	1 840
Road traffic and motor vehicle regulatory offences	7.2	2.3	2.9	2.4	3.9	11.5	10.8	27.5	3.2	12.0	<b>5.2</b>	927
Government security(d)	11.2	5.1	4.2	10.7	3.9	18.9	4.1	10.1	13.8	12.5	<b>7.7</b>	1 392
Other offences	3.5	5.5	8.6	3.8	9.1	2.1	19.4	7.1	4.0	5.0	<b>5.9</b>	1 102
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>	<b>100.0</b>	<b>18 078</b>

(a) The most serious offence is the offence for which the prisoner has received the longest sentence. (b) The majority of full-time prisoners sentenced in the ACT are held in NSW prisons and are included in the counts for NSW. (c) The ACT in NSW figures are a subset of the NSW figures and are not separately counted in the Australian totals. (d) Includes offences against justice procedures and government operations.

Source: *Prisoners in Australia, 2002, Data Cubes (4517.0)*.

**11.39 SENTENCED PRISONERS, By selected most serious offence — 30 June 2002**



(a) Government security offences include offences such as treason; they also include offences against justice procedures, such as perjury and resisting police.

Source: *Prisoners in Australia, 2002, Data Cubes (4517.0)*.

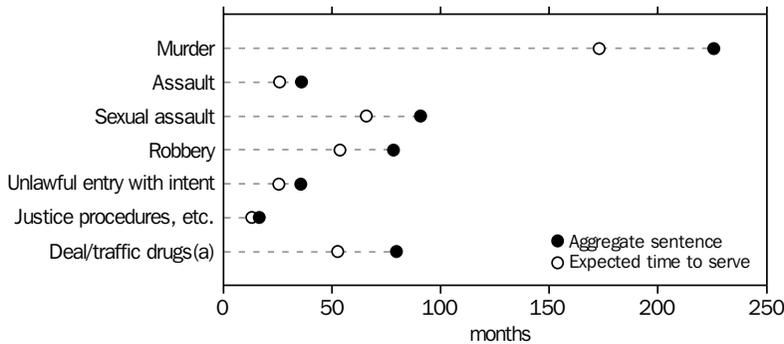
**Sentence length**

Aggregate length of sentence is a measure of the sentences imposed on an offender, sometimes taking multiple offences into account. It is not measured for prisoners who receive an indeterminate type of sentence such as 'life'. Periodic detainees' sentences are also measured separately. At 30 June 2002 the average aggregate sentence of all prisoners sentenced to a specific term was 4.9 years (graph 11.40). Nearly one in

four sentenced prisoners (23%) had an average aggregate sentence of 2–5 years, with another 22% with a sentence of 5–10 years.

The time a prisoner is expected to serve in custody depends upon the sentence originally handed down, the system of remissions and the forms of parole available. Taking into account the earliest dates for release of sentenced prisoners, the average expected time to serve at 30 June 2002 was 3.5 years.

**11.40 SENTENCED PRISONERS, By average sentence length — 30 June 2002**



(a) Includes importing and exporting of illicit drugs.

Source: *Prisoners in Australia, 2002 (4517.0)*.

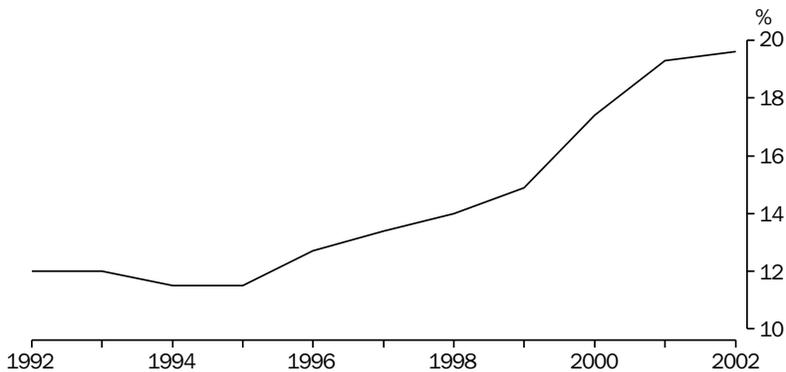
## Unsentenced prisoners

Unsentenced (remand) prisoners include unconvicted prisoners awaiting a court hearing or trial, convicted prisoners awaiting sentencing and persons awaiting deportation. Unsentenced prisoners account for an increasing number and proportion of the total prisoner population. At 30 June 2002 one in five (20%) of the total prisoner population was unsentenced compared with 12% in 1992 (graph 11.41).

## 10-year comparison

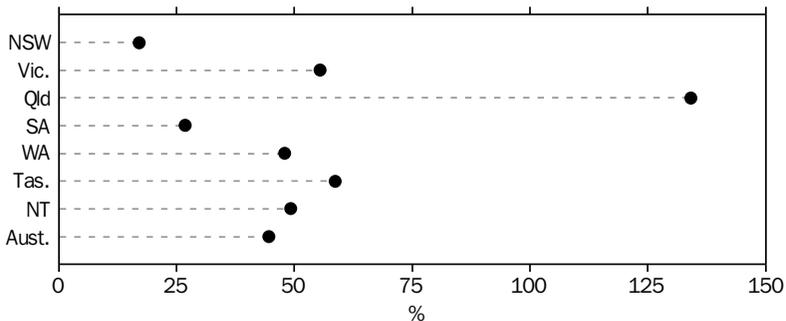
The prisoner population has increased from 15,559 at 30 June 1992 to 22,492 at 30 June 2002. The 45% increase in the number of prisoners during this period exceeded the 15% growth in the Australian adult population. All states and territories recorded increases in prisoner numbers during this period. These increases varied from 134% in Queensland to 17% in New South Wales (graph 11.42).

**11.41 UNSENTENCED PRISONERS — 30 June 2002**



Source: *Prisoners in Australia, 2002 (4517.0)*.

**11.42 PRISONERS(a), By change in prisoner numbers — 1992–2002**



(a) Information on ACT sentenced prisoners in NSW prisons is not available before 1995. Therefore, comparative data for the period 1992–2002 are not available for the ACT.

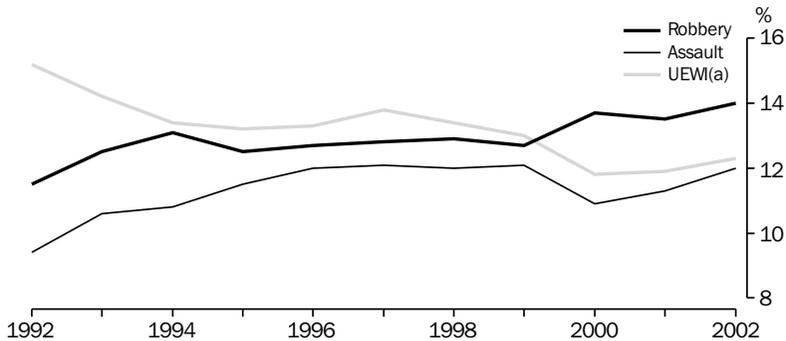
Source: *Prisoners in Australia, 2002 (4517.0)*.

Between 1992 and 2002 there have been increases in the proportions of the sentenced prisoner population who had a most serious offence of robbery or assault. During the same period, a decrease was recorded in sentenced prisoners with a most serious offence of UEWI (graph 11.43).

## Community-based corrections

During the June quarter 2002 there was an average of 53,525 persons (based on the first day of the month figures) in community-based corrections, with sentenced probation being the most prevalent option for all states and territories (table 11.44).

**11.43 SENTENCED PRISONERS, By most serious offence**



(a) Unlawful entry with intent.

Source: *Prisoners in Australia, 2002 (4517.0)*.

**11.44 PERSONS IN COMMUNITY-BASED CORRECTIONS — June quarter 2002**

Type of penalty	Units	NSW(a)	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Community-based corrections(a)(b)	no.	17 406	6 583	14 034	7 077	5 325	898	895	1 307	53 525
Restricted movement	no.	189	..	77	191	80	..	30	1	568
Reparation										
Fine option	no.	106	1 077	2 710	1 908	367	98	24	..	6 290
Community service	no.	4 536	919	2 159	1 371	2 342	385	245	159	12 116
Supervision (compliance)										
Parole	no.	3 371	1 173	1 256	877	1 335	91	165	153	8 421
Bail	no.	170	..	..	283	..	..	3	194	650
Sentenced probation	no.	11 145	3 614	7 832	2 447	3 335	430	450	800	30 054
Community-based corrections	rate(c)	346.6	175.2	503.4	607.5	372.0	253.9	640.4	537.8	359.2

(a) Average of the number on first day of each month in the June quarter 2002. (b) As a person may have more than one type of order, the sum of the components may be greater than the total. (c) Rate per 100,000 adult population.

Source: *Corrective Services, Australia, September Quarter 2002 (4512.0)*.

## Deaths in custody

In 1991 the Royal Commission into Aboriginal Deaths in Custody, which investigated the deaths of 99 Indigenous persons in police or prison custody occurring between January 1980 and May 1989, presented its findings and recommendations. One of the outcomes was the establishment of a National Deaths in Custody Monitoring and Research Program at the Australian Institute of Criminology.

During 2002 (the most recent figures available), 69 people died in all forms of custody in Australia, a 21% decrease since 2001. Of the 69 deaths, 14 were of Indigenous persons. The largest number of deaths in custody recorded since 1990 was in 1997 (105), while the largest number of Indigenous deaths was in 1995 (21) (table 11.45).

During the period 1990–2002, the majority of deaths (65%) occurred in prison custody, while 34% were in police custody — 18% of all deaths in prison custody were of Indigenous prisoners. During this period, the proportion of the prison population that was Indigenous rose from 14% to 20%. In 1995 the crude death rate of Indigenous prisoners was more than twice that of non-Indigenous prisoners (5.7 and 2.4 respectively). However, in 2002, both the Indigenous and the non-Indigenous death rates were 3.1 per 1,000 prisoners (graph 11.46). The death rate of non-Indigenous prisoners was higher than that of Indigenous prisoners in 1992, 1997 and 1998.

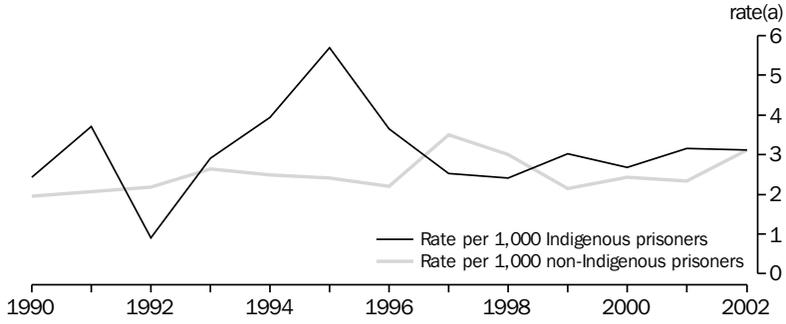
**11.45 DEATHS IN CUSTODY**

	Police		Prison		Total(a)		Total
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	
1990	5	26	5	28	10	55	65
1991	5	26	8	31	13	57	70
1992	7	24	2	34	9	58	67
1993	3	28	7	42	10	71	81
1994	3	24	11	42	14	67	81
1995	4	22	17	42	21	66	87
1996	6	23	12	40	18	64	82
1997	6	23	9	67	15	90	105
1998	6	19	9	60	16	79	95
1999	6	20	13	46	19	66	85
2000	5	20	11	53	17	74	91
2001	5	26	14	42	19	68	87
2002	6	13	8	42	14	55	69

(a) Includes deaths that occurred in custody other than police or prison custody (such as juvenile detention).

Source: Australian Institute of Criminology, *National Deaths in Custody database, 1990–2002*.

### 11.46 PRISON CUSTODY DEATH RATES(a)



(a) Death rates are calculated using the Prisoner Census conducted on 30 June each year.

Source: *Prisoners in Australia (4517.0)*; Australian Institute of Criminology, *National Deaths in Custody database, 1990–2002*.

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*Crime and Safety, Australia, April 2002* (4509.0)

*Criminal Courts, Australia, 2001–02* (4513.0)

*Prisoners in Australia, 2002* (4517.0)

*Recorded Crime — Victims, Australia, 2002* (4510.0)

### Crime reports

Australian Crime Commission, *Australian Illicit Drug Report, 2001–02*

Australian Institute of Criminology

*Australian Prisoners, Results of the National Prison Census, 1991 to 1993 and 1994 to 2001*

*Deaths in Custody in Australia 2001 National Deaths in Custody Program (NDICP) Annual Report*, Australian Institute of Criminology Research and Public Policy Series, no. 42

### Other publications

Australian Federal Police, *Annual Report, 2001–02*

National Crime Authority, *Annual Report, 2001–02*

Steering Committee for the Review of Commonwealth/State Service Provision, *Report on Government Services 2003*, Productivity Commission, available from the Productivity Commission's web site, <<http://www.pc.gov.au/gsp/2003>>

### Web sites

#### Australian sites

Australian Capital Territory Police, <<http://www.afp.gov.au>> provides information on the activities of the ACT Police Service.

Australian Crime Commission, <<http://www.crimecommission.gov.au>> responsible for criminal intelligence collections and analysis, setting national criminal intelligence priorities, conducting intelligence led investigations of criminal activity of national significance, and the exercise of coercive powers to assist intelligence operations and investigations.

Australian Federal Police, <<http://www.afp.gov.au>> principle law enforcement agency through which the Australian Government pursues its law enforcement interests.

Australian Institute of Criminology, <<http://www.aic.gov.au>> has a national focus for the study of crime and criminal justice in Australia and the dissemination of criminal justice information. The Institute draws on information supplied to it by a wide variety of sources.

Australian Law Online, <<http://www.law.gov.au>> gives all Australians access to Government legal information and services available nationwide.

National Crime Prevention, <<http://www.ncp.gov.au>> formerly known as the National Campaign Against Violence and Crime, it was launched in 1997 by the Prime Minister, with the aim of preventing violence and crime and reducing fear of violence and crime in the community.

Northern Territory Police, <<http://www.nt.gov.au/pfes/police.shtml>> provides information on the activities of the NT Police Service.

NSW Bureau of Crime Statistics and Research, <<http://www.lawlink.nsw.gov.au/bocsar1.nsf>> the statistical and research agency within the NSW Attorney General's Department. Conducts statistical monitoring, research and evaluation and provides comprehensive statistical information on crime and criminal justice in NSW.

NSW Police Service, <<http://www.police.nsw.gov.au>> provides information on the activities of the NSW Police Service.

Office of Crime Statistics at the SA Attorney General's Department, <<http://www.ocsar.sa.gov.au>> conducts statistical monitoring, research and evaluation and provides comprehensive statistical information on crime and criminal justice in South Australia.

Productivity Commission, <<http://www.pc.gov.au>> examines the performance of government in Australia in the service areas of education, health, justice, emergency management, and community services and housing. Involves all governments.

Queensland Police Service, <<http://www.police.qld.gov.au>> provides information on the activities of the Queensland Police Service.

South Australia Police, <<http://www.sapolice.sa.gov.au>> provides information on the activities of the SA Police Service.

Tasmania Police, <<http://www.police.tas.gov.au>> provides information on the activities of the Tasmanian Police Service.

University of Melbourne, Criminology Department, <<http://www.criminology.unimelb.edu.au>> the first school of criminology in Australia. Provides information on current research, and links to criminology and related resources.

University of Western Australia, Crime Research Centre, <<http://www.law.ecel.uwa.edu.au/crc>> coordinates and publishes comprehensive statistics on crime and justice for Western Australia. Also conducts research into various aspects of crime and criminal justice.

Victoria Police, <<http://www.police.vic.gov.au>> provides information on the activities of the Victorian Police Service.

Western Australia Police, <<http://www.police.wa.gov.au>> provides information on the activities of the WA Police Service.

## **International sites**

Canadian Centre for Justice Statistics at Statistics Canada, <<http://www.statcan.ca>> Canada's national statistics agency. Provides statistics about Canada's population, resources, economy, society and culture. The Centre for Justice Statistics includes extensive statistics and research papers on crime and justice.

Department of Justice Canada, <<http://www.canada.justice.gc.ca/en/index.html>> provides information on Canada's Department of Justice, including government reports and information on Canadian law.

Home Office, United Kingdom, <<http://www.homeoffice.gov.uk/rds>> government department responsible for internal affairs in England and Wales. Crime and policing information includes policies on crime reduction and prevention as well as specific crime and justice statistics.

International Victimology, <<http://www.victimology.nl>> launched in 1999 as a resource for improving justice for victims of crime and abuse of power. Features two databases: Victimology Research (victimology research in progress), and Victimisation Prevention (promising international practices).

NZ Ministry of Justice, <<http://www.justice.govt.nz>> provides strategic and policy information on issues across the justice sector, including its criminal, civil and constitutional elements.

United Nations Office for Drug Control and Crime Prevention, <<http://www.odccp.org>> provides information on the UN crime program including terrorism, corruption, organised crime, trafficking in human beings, trafficking in drugs and the UNCJIN. Analysis and statistics are also available.

US Bureau of Justice Statistics, <<http://www.ojp.usdoj.gov/bjs>> provides statistics on crime and victims, criminal offenders, law enforcement, prosecution, Federal justice system, courts and sentencing, corrections, the criminal records system and special topics (including drugs, firearms, homicide trends, re-entry trends and international statistics).

US Department of Justice, <<http://www.usdoj.gov>> brings together information on the law, prevention and controlling crime and justice issues. Information includes civil rights and liberties violations, disabilities, dispute resolution, domestic violence, faith based and community initiatives, fraud, immigration information, prison and parole information, trafficking in persons, youth violence and victims of crime.

US National Institute of Justice, <<http://www.ojp.usdoj.gov/nij>> the research, development and evaluation agency of the US Justice Department.

US Office of Justice Programs, <<http://www.ojp.usdoj.gov>> provides funding, training, programs, statistics and research about the justice system, fighting crime, crime victims, as well as special topics (e.g. firearms and crime, advancing justice through DNA technology).



## CULTURE AND RECREATION

Cultural and recreational activities are essential to a shared sense of quality of life and to the social and physical wellbeing of individuals. They take many forms including involvement in creative and performing arts, music, literature, cultural heritage, religious activities, libraries, radio, television, sports and amusements.

This chapter reviews a range of cultural and recreational activities which Australians undertake and provides a statistical summary (where available) for those activities. It also provides information on the industries providing a range of culture and recreation services in Australia.

Statistics have been drawn from household and industry surveys conducted by the Australian Bureau of Statistics (ABS), as well as its compilations of administrative data, such as information about government funding of cultural activities. Other Australian Government and non-government organisations have also supplied data used in this chapter.

Further information on the operations of organisations referred to in this chapter, including their administrative and legislative background, may be obtained from their individual web sites, addresses of which are provided throughout and at the end of the chapter.

## Cultural and natural heritage

Australia's heritage draws on its cultural and natural environments and the history of its people.

Cultural heritage includes historic places of significance, such as: old towns, and residential and commercial buildings; Indigenous ceremonial grounds and rock art galleries; shipwrecks; streetscapes; as well as paintings, objects, books, aircraft and natural history specimens. Increasingly what was formerly intangible, such as traditions, customs and habits, is being recorded and documented in photographs, films, tapes and digital records — these also add to Australia's cultural heritage.

Movable cultural heritage refers to items of cultural heritage which are capable of being transported. Australia is one of only a few countries that have developed and published a specific policy and strategy to care for their movable cultural heritage. Through the National Collections Advisory Forum, governments at all levels work collaboratively with museums and non-government organisations to conserve, promote, manage and provide access to Australia's collections of movable cultural heritage.

Natural heritage refers to the importance of ecosystems, biological diversity and geodiversity to the existence of life, and to their scientific, social, aesthetic and life-support value to present and future generations of people. It includes places of scientific or aesthetic importance, and geological features and landscapes. Extensive areas of coastline, forests, wetlands and deserts are included in national parks, nature reserves and wilderness areas. Many smaller sites are important habitats for native flora and fauna, enabling the conservation of threatened species. Many natural places are significant to Indigenous communities for cultural reasons.

Conservation of heritage places involves identifying them, surveying their values, and classifying and managing them. These functions are shared between all levels of government and their statutory authorities, with assistance from academic and professional bodies, individuals, community conservation organisations such as the national trusts, and conservation councils in each state and territory.

The Australian Government maintains the Australian Heritage Places Inventory database on the web site, <<http://www.heritage.gov.au>>, providing the community with information on

heritage places throughout Australia. It also undertakes heritage activities on its own account. Examples of this include the nomination of sites for World Heritage listing, the protection of Aboriginal and Torres Strait Islander heritage and the development of the Register of the National Estate — Australia's national heritage list.

## National Estate

The term 'the National Estate' was coined by Sir Clough Williams-Ellis, a British architect, in the 1940s. It was introduced into Australia in 1973 when the Commonwealth Government set up a Commission of Inquiry into the National Estate, headed by Hon. Mr Justice RM Hope. The inquiry aimed to 'preserve and enhance the quality of the National Estate'. Following the recommendations of this inquiry, the Australian Heritage Commission Act was passed in 1975 with the support of all political parties.

'The National Estate' is defined in the legislation as:

... those places, being components of the natural environment of Australia, or the cultural environment of Australia, that have aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present community.

Both publicly and privately owned places form part of the National Estate. It encompasses places which are important to local communities, as well as those which are of regional or state significance. The National Estate also includes places which have national or international significance. Broad stretches of coastline, desert, forest and national parks, as well as isolated geological monuments and small areas which might provide habitats for endangered plant or animal species are part of the National Estate. It can cover whole villages and suburbs, streetscapes, single mansions, cattlemen's huts, railway yards and other reminders of the historical development of Australia's society and economy. Places of significance to Aboriginal or Torres Strait Islander peoples, such as rock engravings, rock art galleries, fish traps, carved trees, meeting places and ceremonial sites are also part of Australia's National Estate, as are reminders of early European settlement, such as mission stations.

The Australian Heritage Commission has a statutory obligation to identify the National Estate. It has established the Register of the National Estate to place on public record Indigenous, historic and natural places to assist in their

management and conservation, and, in particular, their protection from potentially adverse government actions.

During 2002–03, the number of places on the Register of the National Estate increased by 153 to 13,094. This compares with an increase of 96 in 2001–02. Details by state or territory and type of place, and comparisons with the previous year, are shown in table 12.1.

More comprehensive statistics on the types of places on the Register of the National Estate can be obtained from the web site, <<http://www.ahc.gov.au>>.

## National parks

National parks and other protected areas are areas of land and/or sea especially dedicated to the protection of biodiversity and other natural and cultural resources. They are established under Commonwealth, state or territory laws or other legal means. All governments participate in the development of a comprehensive, adequate and representative national reserve system 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 the establishment of protected areas managed by conservation or other groups commenced within the last decade. Declaration and management of Indigenous protected areas, Indigenous-owned land that is managed to protect its natural and associated cultural values, commenced in 1998. The Australian Government declares and manages

parks and reserves on land owned or leased by the Commonwealth, in Commonwealth waters and on Indigenous land leased to the Commonwealth.

Although there are nearly 50 different protection designations in Australia, all protected areas are classified into one or more of the World Conservation Union protected area management categories, the most common being 'national park' and 'nature reserve'. The types of areas managed include: strictly protected areas managed mainly for science with very limited public access; areas where recreation is encouraged, but where resource development adverse to conservation of the environment is not; and multiple use areas where ecologically sustainable resource utilisation, recreation and nature conservation can coexist.

## Visits to World Heritage areas, national and state parks

The ABS Environmental Attitudes and Practices Survey is a household survey collecting data on several environmental topics, including visits to World Heritage areas, and national and state parks. The most recent survey found that people between the ages of 25 and 44 years were the most likely group to have made a visit to these areas and parks in the 12 months prior to March 2001. During that period 61% of people aged 25–34 years or 35–44 years visited one of these areas, compared with an attendance rate of 54% for all adults. However, as shown in graph 12.2, outings to these areas and parks have tended to decline between 1992 and 2001 within each age group.

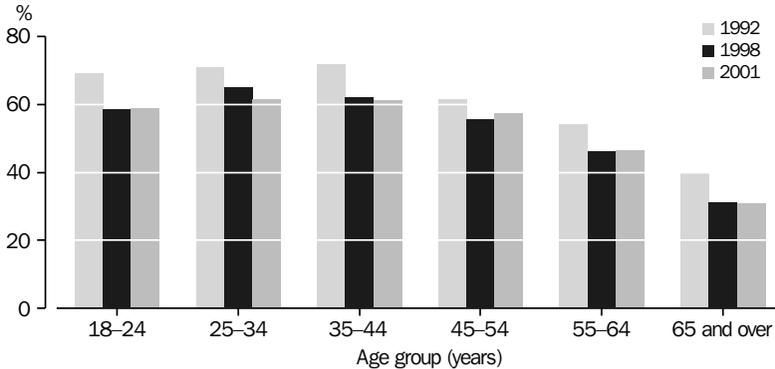
**12.1 PLACES ON THE REGISTER OF THE NATIONAL ESTATE**

	Indigenous places		Historic places		Natural places		Total	
	2001–02	2002–03	2001–02	2002–03	2001–02	2002–03	2001–02	2002–03
New South Wales	221	221	3 084	3 125	478	487	3 783	3 833
Victoria	111	111	2 412	2 427	247	254	2 770	2 792
Queensland	155	155	737	738	320	322	1 212	1 215
Western Australia	74	74	964	969	265	284	1 303	1 327
South Australia	150	153	1 204	1 209	389	390	1 743	1 752
Tasmania	65	66	1 201	1 209	253	263	1 519	1 538
Northern Territory	105	105	144	147	62	63	311	315
Australian Capital Territory(a)	28	30	183	195	30	30	241	255
External territories	—	—	39	42	20	25	59	67
<b>Total</b>	<b>909</b>	<b>915</b>	<b>9 968</b>	<b>10 061</b>	<b>2 064</b>	<b>2 118</b>	<b>12 941</b>	<b>13 094</b>

(a) Includes Jervis Bay.

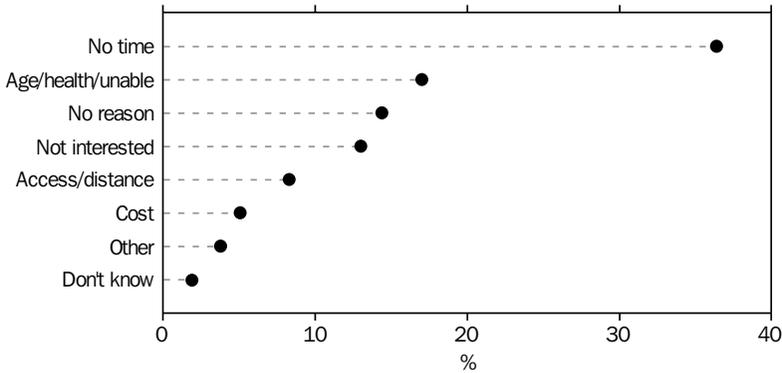
Source: Australian Heritage Commission.

## 12.2 VISITS TO WORLD HERITAGE AREAS, NATIONAL AND STATE PARKS



Source: *Environmental Issues: People's Views and Practices, March 2001 (4602.0)*.

## 12.3 MAIN REASON FOR NOT VISITING A WORLD HERITAGE AREA OR PARK — 2001



Source: *Environmental Issues: People's Views and Practices, March 2001 (4602.0)*.

For those who had not visited a World Heritage area, national or state park in the 12 months prior to March 2001, lack of time was given as the main reason by 36% of the people (graph 12.3). Inability to visit because of age or health was the next most common reason for not visiting these areas (17%).

### Museums and art galleries

In March 2002, Museums Australia — the peak industry association and professional body representing museums in Australia — adopted the following definition of ‘museums’:

A museum helps people understand the world by using objects and ideas to interpret the past and present and explore the future. A museum preserves and researches collections, and makes objects and information accessible in actual and virtual

environments. Museums are established in the public interest, and operate as not-for-profit organisations.

Museums Australia recognises that museums of science, history and art may be designated by many other names (including gallery and Keeping Place). In addition, the following may qualify as museums for the purposes of this definition:

- natural, archaeological and ethnographic monuments and sites, and historical monuments and sites of a museum nature that acquire, conserve and communicate material evidence of people and their environment;
- institutions holding collections, and displaying specimens, of plants and animals, such as botanical and zoological gardens, herbaria, aquaria and vivaria;
- science centres;

(d) cultural centres and other entities that facilitate the preservation, continuation and management of tangible or intangible heritage resources (e.g. living heritage and digital creative activity); and

(e) other institutions that the Council of Museums Australia considers have some or all of the characteristics of a museum.

The main Commonwealth museums are the National Museum of Australia, the National Gallery of Australia, the Australian National Maritime Museum, the Australian War Memorial, the National Science and Technology Centre (Questacon), and the National Portrait Gallery.

Australian Museums and Galleries On Line (AMOL, formerly known as Australian Museums On Line) provides access to a database of information on over 1,500 national, state, territory, regional and local museums across Australia at <<http://amol.org.au>>. Information about items held by museums is accessible through a range of search options, such as region, collection type and collection strength.

Information about Museums Australia, and links to museums and other museum associations, can be obtained from the web sites: Museums Australia at <<http://www.museumsaustralia.org.au>> and the National Museum of Australia at <<http://www.nma.gov.au>>.

### Museum attendance

The 2002 Survey of Attendance at Selected Cultural Venues and Events showed that 24.9% of the Australian population aged 18 and over (3.6 million people) had visited an art gallery at least once in the previous 12 months (table 12.4). This is higher than the attendance rate of 20.9% (2.9 million people) determined when the survey was run in 1999. The attendance rate at museums (other than art galleries) was 25.0% (3.6 million people) in 2002, compared with 19.6% (2.8 million people) in 1999. This large rise in attendance can be partly explained by the temporary closure of some large museums during the 1999 survey period.

### 12.4 ATTENDANCE(a) AT MUSEUMS — 2002

	Art galleries	Museums
Attendance rate(b)	%	%
Males	22.0	24.6
Females	27.7	25.4
Persons	24.9	25.0
Age group (years)		
18–24	23.8	22.3
25–34	23.9	27.0
35–44	25.8	29.1
45–54	27.8	25.3
55–64	28.0	25.7
65 and over	19.7	18.3
Birthplace		
Australia	24.8	24.9
Main English-speaking countries	29.0	29.6
Other countries	22.6	22.6

(a) Attendance at least once in the 12 months prior to interview in 2002. (b) The number of people who attended, expressed as a percentage of the number of people in that population group.

Source: *Attendance at Selected Cultural Venues and Events, Australia, 2002 (4114.0)*.

### Museums industry

The ABS conducted a survey of museums in respect of the 1999–2000 financial year. Museums were defined for the purpose of the survey as organisations operating enclosed areas storing artefacts, artworks and museum objects, and which were open to the general public.

At the end of June 2000, there were 2,049 museum establishments comprising 249 art museums/galleries, 411 historic properties and 1,389 other museums (e.g. social history, natural history and science museums) (table 12.5). The majority of museum establishments (58.0%) were operated without employees, relying on the assistance of 14,570 volunteers. Museums with employees also rely on the services of volunteers. The 861 museum establishments with employees, at the end of June 2000, had a total of 6,956 employees or working proprietors and 15,393 volunteers.

The 78 museums with 100 or more employees averaged 121,300 admissions each (or 34.4% of total museum admissions) in 1999–2000. This compares with an average of 34,800 admissions for museums with 20–99 employees, 29,100 admissions for museums with 5–19 employees and 7,100 admissions for museums with 1–4 employees. Museums which were operated solely by volunteers had an average of 4,200 admissions in 1999–2000.

## 12.5 MUSEUMS — 1999–2000

	Units	Art museums/ galleries	Historic properties	Other museums	Total
Museum/gallery establishments at end June 2000	no.	249	411	1 389	2 049
Artefacts/artworks/museum objects at end of June 2000	'000	1 157.5	*2 740.0	57 737.8	61 635.3
Admissions during the year ended 30 June 2000	'000	6 527.6	*7 260.0	13 744.2	27 531.8
Employment at end June 2000	no.	1 741	1 010	4 205	6 956
Volunteers for the month of June 2000	no.	4 177	5 929	19 857	29 963
Income	\$m	197.2	64.4	454.8	716.4
Expenses	\$m	164.4	57.4	420.7	642.5

Source: *Museums, Australia, 1999–2000 (8560.0)*.

At the end of June 2000, there were 61.6 million artefacts, artworks and museum objects located in museums, of which 16.1% were on display. The majority (59.3%) of these artefacts, artworks and museum objects were in the 78 large museums with employment of 100 or more. These large museums displayed only 1.6% of their artefacts, artworks and museum objects.

### Commercial art galleries

The ABS conducted a survey of commercial art gallery businesses (including Aboriginal and Torres Strait Islander art centres) in respect of 1999–2000. Commercial art galleries were defined as businesses whose primary activity was the display and sale of artworks. Auction houses and businesses where artists sold artwork directly to the consumer were not included.

At the end of June 2000, there were 514 commercial art gallery businesses operating in Australia, comprising 31 which self-identified their main activity as being Aboriginal and Torres Strait Islander art centres. There were 1,409 persons employed by commercial art gallery businesses at the end of June 2000, comprising 435 working proprietors and partners, 389 permanent full-time employees, 337 permanent part-time employees and 249 casual employees (table 12.6).

### Botanic gardens, zoological parks and aquariums

#### Botanic gardens and herbaria

Botanic gardens are scientific and cultural institutions established to collect, study, exchange and display plants for research and for the education and enjoyment of the public. Some botanic gardens have an associated herbarium, which is a scientific collection of dried preserved plant specimens used for research and the accurate classification and identification of plants and plant material. Many recently established

gardens operate under the auspices of local government or community groups and have a native plant and conservation focus.

There are major botanic gardens in each capital city, and these are managed by the respective state or territory government, with the exception of Brisbane (which is managed by the City Council) and Canberra (which is managed by the Australian Government). The Booderee Botanic Gardens at Jervis Bay is also managed by the Australian Government on behalf of the traditional Aboriginal owners of the land, the Wreck Bay Aboriginal Community Council, under arrangements in place since December 1995.

## 12.6 COMMERCIAL ART GALLERIES — 1999–2000

	Units	Value
Businesses at end June 2000	no.	514
Locations/outlets	no.	573
Employment at end June 2000		
Males	no.	552
Females	no.	857
Persons	no.	1 409
Income		
Commission income from the sale of artworks	\$m	43.4
Income from the sale of artworks owned by the business	\$m	72.7
Other income	\$m	15.6
Total	\$m	131.8
Expenses		
Purchases of artworks for resale	\$m	44.4
Wages and salaries	\$m	22.0
Other	\$m	55.7
Total	\$m	122.1
Operating profit before tax	\$m	*8.8

Source: *Commercial Art Galleries, Australia, 1999–2000 (8651.0)*.

The Council of Heads of Australian Botanic Gardens, with its secretariat located at the Australian National Botanic Gardens in Canberra, coordinates the liaison between the various botanic gardens in Australia and represents these gardens in national and international matters.

The Council of Heads of Australian Herbaria coordinates the liaison between the various herbaria. This body is also responsible for 'Australia's Virtual Herbarium', a web site which links the databases of all the eight major herbaria and will eventually provide information and locational data for over six million plant specimens on the Internet. The Australia's Virtual Herbarium web site address is <<http://www.anbg.gov.au/avh>>.

The Australian National Botanic Gardens occupies a 90-hectare (ha) site on the lower slopes of Black Mountain in Canberra. It contains the national collection, and one of Australia's most comprehensive displays, of living native plants. Officially opened in 1970, it was proclaimed a Commonwealth Reserve in 1991 and is managed within the framework of the *Environment Protection and Biodiversity Act 1999* (Cwlth). The Australian National Botanic Gardens maintains about 100,000 living plants constituting about 7,000 species. It receives about 390,000 visitors each year, with peaks in October for the spring flowering and January for the holiday tourist season. It is on the Register of the National Estate in recognition of its importance as a research- and teaching-based botanic garden established to display and interpret Australian flora.

The Australian National Herbarium, containing dried specimens of the living plants in the Gardens, is managed jointly with CSIRO (Commonwealth Scientific and Industrial Research Organisation) Plant Industry as part of the Centre for Plant Biodiversity Research. It currently houses about 1.32 million herbarium specimens.

Additional information about botanic gardens and herbaria in Australia can be obtained from the web sites: Australian National Botanic Gardens at <<http://www.anbg.gov.au>>, Council of Heads of Australian Botanic Gardens at <<http://www.chabg.gov.au>>, Directory of Australian Botanic Gardens and Arboreta at <<http://www.chabg.gov.au/bg-dir>>, and Resources of Australian Herbaria at <<http://www.chah.gov.au/resources>>.

## Attendance at botanic gardens

The 2002 Survey of Attendance at Selected Cultural Venues and Events showed that 41.6% of the Australian population aged 18 and over (6.0 million people) attended a botanic garden at least once in the 12 months prior to interview (table 12.7). In 1999, the attendance rate by adults was 36.4% (5.1 million people).

### 12.7 ATTENDANCE(a) AT BOTANIC GARDENS — 2002

Attendance rate(b)	%
Males	40.0
Females	43.2
Persons	41.6
Age group (years)	
18–24	42.6
25–34	45.5
35–44	43.4
45–54	41.4
55–64	42.2
65 and over	33.1
Birthplace	
Australia	40.4
Main English-speaking countries	48.1
Other countries	42.8

(a) Attendance at least once in the 12 months prior to interview in 2002. (b) The number of people who attended, expressed as a percentage of the number of people in that population group.

Source: Attendance at Selected Cultural Venues and Events, Australia, 2002 (4114.0).

The ABS Botanic Gardens Census estimated that during 1999–2000 there were 11.8 million visits to botanic gardens. This estimate includes visits by Australian adults, children, and people from outside Australia, as well as multiple visits by individuals. The six largest botanic gardens (i.e. those employing 50 or more persons) accounted for 61.9% of these visits at an average of 332,000 visits per location.

## Botanic gardens industry

The ABS Botanic Gardens Census in respect of 1999–2000 found that there were 72 employing organisations operating botanic gardens at the end of June 2000. The operations of these organisations covered 3,664 ha, comprising 3,050 ha of botanic gardens and 614 ha of arboreta. The organisations employed 1,250 people at the end of June 2000 and utilised the services of 1,991 volunteers during the month of June. Many of the smaller botanic gardens have few or no staff, and are particularly reliant on

volunteers for their operation. There were 54 organisations which employed nine or fewer people, and these organisations employed a total of 156 people at the end of June 2000, and used the services of 871 volunteers during the month of June.

### Zoological parks and aquariums

Zoological parks and aquariums (i.e. animal, fauna, bird life and reptile parks, aquariums, aviaries, butterfly houses and dolphinariums) are primarily engaged in the breeding, preservation, study and display of native and/or exotic fauna in captivity, enclosures or natural environments, that are made accessible to the general public.

The first zoo in Australia, the Melbourne Zoo, was founded in 1857. There are now zoos and wildlife sanctuaries throughout Australia. As well as the four traditional zoos in Sydney, Melbourne, Adelaide and Perth, there are numerous wildlife parks and sanctuaries, some of which are associated with urban zoos and others which are privately owned. Some of the better known zoological parks and sanctuaries are Taronga Park (Sydney), Healesville Sanctuary (60 km from Melbourne), the Western Plains Zoo (Dubbo), Victoria's Open Range Zoo at Werribee (a Melbourne suburb), The Territory Wildlife Park (Darwin), Monarto Zoological Park (70 km from Adelaide), Lone Pine Koala Sanctuary (Brisbane) and Currumbin Sanctuary (Gold Coast).

The Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA) was formally established in 1990. A key purpose of the association is to harness the collective resources of zoos and aquariums to help conserve biodiversity in the natural environment. More information on conservation programs and activities with ARAZPA involvement can be obtained from the web site, <<http://www.arazpa.org.au>>.

### Attendance at zoological parks and aquariums

The 2002 Survey of Attendance at Selected Cultural Venues and Events showed that 40.0% of the Australian population aged 18 and over (5.8 million people) visited a zoological park or aquarium during the 12 months prior to interview

(table 12.8). Of these, 56.3% (3.3 million people, or 22.6% of the Australian population aged 18 and over) visited a zoo at least once during the year. In 1999 the attendance rate by adults at zoological parks and aquariums was 33.8% (4.8 million people).

### 12.8 ATTENDANCE(a) AT ZOOLOGICAL PARKS AND AQUARIUMS — 2002

Attendance rate(b)	%
Males	38.3
Females	41.8
Persons	40.0
Age group (years)	
18–24	43.2
25–34	51.9
35–44	49.1
45–54	36.7
55–64	32.8
65 and over	20.1
Birthplace	
Australia	39.9
Main English-speaking countries	46.2
Other countries	36.7

(a) Attendance at least once in the 12 months prior to interview in 2002. (b) The number of people who attended, expressed as a percentage of the number of people in that population group.

Source: Attendance at Selected Cultural Venues and Events, Australia, 2002 (4114.0).

### Zoological parks and aquariums industry

An ABS survey of the zoological parks and aquariums industry, in respect of 1996–97, showed that there were almost 8 million paid admissions to zoological parks and aquariums during that year. At the end of June 1997, there were 65 businesses in this industry, comprising 53 zoological parks and 12 aquariums. There were 1,946 persons employed in the zoological parks and aquariums industry at the end of June 1997. Full-time employees accounted for 65.2% (1,268) of total employment. A further 1,591 persons worked for zoological parks and aquariums on a volunteer basis during June 1997. The majority of these volunteers (75.0%) worked as guides and information officers.

## Libraries and archives

### 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 National Library of Australia is Australia's largest library. It was established as a separate entity in 1960 by the *National Library Act 1960* (Cwlth). This library, which was formerly known as the Commonwealth National Library, grew out of the Commonwealth Parliamentary Library which was established in 1901. The National Library builds and maintains a national collection of Australian library materials and provides an effective gateway to national and international sources of information. It acquires Australian printed material (monographs, serials, maps, music, photographs and pictures), using the legal deposit provisions of the *Copyright Act 1968* (Cwlth), and other formats and materials, including e-publications, through purchase or voluntary deposit. The National Library's web site at <<http://www.nla.gov.au>> is a primary means of information service delivery for on-site and off-site users, both nationally and internationally. Libraries are increasingly making use of the Internet as a way of reducing geographic location as an inhibitor to gaining access to information.

### Public Lending Right (PLR)

PLR is a cultural program of the Australian Government, which is administered by the Department of Communications, Information Technology and the Arts (DCITA). It makes payments to eligible Australian book creators and publishers on the basis that income is lost from the availability of their books for loan in public lending libraries. PLR also supports the enrichment of Australian culture by encouraging the growth and development of Australian writing and publishing. Australia is one of 15 countries operating a PLR program. Further information on this program can be obtained from the web site, <<http://www.dcita.gov.au/lendingrights>>.

Some 8,703 book creators and their publishers received PLR payments in 2002–03, totalling almost \$6.3m. The PLR rates of payment under the

current PLR scheme are \$1.34 per copy of each eligible book for creators and 33.5 cents per copy of each eligible book for publishers.

The Educational Lending Right (ELR) program complements the PLR. ELR came into effect under the Commonwealth Government's Book Industry Assistance Plan, which was funded from 2000–01 to 2003–04. An annual survey of the book stock of a representative sample of educational lending libraries (including school, Technical and Further Education (TAFE) and university libraries) is used to determine payments. In 2002–03, some 7,594 book creators and publishers received ELR payments totalling \$9.3m.

### Library attendance

The 2002 Survey of Attendance at Selected Cultural Venues and Events provides data on people aged 18 years and over who attended a national, state or local government library at least once in the 12 months prior to interview. Table 12.9 shows that 42.1% of the Australian population aged 18 and over (almost 6.1 million people) attended one of these libraries at least once during the 12 months. In 1999 the adult attendance rate was 36.8% (5.2 million people).

#### 12.9 ATTENDANCE(a) AT LIBRARIES(b) — 2002

Attendance rate(c)	%
Males	34.5
Females	49.6
Persons	42.1
Age group (years)	
18–24	47.2
25–34	42.0
35–44	47.4
45–54	41.9
55–64	36.9
65 and over	35.7
Birthplace	
Australia	41.5
Main English-speaking countries	49.3
Other countries	40.4

(a) Attendance at least once in the 12 months prior to interview in 2002. (b) National, state or local government library only. (c) The number of people who attended, expressed as a percentage of the number of people in that population group.

Source: *Attendance at Selected Cultural Venues and Events, Australia, 2002 (4114.0)*.

## Archives

The primary function of archives is the permanent preservation of records which are unique because of their administrative, financial, legal, research, cultural or other information value. The records are generally no longer required for the conduct of current activities by government agencies, non-government organisations or individuals. While much archival work is an adjunct to other activity, a growing number of archival bodies employ specialist staff to serve the legal, administrative and research needs of individuals and organisations and are funded by governments and private sources.

The National Archives of Australia (NAA) is the Commonwealth organisation which promotes reliable record keeping and maintains a visible, accessible and known archival collection, in the interests of accountable government and for the benefit of the community. There are NAA offices and reading rooms in all states and territories. The national headquarters in Canberra also houses the Treasures Gallery, the Exhibitions Gallery and the Federation Gallery. Constructed as part of the Centenary of Federation in 2001, the Federation Gallery houses Australia's original 'birth certificates' including the Constitution and Queen Victoria's Royal Commission of Assent. The NAA administers the legislative framework for Commonwealth records management (including arrangements for the disposal of records), maintains information systems, provides appropriate custody and preservation arrangements (including archival storage) and makes records available under the relevant legislation. Records covered by the *Archives Act 1983* (Cwlth) occur in all formats including paper, digital and audio-visual. The database 'RecordSearch' and many of the record keeping publications and reference guides are now on-line and can be accessed through the NAA web site at <<http://www.naa.gov.au>>. The NAA also maintains the 'Documenting a Democracy' web site, <<http://www.foundingdocs.gov.au>>, which presents the founding documents of democratic governments in Australia, and the 'Australia's Prime Ministers' web site, <<http://www.primeministers.naa.gov.au>>, which operates as a portal to archival institutions holding prime ministerial records.

In addition, each state and territory government maintains its own archives and provides for public access to records. Archives have also been established by some churches, business corporations, universities and city councils. The Australian War Memorial collects private material concerning Australians at war, and it is also the custodian of certain official Commonwealth records relating to war or warlike operations. ScreenSound Australia collects cultural material relevant to the film and sound media. Other corporate and private records continue to be collected by some state archives offices, libraries and universities.

The 'Archives of Australia' web site, <<http://www.archivenet.gov.au>>, provides information about archives in Australia and operates as a portal to the web sites of other Australian archival institutions.

## Libraries and archives industry

An ABS survey of libraries and archives in respect of 1999–2000 showed that, at the end of June 2000, there were 505 local government library organisations with 1,510 library locations, eight national and state library organisations with 26 locations, and eight national and state archive organisations with 27 locations. The libraries held 54.3 million books and other library materials at the end of June 2000, of which 36.4 million were available as lending stock. The total income of the industry in 1999–2000 was \$792m, with government funding accounting for 91% (\$725m) of the total.

## Literature and print media

### Reading habits, book buying and borrowing

In 2001, DCITA and the Australia Council commissioned a national telephone survey of about 1,500 people aged 18 years and over to obtain information about patterns of reading, buying and borrowing books for pleasure. Respondents were asked what they had read in the week before interview. The survey found that 91% of people aged 18 years and over had read newspapers, 72% had read books for pleasure, 63% had read magazines and 44% had read books for work or study.

Those who had read books for pleasure in the previous week were asked about the source of each book read. The origins of all the books read were as follows:

- 29% were bought new
- 20% were borrowed from a library
- 19% had been in the house for a long time (origins unknown)
- 13% were borrowed from a friend
- 10% were received as a gift
- 5% were bought second-hand
- 2% were borrowed from someone in the house
- 2% were from other sources.

In summary, 44% of books were purchased (new, second-hand or as a gift) and 35% were borrowed. Most borrowing was from libraries, but informal networks also played a significant role.

### Book publishing

During 2000–01 there were 228 businesses which were either predominantly engaged in book publishing, or generated income of \$2m or more from this activity. Table 12.10 shows that these organisations generated \$1,361.2m in income, of which \$1,260.6m was from the sale of books. Of the total book sales, \$747.7m (59%) was attributed to Australian titles.

### Book retailing

Sales from books valued at \$1,221.0m were reported by the 1,285 employing businesses identified as having retail bookselling activity in 2000–01. Table 12.11 shows that the majority of these business were newsagents. However, most of the income from book sales was generated by the 545 businesses classified as bookshops (76% or \$933.6m). In total, book retailers sold over 70 million new books during 2000–01.

## 12.10 BOOK PUBLISHERS — 2000–01

	Units	Value
Organisations at end June 2001	no.	228
Income		
<i>Sales of all books</i>	\$m	1 260.6
Sales of Australian titles	\$m	747.7
Sales of imported titles	\$m	512.9
Sales of other goods	\$m	29.6
Other income	\$m	71.1
<i>Total</i>	\$m	1 361.2
Average income per business	\$m	6.0
Expenses		
Wages and salaries paid	\$m	223.7
Royalties and fees paid	\$m	85.0
Other expenses	\$m	1 013.0
<i>Total</i>	\$m	1 321.7
Average expenses per business	\$m	5.8
Ratio of royalties and fees paid to sales of Australian titles		
	%	11.4
Export sales of books	\$m	162.5
Internet sales of books	\$m	1.1
Operating profit before tax	\$m	62.7
Profit margin	%	4.6
Industry value added	\$m	382.0

Source: *Book Publishers, Australia, 2000–01* (1363.0).

## Performing arts

The performing arts include music performances, acting, dance performances, opera and musicals, circuses and puppet shows.

### Attendance at the performing arts

Attendance at the performing arts is a significant aspect of the cultural life of many Australians. Table 12.12 shows that in the 12 months prior to interview in 2002, 26.4% of the Australian population aged 18 and over (3.8 million people) attended at least one popular music concert; 18.7% (2.7 million people) attended at least one opera or musical; and 18.0% (2.6 million people) attended at least one theatre performance. Attendance rates at most of the performing arts were generally similar to or slightly higher than those recorded in a survey conducted in 1999.

### 12.11 BOOK RETAILERS — 2000-01

	Units	Bookshops(a)	Newsagents(b)	Department stores	Super-markets	Retailing n.e.c.	Total
Number of businesses	no.	545	718	7	11	4	1 285
Number of books sold	million	41.8	*9.1	16.4	n.p.	n.p.	70.3
<b>Income</b>							
Retail sales of new books(c)	\$m	933.6	*129.0	148.2	6.3	3.8	1 221.0
Other retail sales	\$m	66.5	700.4	n.p.	n.p.	537.2	44 757.6
Other income	\$m	24.7	103.6	n.p.	n.p.	0.4	4 725.0
<i>Total</i>	<i>\$m</i>	<i>1 024.8</i>	<i>933.0</i>	<i>13 678.2</i>	<i>34 526.2</i>	<i>541.4</i>	<i>50 703.5</i>
Average income per business	\$m	1.9	1.3	1 954.0	3 138.7	135.3	39.5
Average sales of new books per business	\$m	1.7	*0.2	21.2	0.6	0.9	1.0
<b>Expenses</b>							
Purchases of new books	\$m	602.1	53.5	124.0	4.7	1.8	786.1
Other expenses	\$m	415.9	841.9	13 632.9	33 892.7	543.0	49 326.5
<i>Total</i>	<i>\$m</i>	<i>1 018.0</i>	<i>895.4</i>	<i>13 756.9</i>	<i>33 897.3</i>	<i>544.8</i>	<i>50 112.5</i>
Average expenses per business	\$m	1.9	1.2	1 965.3	3 081.6	136.2	39.0
Average purchases of new books per business	\$m	1.1	*0.1	17.7	0.4	0.4	0.6

(a) Includes only those businesses which are classified according to the ANZSIC as Newspaper, book and stationery retailing and for which the value of new book sales comprises at least 50% of all retail sales. (b) Includes only those businesses which are classified according to the ANZSIC as Newspaper, book and stationery retailing and for which the value of new book sales comprises less than 50% of all retail sales. (c) Includes \$12.4m for electronic and audio books.

Source: *Book Retailers, Australia, 2000-01 (1371.0)*.

### 12.12 ATTENDANCE(a) AT THE PERFORMING ARTS — 2002

	Popular music concerts	Classical music concerts	Dance performances	Musicals and operas	Theatre performances	Other performing arts
Attendance rate(b)	%	%	%	%	%	%
Males	26.6	7.7	8.4	15.1	15.3	19.2
Females	26.2	10.2	13.4	22.1	20.6	21.5
Persons	26.4	9.0	10.9	18.7	18.0	20.4
<b>Age group (years)</b>						
18-24	43.8	6.3	10.5	16.0	19.8	23.3
25-34	33.2	6.6	10.3	17.9	17.7	24.0
35-44	25.9	8.1	14.0	17.1	19.4	20.9
45-54	24.9	10.9	12.1	21.6	19.9	20.6
55-64	20.3	13.2	10.7	23.2	17.6	19.5
65 and over	10.4	9.7	6.9	16.6	13.0	12.9
<b>Birthplace</b>						
Australia	27.8	8.1	10.5	19.8	18.9	20.5
Main English-speaking countries	28.5	11.5	12.6	20.5	21.3	23.5
Other countries	19.5	10.8	11.6	12.7	12.1	17.9

(a) Attendance at least once in the 12 months prior to interview in 2002. (b) The number of people who attended, expressed as a percentage of the number of people in that population group.

Source: *Attendance at Selected Cultural Venues and Events, Australia, 2002 (4114.0)*.

## Performing arts industries

The ABS conducted a survey of performing arts industries in respect of 1999–2000. The survey found that there were 1,437 employing businesses mainly engaged in the performing arts industries at the end of June 2000. Of these, 705 mainly provided live music and theatre productions; 125 operated venues for performing arts such as concert halls and entertainment centres; and 606 provided services to the arts industry such as festival management, casting agency operation, costume design and set designing. They employed 16,429 persons at the end of June 2000 and a further 20,752 persons worked as volunteers. During 1999–2000 they earned a total income of \$1,633.8m, of which \$470.0m was from government funding and \$460.5m from box office income.

### Symphony Australia Orchestral Network

The Symphony Australia Orchestral Network comprises Australia's six major professional symphony orchestras — Adelaide Symphony Orchestra, Melbourne Symphony, The Queensland Orchestra, Sydney Symphony, Tasmanian Symphony Orchestra and West Australian Symphony Orchestra — as well as the national service organisation, Symphony Australia. The network was established as a division of the Australian Broadcasting Corporation (ABC) over a number of years from 1932. The orchestras and the national service organisation now operate as subsidiary companies of the ABC. The orchestras present live performances in Australia's major performing arts venues and in free open-air

concerts. They also present broadcasts on ABC radio and television, make recordings for international record labels, accompany opera and ballet performances, undertake international tours, and give performances in regional and country areas throughout Australia. In 2002, the six orchestras presented 643 concerts to audiences totalling more than 797,000 people (table 12.13) and reached much larger audiences through their recording and broadcast activities. More information about Symphony Australia and its activities can be obtained from the web site, <<http://www.symphony.net.au>>.

### Musica Viva

Musica Viva, Australia's national promoter and organiser of chamber music concerts, began as a performing ensemble named Sydney Musica Viva in December 1945. During 2002, 2,715 concerts or other performances were presented by Musica Viva across Australia and overseas, with audiences totalling 482,363 Australians and 42,070 overseas patrons (table 12.14). M n ge concerts, designed for people aged between 18 and 35 years and presented in unusual, intimate venues, were presented in Adelaide, Perth, Melbourne and Sydney to audiences totalling 1,779. CountryWide, a regional touring program, reached audiences of 21,608, while the live music education program ('Musica Viva in Schools') reached 415,444 students across Australia and in Singapore. Further information on Musica Viva can be obtained from the web site, <<http://www.musicaviva.com.au>>.

**12.13 SYMPHONY ORCHESTRAS**

Type of performance	2001		2002	
	Concerts	Total attendances	Concerts	Total attendances
Paid orchestral concerts	452	559 134	433	546 658
School concerts	221	107 907	198	88 389
Free concerts	22	210 188	12	162 667
<b>Total</b>	<b>695</b>	<b>877 229</b>	<b>643</b>	<b>797 714</b>

Source: Symphony Australia.

### 12.14 MUSICA VIVA AUDIENCES(a)

Location	1999	2000	2001	2002
New South Wales	274 495	263 162	276 931	290 294
Victoria	34 183	48 096	47 159	53 730
Queensland	22 144	27 608	25 837	34 596
South Australia	16 073	19 624	24 582	24 726
Western Australia	44 474	43 999	41 110	50 779
Tasmania	8 024	11 408	10 201	10 308
Northern Territory	7 171	8 336	7 895	8 458
Australian Capital Territory	12 947	9 102	9 366	9 472
<i>Australia</i>	<i>419 511</i>	<i>431 335</i>	<i>443 101</i>	<i>482 363</i>
Overseas	34 350	37 500	34 770	42 070
<b>Total</b>	<b>453 861</b>	<b>468 835</b>	<b>477 851</b>	<b>524 433</b>

(a) Includes audiences at regional touring concerts, education concerts, subscription concerts and special events.

Source: *Musica Viva Australia*.

### Opera Australia

In 1997, the Australian Opera and the Victorian State Opera merged to become Opera Australia. More reliant on box office receipts than many of the world's arts companies, approximately 70% of Opera Australia's revenue comes directly from ticket sales.

With a repertoire spanning the history of opera, in excess of 200 mainstage performances are presented each year (table 12.15), making the company one of the three busiest opera companies in the world including the Vienna State Opera and the Metropolitan Opera, New York. To support this schedule, the company engages a full-time opera chorus and two resident orchestras — The Australian Opera and Ballet Orchestra, based in Sydney, and Orchestra Victoria in Melbourne. Further information about Opera Australia can be obtained from the web site, <<http://www.opera-australia.org.au>>.

### The Australian Ballet

The Australian Ballet, formed in 1962, is a full-time ensemble company that presents over 200 performances annually both in Australia and abroad. The company has received international acclaim for its presentations of great ballet classics, as well as modern repertoire created by Australian and international choreographers. Further information regarding the Australian ballet can be obtained from the web site, <<http://www.australianballet.com.au>>.

In 2002, the Australian Ballet gave 217 performances and employed 153 persons, consisting of 72 dancers and 81 other staff (table 12.16).

### 12.15 OPERA AUSTRALIA, Key indicators

	1998	1999	2000	2001	2002
Employees	1 175	1 118	1 389	1 254	1 266
Performances	237	237	196	225	222
Attendances	268 866	290 770	254 212	268 012	262 659

Source: *Opera Australia*.

## 12.16 THE AUSTRALIAN BALLET

	1997	1998	1999	2000	2001	2002
PERFORMANCES						
Theatres in Australia						
New South Wales	81	94	80	81	94	87
Victoria	62	58	48	61	63	62
Queensland	10	7	6	10	6	13
South Australia	6	8	6	8	13	11
Western Australia	6	—	—	6	—	11
Tasmania	—	—	—	—	—	5
Australian Capital Territory	8	7	—	6	6	6
Other venues in Australia						
Special events	—	—	—	16	5	—
Regional (The Dancers Company)	10	18	23	14	16	21
Open-air	1	1	1	1	1	1
Overseas	—	—	20	—	7	—
<b>Total</b>	<b>184</b>	<b>193</b>	<b>184</b>	<b>203</b>	<b>211</b>	<b>217</b>
EMPLOYMENT(a)						
Dancers	62	62	62	61	69	72
Other staff(b)	82	82	82	78	81	81
<b>Total</b>	<b>144</b>	<b>144</b>	<b>144</b>	<b>139</b>	<b>150</b>	<b>153</b>

(a) Average for the year. (b) Includes artistic, music, production, marketing and administration staff.

Source: *The Australian Ballet, 'Annual Reports'*.

## Film and video

### Film and video production

The film and video production industry comprises businesses mainly engaged in the production of motion pictures on film or video tape for theatre or television projection. Services such as casting, film editing and titling are also included.

Australia has a well-developed film and video production industry comprising, for the most part, small specialised companies. They produce programs ranging from feature films to sports coverage, documentaries and television commercials. A relatively small number of Australian companies engage exclusively in film and television drama production. The majority specialise in the production of commissioned programs such as commercials and corporate communications.

According to the Australian Film Commission (AFC), the major market for Australian audiovisual products is the domestic television broadcast industry. However, export markets are also important for feature films and television dramas, some high-budget documentaries and some commercials.

A survey of the film and video production industry was conducted by the ABS in respect of 1999–2000. At the end of June 2000, there were 1,975 businesses in the film and video production industry, employing 15,195 people. In 1999–2000, these businesses generated \$472.2m from the production of television programs, \$233.1m from the provision of production services to other businesses, \$262.6m from the provision of post-production or film laboratory services to other businesses and \$505.9m in other income.

Film and video production activity is not only undertaken by businesses in the film and video production industry, but also by businesses in the television services industry and the film and video distribution industry. During 1999–2000, businesses in these three industries incurred total film and video production costs of \$1,791.7m. Of these costs, \$1,315.4m was spent on productions specifically for television, \$243.0m on commercials and advertisements and \$233.4m on productions other than for television. These businesses completed, or were working on, 5,410 productions other than for television, of which 4,727 were corporate, marketing or training videos and 51 were feature films.

The Australian Government provides assistance and encouragement, through measures such as the investment program of the Film Finance Corporation Australia, the development program of the AFC and the Australian content regulations of the Australian Broadcasting Authority (ABA), for the production of high-cost feature films, television dramas and documentaries. Table 12.17 shows the number and value of Australian titles, as well as foreign titles shot in Australia, from 1996–97 to 2001–02.

Additional information about film and video production, can be obtained from the web sites: the AFC at <<http://www.afc.gov.au>>, Film Finance Corporation Australia at <<http://www.ffc.gov.au>>, and ScreenSound Australia at <<http://www.screensound.gov.au>>.

### Film and video distribution

The film and video distribution industry comprises businesses mainly engaged in leasing or wholesaling motion pictures on film, video tape or DVD to organisations for exhibition or sale. Agents mainly engaged in leasing and wholesaling films and videos to organisations are also included.

At 30 June 2000, there were 58 businesses in the industry, which employed 1,426 people. In 1999–2000 these businesses generated \$1,141.8m in total income and had an operating profit before tax of \$103.6m. The main sources of income were

the sale, rental or lease of prerecorded video tapes, disks, films and interactive software (\$841.1m), and the provision of channels to pay television broadcasters (\$169.2m).

### Motion picture exhibition

The motion picture exhibition industry comprises businesses mainly engaged in screening motion pictures on film, video tape or DVD. It also includes businesses mainly engaged in drive-in theatre operation, cinema operation and film or video festival operation.

The ABS conducted a survey on the motion picture exhibition industry in respect of 1999–2000. At the end of June 2000, there were 173 businesses in the industry, employing 9,282 people. At the end of June 2000, there were 326 cinema sites and 17 drive-in sites in Australia. While the number of cinema sites has remained virtually unchanged since June 1994, the number of drive-in sites has reduced from 41 sites in June 1994 to 28 sites in June 1997 to 17 sites in June 2000.

Since June 1994, the number of cinema screens has more than doubled, from 754 in June 1994 to 1,513 screens in June 2000. Paid admissions to cinemas increased by almost one-third, from 60 million paid admissions during 1993–94 to 79 million during 1999–2000.

**12.17 FILM AND VIDEO PRODUCTION, Number and value of titles(a)**

Type of film	1996–97		1997–98		1998–99		1999–2000		2000–01		2001–02	
	no.	\$m	no.	\$m	no.	\$m	no.	\$m	no.	\$m	no.	\$m
Features	36	198	41	246	45	292	34	412	34	368	39	545
Adult TV drama												
Mini-series	6	69	3	12	4	62	3	23	4	41	—	—
Series and serials	20	158	20	165	20	234	20	228	24	220	28	258
Telemovies	12	26	12	41	16	59	24	76	21	144	9	24
Children's TV drama	12	72	16	109	8	52	12	86	13	88	12	70

(a) Includes production budgets of Australian, co-produced and foreign features and TV dramas shot in Australia, and in-house production by television stations.

Source: Australian Film Commission.

## Cinema attendance

The 2002 Survey of Attendance at Selected Cultural Venues and Events found that 69.9% of the Australian population aged 18 and over (10.1 million people) attended a cinema, drive-in or other public screening of a film at least once in the 12 months prior to interview in 2002 (table 12.18). Attendance at cinemas was significantly higher than in 1999, when the attendance rate was 65.6% (9.2 million people).

**12.18 ATTENDANCE(a) AT CINEMAS — 2002**

Attendance rate(b)	%
Males	68.2
Females	71.6
Persons	69.9
Age group (years)	
18–24	92.1
25–34	81.0
35–44	76.7
45–54	69.9
55–64	56.7
65 and over	38.6
Birthplace	
Australia	71.7
Main English-speaking countries	75.9
Other countries	58.5

(a) Attendance at least once in the 12 months prior to interview in 2002. (b) The number of people who attended, expressed as a percentage of the number of people in that population group.

Source: *Attendance at Selected Cultural Venues and Events, Australia, 2002 (4114.0)*.

## Radio and television broadcasting

Broadcasting services in Australia are regulated primarily through the *Broadcasting Services Act 1992* (Cwlth). The Act identifies and defines categories of broadcasting services, establishes regulatory arrangements for broadcasting services, and establishes the Australian Broadcasting Authority as the independent regulator for radio and television in Australia.

The Act defines six categories of broadcasting services covering both radio and television:

- national broadcasting services — the Australian Broadcasting Corporation (ABC) and the Special Broadcasting Service (SBS), which are largely regulated through separate legislation

- community broadcasting services — non-profit free-to-air services provided for community purposes
- commercial broadcasting services — free-to-air radio and television services operated for profit and funded predominantly by advertising revenue
- subscription broadcasting services — services with general appeal to the public and funded predominantly by customer subscriptions
- subscription narrowcasting services — services with limited appeal to the public (either because of content or availability) and funded predominantly by customer subscriptions
- open narrowcasting services — services providing programs targeted to special interests groups (e.g. foreign language), or of limited appeal because of content or availability, and not funded by subscriptions.

## Australian Broadcasting Corporation (ABC)

The ABC has been in existence since 1932 as Australia's only national, non-commercial broadcaster. At 30 June 2003, the ABC's services included:

- a national television service simulcasting in digital and analog
- local television news services in each state and territory
- ABC Asia Pacific, an international television service broadcasting by satellite to Asia and the Pacific
- four national radio networks
- Radio Australia, an international radio service broadcasting by shortwave and digital satellite to Asia and the Pacific
- nine metropolitan radio stations in capital cities and Newcastle (New South Wales)
- 50 regional radio stations throughout Australia.

Further information about the ABC, including its publications, programs and broadcasts can be obtained from the web site, <<http://www.abc.net.au>>.

## Special Broadcasting Service (SBS)

SBS was established by the Commonwealth Government in 1978. Its principal function is to provide multilingual and multicultural radio and television services that inform, educate and entertain all Australians and, in doing so, reflect Australia's multicultural society.

Both SBS Radio and SBS Television broadcast nationally. The radio service has its origins in 1975 when ethnic radio stations 2EA in Sydney and 3EA in Melbourne began limited broadcasts. By 1996 SBS Radio had expanded to its current five-signal service broadcasting in 68 languages. It operates a national signal heard in all capital cities and major regional centres, and separate AM and FM services in Sydney and Melbourne. It broadcasts in more languages than any other radio network in the world.

SBS Television, which began in 1980, broadcasts programs in more than 60 languages that it obtains from over 400 national and international program sources. SBS commissions from independent Australian film-makers a range of programs — dramas, documentaries, comedies and animation — that reflect multicultural Australia. More than half of the programs broadcast are in languages other than English, but they are made accessible to all Australians through SBS-produced English language subtitles. Further information about the SBS can be obtained from the web site, <<http://www.sbs.com.au>>.

## Australian Broadcasting Authority (ABA)

The ABA, established in October 1992 under the *Broadcasting Services Act 1992* (Cwlth), is the regulator for radio and television broadcasting, digital broadcasting and Internet content in Australia. As well as planning the availability of segments of the broadcasting services bands (VHF/UHF television, FM and AM radio), the Authority has the power to allocate, renew, suspend and cancel licences and collect any fees payable for those licences.

Under the *Television Broadcasting Services (Digital Conversion) Act 1998* (Cwlth), the ABA was empowered to regulate for the introduction of digital broadcasting services in Australia from 1 January 2001.

In terms of broadcasting content, the ABA is empowered to:

- conduct research into community attitudes on programming matters
- develop program standards relating to broadcasting in Australia
- assist broadcasting service providers (licensees) develop codes of practice
- monitor compliance with licence conditions and codes of practice
- investigate complaints about services.

The ABA administers a regulatory scheme for Internet content which applies to Internet content hosts and Internet service providers. It also has a role in administering aspects of the *Interactive Gambling Act 2001* (Cwlth), including investigation of complaints about interactive gambling content and registration of industry codes of practice (and/or determination of industry standards) relating to certain interactive gambling matters. Further information about the ABA can be obtained from the web site, <<http://www.aba.gov.au>>.

## Television services industry

At the end of June 2000, in addition to the two public television broadcasters, there were 41 private sector television broadcasters, comprising 34 commercial free-to-air television broadcasting businesses (operating 48 television stations) and seven pay television broadcasting businesses (operating seven television stations). In 1999–2000 the private sector broadcasters earned a total income of \$4,181.9m and employed 10,668 persons. Commercial free-to-air television broadcasters recorded an operating profit before tax of \$803.5m, while pay television broadcasters reported a loss of \$675.8m.

## Support for the arts

### Cultural Ministers Council (CMC)

The CMC was established in 1984 to provide a forum for the exchange of views on issues affecting cultural activities in Australia and New Zealand. It comprises Australian Government, state and territory government ministers responsible for arts and cultural heritage, as well as the corresponding New Zealand government minister. The relevant minister from Papua New Guinea participates with observer status.

Governments are aware of the significance of the impact of cultural activities on general civic, social, political and economic development. One of the Council's many roles is to recognise and promote the linkages between the cultural aspects of our lives and the development of a robust Australian society. CMC's core activities include, therefore, the commissioning of studies and investigations through the appointment of working or advisory groups and/or consultants. The CMC's Statistics Working Group plays an important role in this regard. This group liaises with the ABS on cultural statistics; monitors the need for the development, collection and dissemination of culture and leisure statistics; commissions studies; and provides advice to the CMC on statistical matters. Additional information about the CMC and its activities can be obtained from the web site, <<http://www.dcita.gov.au/cmc>>.

### **Australia Council**

The Australia Council for the Arts is the Australian Government's arts funding and advisory body. It was formed as an interim council in 1973 and was given statutory authority by the *Australia Council Act 1975* (Cwlth).

The Australia Council supports Australian artists and arts organisations through diverse funding options, in order to allow them to pursue artistic excellence, to create and present their work, to take advantage of opportunities to improve and develop their skills, and to tour and promote their work to wider audiences nationally and internationally. It supports young, emerging, developing and established artists through a range of grant programs. These programs cover: Aboriginal and Torres Strait Islander arts; community and cultural development; dance; literature; major performing arts; music; new media arts; theatre; and visual arts and craft. Further information on the Australia Council and its activities can be obtained from the web sites: Australia Council for the Arts at <<http://www.ozco.gov.au>>, The Program at <<http://www.theprogram.net.au>>, and Australian Music Online at <<http://www.amo.org.au>>.

During 2001–02, some 4,674 grant applications were made to the Australia Council, of which 1,687 were successful. These grants totalled \$117.6m in 2001–02.

### **Training in the arts**

Training in the arts in Australia involves a broad range of organisations. Formal training is available through courses in TAFE institutions, universities and private institutions. A number of on-the-job training programs are also available in the arts, and many organisations offer in-house training programs for their staff. The last decade has seen the development in some states of multi-disciplinary tertiary institutions providing training in the arts.

A number of national specialised education institutions have been established to provide training in cultural fields. For example, the Australian Film, Television and Radio School is the national training centre for the film and broadcasting industries. The National Institute of Dramatic Art is the national training school for people who wish to enter the profession of theatre, film or television as actors, directors, designers, stage managers, theatre crafts technicians, production managers or teachers of voice and movement. The Australian Ballet School provides full-time training to the highest standard for young Australian dancers seeking a career in the classical dance profession. The Australian National Academy of Music offers master classes and short-term programs which bring distinguished national and international performers and music educators into contact with students.

Culture Research Education and Training Enterprise (CREATE) Australia is the national Industry Training Advisory Board for cultural industries. Its primary task is to help cultural industries develop and run high quality, relevant vocational education and training programs.

CREATE defines the cultural 'industry sectors' as:

- film, television, radio and multimedia
- music
- entertainment
- libraries
- museums and galleries
- visual arts, crafts and design
- performing arts
- community cultural development
- writing, publishing and journalism and
- zoos and botanic gardens.

Training packages and resource materials have been developed for the first six of these sectors and are being considered or developed for the other sectors. Each completed training package is regularly reviewed to ensure it is responsive to industry needs.

Further information about CREATE can be obtained from the web site, <<http://www.createaust.com.au>>.

## Festivals

Festivals have become a major part of Australian life and they offer a unique and valuable contribution to its culture. They range in size from small community celebrations to major cultural events, and they feature a variety of themes as diverse as flower arranging, heritage, food and wine, multicultural events, music and the arts.

An ABS survey on performing arts industries in Australia, in respect of 1999–2000, indicated that there were 152 performing arts festivals of more than two days duration. These comprised 72 music festivals and 71 multifaceted performing arts festivals, with the remaining 9 festivals focused on drama, comedy or dance. It is estimated that there were about 26,600 performing arts performances at these festivals, with total attendances estimated at 9.9 million people. Total income from these festivals was \$103m. The three main sources of income were ticket sales (\$42m), government funding (\$27m) and fundraising income (\$22m).

The ABS Work in Selected Culture and Leisure Activities Survey indicated that in the 12 months to April 2001, 193,900 people were involved in organising a festival of any type or duration, 24.5% of whom received some payment, and 50.3% of whom were women. In contrast, of the 317,500 people involved in fete organising, 3.9% received some payment and 73.6% were women.

## Religion

In 1983, the High Court of Australia defined religion as 'a complex of beliefs and practices which point to a set of values and an understanding of the meaning of existence'.

At the time of European settlement, the Aboriginal inhabitants followed their own religions which were animistic in nature, involving beliefs in spirits behind the forces of nature, and the influence of ancestral spirit beings.

During the 1800s, European settlers brought their traditional churches to Australia. These included the Church of England (now the Anglican Church), and the Methodist, Catholic, Presbyterian, Congregationalist and Baptist churches.

Section 116 of the 1900 Act to constitute the Commonwealth of Australia (Australian Constitution) provides that:

The Commonwealth of Australia shall not make any law establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

With the exception of a small but significant Lutheran population of Germanic descent, Australian society in 1901 was predominantly Anglo-Celtic, with 40% of the population being Anglican (then Church of England), 23% Catholic, 34% other Christian and about 1% professing non-Christian religions.

Further waves of migration helped to reshape the profile of Australia's religious affiliations over subsequent decades. The impact of migration from Europe in the aftermath of World War II led to increases in affiliates of the Orthodox Churches, the establishment of Reformed bodies, growth in the number of Catholics (largely from Italian migration), and the creation of ethnic parishes among many other denominations. More recently, immigration from South-East Asia and the Middle East has expanded Buddhist and Muslim numbers considerably, and increased the ethnic diversity of existing Christian denominations.

In response to the 2001 Census of Population and Housing question, Australians' stated religious affiliations were: 27% Catholic, 21% Anglican, 21% other Christian denominations and 5% non-Christian religions. Just over one-quarter of all Australians either stated they had no religion, or did not adequately respond to the question to enable classification of their religion.

A question on religious affiliation has been asked in every census taken in Australia, with the voluntary nature of this question having been specifically stated since 1933. In 1971, the instruction 'if no religion, write none' was introduced. This saw a seven-fold increase from the previous census year in the percentage of Australians stating they had no religion. Since 1971, this percentage has progressively increased to about 16% in 1996 and 2001. Table 12.19 provides a summary of the major religious affiliations at each census since 1901.

Table 12.20 shows the distribution of religious groupings by the number and percentage of affiliates at the 1996 and 2001 censuses, and the change which occurred during the five-year period. Affiliates of religions other than Christianity have shown the largest proportional increases since the 1996 census. Buddhist affiliates increased by 79%, Hindu affiliates by 42%, Islam affiliates by 40% and Judaism affiliates by 5%. These changes partly resulted from trends in immigration. Although the most common religious affiliation of immigrants is Christianity, affiliates of other religions are more highly represented among recent immigrants than in the total population. Between 1996 and 2001, there were just over half a million new arrivals to Australia. Of these, 9% were affiliated to Islam, 9% to Buddhism, 5% to Hinduism and 1% to Judaism.

Christian denominations had smaller proportional changes in the numbers of affiliates than the non-Christian religions. Between 1996 and 2001, Catholic affiliates increased by 4.2% and Baptist affiliates by 4.8%. However, as the Australian population grew by 6% during this period, the actual percentage of the population professing affiliation to these denominations remained virtually unchanged. The most notable decreases in Christian affiliation occurred for Churches of Christ (decreasing by 18%), the Uniting Church (decreasing by 7%), and Presbyterian and Reformed (decreasing by 6%). An increase was seen for Pentecostal affiliation, which increased by 11% between 1996 and 2001 (from 174,720). A substantial increase, associated with immigration from South Eastern Europe, was also seen for the Orthodox Churches, with the number of Orthodox affiliates increasing by 7% (from 497,015).

In 2001, 82% of Australians aged 65 years and over identified themselves as Christian, compared with 60% of 18–24 year olds. In contrast, the other religions have a younger age profile. For example, 15% of all Christian affiliates were aged 65 years and over, compared with 6% of Buddhist affiliates; and 8% of Christian affiliates were aged between 18 and 24 years, compared with 13% of Buddhist affiliates. The largest group of Buddhist affiliates was 35–44 year olds. Similar trends were evident for Hindu and Muslim affiliates. In the 2001 census, people in the 18–24 years age group were the most likely to state that they had no religion (20%).

### 12.19 MAJOR RELIGIOUS AFFILIATIONS

Census year	Christianity				Other religions	No religion	Not stated/ inadequately described	Total '000
	Anglican %	Catholic %	Other %	Total %				
1901	39.7	22.7	33.7	96.1	1.4	0.4	(a)2.0	<b>3 773.8</b>
1911	38.4	22.4	35.1	95.9	0.8	0.4	(a)2.9	<b>4 455.0</b>
1921	43.7	21.7	31.6	96.9	0.7	0.5	(a)1.9	<b>5 435.7</b>
1933	38.7	19.6	28.1	86.4	0.4	0.2	12.9	<b>6 629.8</b>
1947	39.0	20.9	28.1	88.0	0.5	0.3	11.1	<b>7 579.4</b>
1954	37.9	22.9	28.5	89.4	0.6	0.3	9.7	<b>8 986.5</b>
1961	34.9	24.9	28.4	88.3	0.7	0.4	10.7	<b>10 508.2</b>
1966	33.5	26.2	28.5	88.2	0.7	0.8	10.3	<b>11 599.5</b>
1971	31.0	27.0	28.2	86.2	0.8	6.7	6.2	<b>12 755.6</b>
1976	27.7	25.7	25.2	78.6	1.0	8.3	11.4	<b>13 548.4</b>
1981	26.1	26.0	24.3	76.4	1.4	10.8	11.4	<b>14 576.3</b>
1986	23.9	26.0	23.0	73.0	2.0	12.7	12.4	<b>15 602.2</b>
1991	23.8	27.3	22.9	74.0	2.6	12.9	10.5	<b>16 850.3</b>
1996	22.0	27.0	21.9	70.9	3.5	16.6	9.0	<b>17 752.8</b>
2001	20.7	26.6	20.7	68.0	4.9	15.5	11.7	<b>18 769.2</b>

(a) Includes 'object to state'.

Source: ABS data available on request, *Census of Population and Housing*.

## 12.20 RELIGIOUS AFFILIATION

	1996		2001		Change
	'000	%	'000	%	%
Christianity					
Anglican	3 903.3	22.0	3 881.2	20.7	-0.6
Baptist	295.2	1.7	309.2	1.6	4.8
Catholic	4 799.0	27.0	5 001.6	26.6	4.2
Churches of Christ	75.0	0.4	61.3	0.3	-18.2
Jehovah's Witness	83.4	0.5	81.1	0.4	-2.8
Lutheran	250.0	1.4	250.4	1.3	0.2
Orthodox	497.0	2.8	529.4	2.8	6.5
Pentecostal	174.7	1.0	194.6	1.0	11.4
Presbyterian and Reformed	675.5	3.8	637.5	3.4	-5.6
Salvation Army	74.1	0.4	71.4	0.4	-3.7
Uniting Church	1 334.9	7.5	1 248.7	6.7	-6.5
Other Christian	420.6	2.4	497.9	2.7	18.4
Buddhism	199.8	1.1	357.8	1.9	79.1
Hinduism	67.3	0.4	95.5	0.5	41.9
Islam	200.9	1.1	281.6	1.5	40.2
Judaism	79.8	0.4	84.0	0.4	5.2
Other religions	68.6	0.4	92.4	0.5	34.6
No religion	2 948.9	16.6	2 906.0	15.5	-1.5
Not stated/inadequately described	1 604.7	9.0	2 187.7	11.7	36.3
<b>Total</b>	<b>17 752.8</b>	<b>100.0</b>	<b>18 769.2</b>	<b>100.0</b>	<b>5.7</b>

Source: ABS data available on request, 1996 and 2001 Censuses of Population and Housing.

## Employment and participation in cultural activities

### Employment in cultural occupations

The five-yearly Census of Population and Housing provides information on the number and characteristics of people aged 15 years and over whose main job in the week prior to the census was in a cultural occupation. People who had unpaid involvement in cultural activities, or who worked part-time in cultural activities but had another job they regarded as their main job in the week prior to the census, would not be recorded in the census as being in cultural occupations.

The 2001 census found that 3.1% (259,909 persons) of employed persons in Australia worked in a cultural occupation, slightly higher than the 3.0% (229,330 persons) of employed persons at the time of the 1996 census. In 2001, 56.1% of all persons employed in cultural occupations as their main job were males and 43.9% were females. In 1996, the percentage of females employed in cultural occupations (42.8%) was slightly lower.

Table 12.21 shows the number and sex of people who were recorded as having a main job in selected cultural occupations in the 2001 Census of Population and Housing. The ten occupations shown are those in which the highest numbers of people were employed.

### 12.21 CULTURAL OCCUPATIONS WITH HIGHEST NUMBERS OF EMPLOYED PERSONS — 2001

Occupation	Males	Females	Persons
Printing tradesperson(a)	22 943	4 736	<b>27 679</b>
Graphic designer	11 545	9 599	<b>21 144</b>
Minister of religion	11 415	2 823	<b>14 238</b>
Architects and landscape architects(b)	10 064	3 037	<b>13 101</b>
Librarian	1 748	8 565	<b>10 313</b>
Music teacher (private)	2 569	5 876	<b>8 445</b>
Library assistant	1 174	7 224	<b>8 398</b>
Photographer	4 453	2 392	<b>6 845</b>
Instrumental musician	5 070	1 555	<b>6 625</b>
Architectural associate	5 223	1 188	<b>6 411</b>

(a) Comprises Printing tradespersons n.f.d., Graphic pre-press tradespersons, Printing machinists and small offset printers, Binders and finishers and Screen printers.  
(b) Comprises Architects and landscape architects n.f.d., Architect and Landscape architect.

Source: *Employment in Culture, Australia, 2001* (6273.0).

Indigenous Australians made up 1.0% (2,573) of all persons employed in cultural occupations at the time of the 2001 census. Table 12.22 shows the ten cultural occupations in which the highest numbers of Indigenous Australians were employed. Relatively high numbers of Indigenous Australians were employed in arts and crafts occupations, in particular as Painters (visual arts).

### 12.22 CULTURAL OCCUPATIONS IN WHICH HIGHEST NUMBERS OF INDIGENOUS AUSTRALIANS EMPLOYED — 2001

Occupation	Indigenous Australian persons
Visual arts and crafts professionals n.e.c.	342
Painter (visual arts)	221
Printing tradesperson(a)	211
Park ranger	154
Minister of religion	107
Artists and related professionals n.f.d.	106
Graphic designer	93
Library assistant	85
Dancer or choreographer	73
Radio presenter	71

(a) Comprises Printing tradespersons n.f.d., Graphic pre-press tradespersons, Printing machinists and small offset printers, Binders and finishers and Screen printers.

Source: *Employment in Culture, Australia, 2001* (6273.0).

### Involvement in culture and leisure activities

The most recent data about the involvement of persons aged 15 years and over in selected culture and leisure activities were collected in April 2001 as part of the ABS Work in Selected Culture and Leisure Activities Survey. During the 12 months prior to interview in April 2001, an estimated 2.5 million persons (16.8% of the Australian population aged 15 years and over) were involved in some form of paid or unpaid work relating to the culture and leisure activities covered in the survey. These figures exclude involvement solely for the respondent's own use or that of their family.

As table 12.23 shows, the Australian Capital Territory had the highest participation rate in culture and leisure activities (28.8%) for residents aged 15 years and over, and this was significantly higher than the Australian participation rate of 16.8%.

More persons had paid involvement in writing (214,800), design (210,700) and visual art activities (175,800) than in any other culture or leisure activity in the survey. Of those involved in writing, 40.0% received payment; for design, 60.2% received payment; while for visual art activities, 34.9% received payment. The activity with the highest percentage of people with paid involvement was television, with 64.6% of the 83,600 people involved receiving some payment.

### 12.23 PERSONS INVOLVED IN CULTURE AND LEISURE ACTIVITIES — 2001

	Some paid involvement(a)	Unpaid involvement only	Total persons involved	Persons with no involvement	Total persons	Participation rate
	'000	'000	'000	'000	'000	%
New South Wales	291.2	465.6	756.8	4 311.5	5 068.4	14.9
Victoria	222.2	416.6	638.8	3 141.7	3 780.5	16.9
Queensland	163.1	334.8	497.9	2 272.8	2 770.7	18.0
South Australia	74.7	140.9	215.6	965.6	1 181.2	18.3
Western Australia	91.3	157.1	248.4	1 220.8	1 469.2	16.9
Tasmania	20.1	45.8	65.9	297.8	363.7	18.1
Northern Territory(b)	8.8	11.4	20.2	90.7	110.9	18.2
Australian Capital Territory	28.5	39.3	67.8	167.9	235.7	28.8
<b>Australia</b>	<b>900.0</b>	<b>1 611.5</b>	<b>2 511.5</b>	<b>12 468.7</b>	<b>14 980.2</b>	<b>16.8</b>

(a) Includes persons who only received payment in kind. Of the 900,000 people who received some payment, 53,700 (6.0%) only received payment in kind. (b) Refers to mainly urban areas only.

Source: *Work In Selected Culture and Leisure Activities, Australia, April 2001* (6281.0).

The Voluntary Work Survey conducted by the ABS in 2000 found that organisations categorised as 'sports and physical recreation', 'education, training and youth development' and 'community and welfare' each received help from about one million people aged 18 years and over. By comparison, 280,200 people (2% of the population) in Australia undertook voluntary work for cultural organisations. Of these, 58% were female and 42% were male. Some of these people provided voluntary work to more than one cultural organisation, so that there was a total of 306,400 voluntary involvements in cultural organisations. The most common type of cultural involvement was with organisations involved in the performing arts (102,600 or 34% of all cultural involvements).

### How Australians spend their free time

Generally, Australians fit their leisure activities into their free time, that is, the time left over after personal, family, educational and employment responsibilities. The 1997 Time Use Survey showed that Australians aged 15 years or more spent on average about 5 hours (316 minutes) or 22% of their time per day on free time activity as their main activity (table 12.24). People frequently undertake more than one activity at the same time (e.g. housework and listening to the radio). If simultaneous activities are included, Australians spent just over nine hours (552 minutes) on free time activities. Time spent using audio and audiovisual media (e.g. listening to the radio and watching television) showed the largest increase when comparing all activities (including simultaneous activities) with main activities. As a main activity, an average of just over two hours (131 minutes) was spent on using audio and audiovisual media. However, when simultaneous activities were included, time spent on this activity nearly doubled to over four hours (257 minutes).

### 12.24 AVERAGE TIME SPENT ON FREE TIME ACTIVITIES(a) — 1997

	Main activity minutes per day	All activities minutes per day
<b>Social and community interaction</b>		
Socialising	11	12
Visiting entertainment and cultural venues	5	5
Religious activities and ritual ceremonies	5	5
Other	24	24
<b>Total</b>	<b>45</b>	<b>47</b>
<b>Recreation and leisure</b>		
Sport and outdoor activity	27	28
Games, hobbies, arts and crafts	16	20
Reading	25	37
Audio and audiovisual media	131	257
Talking (including phone)	35	115
Other	35	48
<b>Total</b>	<b>271</b>	<b>505</b>
<b>Total</b>	<b>316</b>	<b>552</b>

(a) Free time is the amount of time left over after necessary time, committed time and contracted time have been taken out of a person's day. Necessary time includes time spent on activities such as sleeping, eating and personal care. Committed time includes time spent on activities such as housework, care of children and shopping. Contracted time includes time spent on paid work and regular education.

Source: *Time Use on Culture/Leisure Activities, 1997* (4173.0).

### Household expenditure on culture

Regular surveys on household expenditure are conducted by the ABS, with the most recent conducted in respect of 1998–99. Findings from this survey showed that Australian households spent, on average, \$27.19 per week on selected cultural goods and services in 1998–99 (table 12.25), which was 3.9% of their average weekly expenditure on all goods and services. From 1984 to 1998–99, total household expenditure on culture increased by 45.7% after adjusting for price changes. The 1998–99 survey found that cultural items for which average household expenditure was relatively large included books (\$3.11 per week), televisions (\$2.62 per week), newspapers (\$2.54 per week) and pre-recorded compact discs and records (\$1.91 per week).

**12.25 EXPENDITURE ON CULTURE BY AUSTRALIAN HOUSEHOLDS — 1998–99**

	Average weekly household expenditure	Total annual household expenditure
	\$	\$m
Literature	7.55	2 804.0
Music	2.06	765.1
Performing arts	1.48	549.6
Visual arts and crafts	1.54	571.9
Broadcasting, electronic media and film	4.13	1 533.8
Other arts	1.35	501.4
Heritage	0.17	63.1
Other culture	8.90	3 305.3
<b>Total expenditure on culture</b>	<b>27.19</b>	<b>10 097.9</b>

Source: Cultural Ministers Council Statistics Working Group, 'Household Expenditure on Culture, May 2002'.

## Funding for culture

### Government funding

In Australia, all three levels of government provide funding for cultural activities, facilities and services.

Total government funding for cultural activities was \$4,676.8m in 2001–02. Of this, the Australian Government contributed \$1,619.6m (35%), state and territory governments contributed \$2,215.2m (47%) and local governments provided \$841.9m (18%).

Total government funding for cultural activities, facilities and services increased by \$238.8m (5%) in 2001–02. While funding from the state and territory governments increased by 16%, funding from the Australian Government and local governments fell by 2% and 4% respectively. There was a greater increase in total government funding in 2000–01 (\$376.8m or 9%) when compared with funding in 1999–2000, with increases reported for all levels of government.

In 2001–02, funding of almost \$1b (\$988.9m or 21% of total cultural funding) was allocated to broadcasting and film activities by the Australian Government, and state and territory governments. While local governments may also have provided funds to these activities, it is not possible to determine their contribution as comprehensive funding details for local governments are not available for 2001–02. The other major recipients of government funding were nature parks and reserves (\$977.4m), 'other museums' (which consists of museums other than art museums) (\$493.7m), and libraries and archives (\$466.7m) (table 12.26).

Local governments are significant providers of library services to the community. For 2000–01, when more details of local government funding were available, libraries and archives received more than half of the cultural funding provided by local governments (\$458.7m out of a total of \$872.4m). This was 55% of the total funding provided to libraries and archives by all three levels of government.

### Business funding

The ABS conducted a Business Generosity Survey in respect of 2000–01. During that period, businesses gave \$1,447m to organisations or individuals, of which arts and culture activities (namely the performing arts; the creative arts; museum, art gallery and library activities; and zoological or botanical parks and gardens operation) received \$70m. This comprised \$40m of sponsorship, \$23m of donations and over \$6m of 'business to community projects' funding. Sport and recreation activities received 43% of the total given by businesses to organisations or individuals. For additional information see the section *Funding for sport and recreation*. Other activities covered by the survey were community service and welfare, health, education and training, and environmental activities.

## 12.26 CULTURAL FUNDING, By government — 2001–02

	Level of government		
	Australian \$m	State/territory \$m	Local \$m
<b>Heritage</b>			
Art museums	47.9	176.5	n.a.
Other museums	227.4	266.3	n.a.
Nature parks and reserves	76.7	900.7	n.a.
Zoological parks, aquaria and botanic gardens	6.9	102.4	n.a.
Libraries and archives	111.4	355.3	n.a.
<i>Total</i>	470.3	1 801.1	n.a.
<b>Arts</b>			
Literature and print media	21.9	3.6	n.a.
Performing arts	92.7	88.7	n.a.
Performing arts venues	3.0	161.7	n.a.
Public halls and civic centres	—	0.6	n.a.
Visual arts and crafts	13.5	10.8	n.a.
Broadcasting and film	914.0	74.9	n.a.
Community cultural activities	24.7	21.8	n.a.
Administration of culture	35.2	37.5	n.a.
Other arts n.e.c.	44.5	14.4	n.a.
<i>Total</i>	1 149.3	414.1	n.a.
<b>Total</b>	<b>1 619.6</b>	<b>2 215.2</b>	<b>841.9</b>

Source: *Cultural Funding by Government, Australia, 2001–02 (4183.0)*.

### Children's participation in cultural and leisure activities

A survey of children's activities in the 12 months to April 2000 found that 29% of children aged 5–14 years (777,700 children) were involved in at least one of four selected organised cultural activities outside of school hours.

Girls were twice as likely as boys (40% compared with 20%) to participate in at least one of these activities (table 12.27). Girls were also more likely than boys to be involved in two or more of the selected activities (10% of girls compared with 3% of boys). The rate of children's participation in at least one of the organised cultural activities ranged from 22% in the Northern Territory to 34% in the Australian Capital Territory.

Playing a musical instrument was the most popular of the selected cultural activities (18%), followed by dancing (10%), singing (5%) and drama (5%). The activity with the highest ratio of girls to boys was dancing, with 11 times more girls participating than boys.

During the 12-month period, 93% of those children who were involved in dancing had dancing lessons, 75% of those playing a musical instrument had lessons, 69% of those involved in drama had lessons, and 57% of those involved in singing had lessons.

In the two school weeks prior to interview in April 2000, 44% of children (34% of boys and 55% of girls) undertook art and craft activities. This compares with 97% of children who watched television or videos and 69% who played electronic or computer games.

Further details about children's participation in organised sports and other leisure activities are outlined in *Children's participation in sports and leisure activities*.

### Sport and recreation

Australia is recognised internationally as a nation that is very much involved in sport. Sport and recreation form an integral part of Australian culture and there are believed to be many benefits associated with participating in sport and physical activity, including enjoyment, social interaction, health, personal achievement, national pride and community involvement. In many ways sport unites and personifies the nation. Interestingly, before Australia was federated as a nation, Australians were competing internationally as 'Australia'.

**12.27 CHILDREN INVOLVED IN SELECTED ORGANISED CULTURAL ACTIVITIES(a),  
Participation rate — April 2000**

	Age (years)										All children %
	5 %	6 %	7 %	8 %	9 %	10 %	11 %	12 %	13 %	14 %	
<b>Males</b>											
Playing a musical instrument	*4.0	9.8	11.0	16.5	17.0	20.4	20.2	20.8	19.7	18.1	15.8
Singing	**1.1	**0.6	*2.1	*3.2	*3.8	*4.1	*3.0	*4.4	*3.6	*2.8	2.9
Dancing	**1.2	*2.2	*2.1	**0.8	*1.5	*1.6	**0.5	*2.8	*2.7	*1.7	1.7
Drama	**0.1	*1.3	*3.6	*3.5	*2.8	*4.7	*2.4	*4.3	*4.2	*4.8	*3.2
<i>Total(b)</i>	6.2	12.6	15.2	20.5	20.5	25.2	23.5	24.6	24.4	24.0	19.7
<b>Females</b>											
Playing a musical instrument	5.4	8.2	15.6	23.7	24.1	27.3	29.4	23.0	23.7	20.0	20.2
Singing	**1.1	*3.5	*4.1	7.5	7.7	10.3	7.7	8.8	7.6	7.7	6.7
Dancing	23.3	25.0	22.0	21.0	21.4	19.5	20.4	15.2	15.7	11.6	19.5
Drama	**0.7	*2.6	*5.1	5.8	5.7	7.8	7.2	10.5	8.4	7.0	6.1
<i>Total(b)</i>	27.9	32.8	37.1	41.8	44.8	45.0	48.0	42.1	41.5	34.6	39.7
<b>Persons</b>											
Playing a musical instrument	4.7	9.1	13.2	20.1	20.5	23.7	24.5	22.0	21.7	19.0	17.9
Singing	*1.1	*1.9	3.0	5.3	5.8	7.0	5.2	6.7	5.6	5.1	4.7
Dancing	12.1	12.9	11.7	10.8	11.3	10.1	9.9	9.3	9.1	6.5	10.4
Drama	**0.4	*1.9	4.3	4.6	4.2	6.2	4.7	7.5	6.3	5.8	4.6
<i>Total(b)</i>	16.9	22.0	25.8	31.1	32.5	34.6	35.1	33.8	32.8	29.1	29.4

(a) Outside of school hours during the 12 months prior to interview in April 2000. (b) The sum of activities may not add to the total because some children were involved in more than one activity.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2000 (4901.0)*.

## Sport and recreation administration

Governments invest in sport and recreation because it returns both tangible and intangible benefits to the nation. Governments of all levels play an important role in the development of Australian sport and recreation. The provision of quality facilities, whether they be state of the art stadiums or community cycling paths, encourages physical activity and, importantly, good health.

### Sport and Recreation Ministers' Council (SRMC)

The SRMC provides the major mechanism for liaison between the Australian Government and state and territory governments on matters concerned with sport and recreation in Australia and, more recently, in New Zealand and Papua New Guinea. The SRMC is a forum for consultation and cooperation between the

respective governments, with its membership comprising ministers with prime responsibility for sport and recreation.

The Standing Committee on Recreation and Sport (SCORS) — comprising representatives of the relevant ministers' departments and the Australian Sports Commission — provides advice and administrative support to the SRMC.

The Recreation and Sport Industry Statistics Group is a sub-committee of SCORS. Its role is to improve the range and quality of information on sport and recreation, including data and research on participation, economics, consumption and social impacts. It comprises representatives from Australian Government, state and territory departments responsible for sport and recreation, the ABS, the Australian Sports Commission and Sport Industry Australia.

## **National Sporting Organisations (NSOs)**

Sports in Australia are managed and coordinated by National Sporting Organisations (NSOs). Each organisation manages the participation and development of a specific sport in Australia. They are able to offer guidance and further contacts for those seeking information on their sport. There are 129 such organisations in Australia. More information about most of these organisations can be obtained from the web site, Australian Sports Commission web site at <<http://www.ausport.gov.au/info/sportdirectory/ascstatus.asp>>.

## **Australian Sports Commission (ASC)**

The ASC is the Australian Government agency responsible for the funding and development of sport at the national level. The ASC supports a wide range of programs designed to develop sporting excellence and increase participation in sports by all Australians. The ASC works with a range of stakeholders, including national sporting organisations, to achieve the Government's sport policy objectives.

The ASC's national leadership role is achieved through three operational areas: the Australian Institute of Sport, the Sport Performance and Development Group and the Business Operations Group.

The Australian Institute of Sport (AIS) is responsible for developing elite sport on a national basis with a particular focus on success at the international level. For the purposes of elite sports development, it integrates sport science and medical services, sports management activities, funding, athlete welfare and implementation of the technical requirements for sporting success. The AIS conducts a national scholarship program that includes 35 programs in 26 sports, involving approximately 700 athletes.

The ASC's Sport Performance and Development Group provides funding and services to NSOs to support their operations, which include high performance activities and sport development programs. In particular, the Group assists NSOs to develop community grass-roots participation and sports programs for special interest groups (e.g. women, Indigenous Australians and people with disabilities). The Group also provides funding, products and services to assist NSOs to become more self-sufficient, and to adopt improved business and management practices.

The ASC's Business Operations Group, in addition to providing corporate and support services to the ASC, manages the AIS facilities and operates the National Sport Information Centre. The Group also manages and delivers the ASC's international program, aimed at providing sport development services to international sporting organisations and agencies.

More information about the Australian Sports Commission and the Australian Institute of Sport can be obtained from the web sites, <<http://www.ausport.gov.au>> and <<http://www.ais.org.au>>.

## **Australian Sports Drug Agency (ASDA)**

The ASDA is the custodian of Australia's athlete anti-doping program and it plays a leading role, within Australian and international sports communities, in delivering drug testing and education services. ASDA also provides policy advice to sporting organisations and the Australian Government regarding 'drugs in sport' issues. ASDA is an independent statutory authority and was established in 1990. The Australian Sports Drug Agency web site is <<http://www.asda.org.au>>.

## **Australia Sport International (ASI)**

ASI was established in 1997 with the support of the Australian Government to connect international businesses to Australian suppliers of sport- and recreation-related goods and services. ASI helps organisations in the Australian sports and recreation industry to enhance their export performance by providing access to a range of services designed to support their international marketing efforts. Further information on ASI can be obtained from the web site, <<http://www.asi.gov.au>>.

## **Sport Industry Australia (SIA)**

SIA is the industry association and national peak body for sport in Australia. Previously known as the Confederation of Australian Sport, it was established in 1976 to advance the interests of the Australian sports community and to give the industry an united voice in discussions and negotiations with governments and key stakeholders.

Sport Industry Australia's core membership base comprises Australia's NSOs. SIA members also include a number of sport businesses and state and national organisations associated with the sport industry Australia wide.

Further information about SIA and its activities can be obtained from the web site, <<http://www.sportforall.com.au>>.

### **Sport and Recreation Training Australia (SRTA)**

SRTA is a national Industry Training Advisory Board for sport and recreation industries.

The primary roles of SRTA are to advise government on, and assist industry with, vocational education and training matters for the sport and recreation industries.

SRTA has developed training packages for various sectors of the sport and recreation industry, including outdoor recreation, sport, fitness and community recreation. The former two packages were re-released in 2002 and are available from the web site, <<http://www.insportandrecreation.net>>. The latter two packages are currently under review and are due for re-release in 2004. Further information on Sport and Recreation Training Australia can be obtained from the web site, <<http://www.srtaustralia.org.au>>.

### **Australian Council for Health, Physical Education and Recreation (ACHPER)**

ACHPER is a national professional association representing people who work in the areas of health education, physical education, recreation, sport, dance, community fitness or movement sciences.

ACHPER is a membership-based non-profit organisation, governed by a volunteer board comprising professionals from educational and community sectors. ACHPER advocates and lobbies for the promotion and provision of health and physical education, sport, recreation and dance; undertakes research; conducts teacher professional development programs; and conducts leadership training programs for community fitness instructors. The ACHPER web site is <<http://www.achper.org.au>>.

## **Funding for sport and recreation**

### **Government funding for sport and recreation**

Total expenditure by all three levels of government on sport and recreation activities in 2000–01 was \$2,124.2m. Of this, Australian Government expenditure was \$198.9m (9.4% of the total), state and territory governments spent \$875.2m (41.2%) and local governments spent \$1,050.1m (49.4%) (table 12.28). Of all

government expenditure on sport and recreation activities, recurrent expenditure (\$1,585.5m) was much larger than capital expenditure (\$538.6m).

The Sydney 2000 Olympic and Paralympic Games were held in the 2000–01 financial year. While the Australian Government and New South Wales Government contributed most of the funding for this event, other state and territory governments also provided funds for hosting events and providing training venues for overseas athletes. The Australian Government contributed an estimated \$71.8m, while the New South Wales Government provided \$382.3m for this event.

### **Business funding**

According to the ABS Business Generosity Survey, during 2000–01 businesses gave \$1,447m to organisations and individuals, of which sport and recreation activities (which included the operation of sporting events, clubs and teams; indoor or outdoor recreational facility operations; social, leisure and hobby club activities; and recreational parks and gardens operations) received \$628m (43%). This comprised \$480m of sponsorship, \$109m of donations and \$39m of 'business to community projects' funding. Activities associated with sport and recreation attracted the most business sponsorship funding compared with the other activities surveyed, namely community service and welfare, arts and culture, health, education and training, and environmental activities.

### **Sports and physical recreation services**

The ABS conducted a series of surveys of the sports and physical recreation industries in respect of 2000–01.

At the end of June 2001, there were 7,147 employing organisations involved in the provision of sports and physical recreation activities (table 12.29). This total comprised: 1,034 horse and dog racing organisations; 667 health and fitness centres and gymnasias; 864 other sports and physical recreation venues; 756 sports and physical recreation administrative organisations (collectively referred to below as 'sports administration'); 1,937 sports and physical recreation clubs, teams and sports professionals (collectively referred to below as 'sports clubs'); and 1,259 other sports and physical recreation support services. These organisations had a total income of \$8,466m and expenses of \$8,608m in 2000–01. At the end of June 2001 the organisations employed 98,267 people and during that month they were assisted by 178,837 volunteers.

## 12.28 SPORT AND RECREATION FUNDING, By level of government — 2000–01

Category of funding	Level of government				Proportion of total %
	Australian \$m	State and territory \$m	Local \$m	Total \$m	
Administration and regulation					
Administration, policy and planning	29.8	74.2	37.3	141.2	6.6
Regulation and control	39.7	20.3	4.6	64.6	3.0
<i>Total</i>	69.5	94.4	41.9	205.8	9.7
Venues, grounds and facilities					
Venues and sports grounds(a)	14.5	185.8	410.1	610.5	28.7
Recreation parks and waterways	—	94.4	587.4	681.8	32.1
<i>Total</i>	14.5	280.2	997.5	1 292.2	60.8
Participation and special events					
Participation by clubs, teams and individuals	2.4	67.0	6.5	75.9	3.6
Special events(b)	77.0	374.9	—	451.9	21.3
<i>Total</i>	79.4	441.9	6.5	527.8	24.8
Other services					
Horse and dog racing	—	22.5	n.a.	22.5	1.1
Coaching and training	24.4	26.5	n.a.	50.9	2.4
Other support services	11.2	9.6	n.a.	20.8	1.0
<i>Total</i>	35.5	58.6	4.2	98.4	4.6
<b>Total</b>	<b>198.9</b>	<b>875.2</b>	<b>1 050.1</b>	<b>2 124.2</b>	<b>100.0</b>

(a) Includes funding for Sydney 2000 Olympic and Paralympic Games venues. (b) Includes funding for Sydney 2000 Olympic and Paralympic Games, excluding venues.

Source: *Sport and Recreation Funding by Government, Australia, 2000–01* (4147.0).

There is considerable variation in the nature of the industries. For example, while 44% of the private sector organisations were 'not for profit', these were mainly concentrated in the sports administration industry, in which all 756 organisations operated on a 'not for profit' basis, and in the sports clubs industry, in which 1,565 (81%) were not for profit. The sports administration and sports clubs industries were also responsible for the vast majority (94%) of the volunteers working for sports and physical recreation industries during the month of June. There were nine volunteers for each one employee in the sports administration industry in June 2001, and the ratio was 2.7 volunteers to 1 employee in the sports clubs industry. Employees outnumbered volunteers in each of the other industries.

At least 60% of the employees in the sports administration, sports clubs and the horse and dog racing industries were males. Health and fitness centres and gymnasia had the highest level of female employment, both in absolute terms (8,062) and as a percentage of persons employed (64%). Casual employment was a feature of all of the industries. The percentage of employees

employed on a casual basis ranged from 52% in the sports clubs industry to 71% in health and fitness centres and gymnasia.

The main sources of income for each industry, excluding the income earned by the Sydney Organising Committee for the Olympic Games and the Sydney Paralympic Organising Committee, were:

- for the horse and dog racing industry, net industry and TAB distributions (49% of total income) and training fees (12%)
- for health and fitness centres and gymnasia, membership fees (65%) and casual playing fees (19%)
- for other sports and physical recreation venues, casual playing fees (40%) and rent, leasing and hiring income (8.5%)
- for sports administration, admissions including season ticket memberships (20%) and sponsorship and fundraising (18%)
- for sports clubs, subscription or membership fees (23%) and sponsorship and fundraising (18%)

## 12.29 SPORTS AND PHYSICAL RECREATION INDUSTRIES — 2000–01

	Units	Horse and dog racing	Health and fitness centres(a)	Other sports venues(b)	Sports administration(c)	Sports clubs(d)	Other sports services(e)	Government organisations	Total
<b>Businesses/ organisations at 30 June 2001</b>									
For profit	no.	750	620	745	—	372	1 181	—	3 668
Not for profit	no.	284	47	119	756	1 565	78	—	2 849
Government	no.	—	—	—	—	—	—	630	630
<b>Total</b>	<b>no.</b>	<b>1 034</b>	<b>667</b>	<b>864</b>	<b>756</b>	<b>1 937</b>	<b>1 259</b>	<b>630</b>	<b>7 147</b>
<b>Total employment at end June 2001</b>									
Males	no.	9 641	4 490	8 239	8 443	15 736	3 141	—	(f)49 690
Females	no.	6 259	8 062	7 603	3 370	7 575	4 887	—	(f)37 756
<b>Persons</b>	<b>no.</b>	<b>15 900</b>	<b>12 552</b>	<b>15 842</b>	<b>11 814</b>	<b>23 312</b>	<b>8 028</b>	<b>10 820</b>	<b>98 267</b>
<b>Total volunteers during the month of June</b>									
	no.	n.a.	*546	*7 962	106 427	61 950	1 952	—	178 837
Total income	\$m	1 135.6	294.3	3 563.1	1 146.7	1 381.8	215.2	729.5	8 466.2
Total expenses	\$m	1 107.3	278.1	3 583.6	1 100.2	1 386.9	186.5	965.3	8 607.9
<b>Operating profit/surplus before tax(g)</b>									
	\$m	30.6	16.0	*-18.6	45.7	**-12.5	28.0	—	89.3

(a) Also includes gymnasias. (b) Also includes grounds and other facilities mainly used for physical recreation purposes. (c) Includes sports and physical recreation administrative organisations. (d) Includes sports and physical recreation clubs, teams and sports professionals. (e) Includes sports services such as education and coaching. (f) Excludes Government organisations. (g) This item is derived as total income minus total expenses, plus closing inventories minus opening inventories.

Source: *Sports Industries, Australia, 2000–01* (8686.0).

- for sports and physical recreation support services, which include sports coaches, personal fitness training services and sports management services, 57% of the total income mainly comprised fees for services, such as fees for coaching and other specialist sports services.

Additional information on sports and recreation activities can be found in *Sports and physical recreation services, Chapter 20, Services industries*.

### Amusement and leisure industries

The latest ABS surveys of major amusement and theme parks, and amusement centres were conducted in respect of 2000–01. Major amusement and theme parks were defined as parks which were operated on a commercial basis, were permanently based at a fixed site, had multiple rides and attractions and had over 50,000 attendees for the year.

At the end of June 2001, there were 30 major amusement and theme parks operating in Australia, and these employed 4,150 persons. During 2000–01, there were 8.9 million visits to these amusement and theme parks. Total income for businesses operating these parks was \$287m.

The seven parks in Queensland earned 71% of this total income and had 59% of the total employment; and the 12 parks in New South Wales earned 24% of the total income and had 36% of the total employment.

Amusement centres include indoor play centres, amusement machine centres, mini golf centres, go-kart venues and similar operations. At the end of June 2001, there were 288 businesses operating amusement centres in Australia. These operations were carried out at 384 locations — 236 in capital cities and suburbs and 148 in other areas. Of the 384 locations, 138 were amusement machine centres. Amusement centres employed 2,793 people at the end of June 2001 and earned a total income of \$136.9m in 2000–01 (table 12.30).

### Employment, involvement and participation in sports and physical activities

#### Employment in sport and physical recreation occupations

The five-yearly Census of Population and Housing provides information on the number and characteristics of people aged 15 years and over

whose main job in the week prior to the census was in a sport and physical recreation occupation. People who had unpaid involvement in sport and physical recreation activities and people who worked in sport and physical recreation as a 'second job' were not recorded as being in sport and physical recreation occupations, unless their main job (in terms of hours worked) was a sport and physical recreation occupation.

The 2001 census found that 83,008 people (1.0% of employed persons in Australia) had their main job in a sport and physical recreation occupation. This is a 21.6% increase from 1996, when 68,274 people (0.9%) had their main job in a sport and physical recreation occupation, and compares with an 8.7% increase for all occupations.

Of those employed in a sport and physical recreation occupation in 2001, fitness instructors (12,364 persons) and greenkeepers (11,928 persons) were prominent (table 12.31). In August 2001, there were more males (50,113 or 60.4%) than females (32,895 or 39.6%) employed in sport and physical recreation occupations. By comparison, of all employed persons, 54.8% were male and 45.2% were female.

Of those Indigenous Australians employed in sport and physical recreation occupations in 2001, greenkeepers are prominent (table 12.32). Indigenous Australians made up 1.3% (1,093) of all persons employed in sport and physical recreation occupations. Almost 10% of all park rangers were of Indigenous Australian origin.

### 12.30 AMUSEMENT CENTRES — 2000–01

	Businesses at end June(a)	Locations at end June		Employment at end June		Wages and salaries		Total income	
		no.	%	no.	%	\$m	%	\$m	%
New South Wales	79	107	27.8	697	25.0	9.7	26.8	37.6	27.5
Victoria	88	109	28.3	1 162	41.6	16.0	44.1	54.9	40.1
Queensland	47	63	16.4	367	13.1	4.7	12.8	21.5	15.7
Western Australia	30	35	9.1	168	6.0	1.8	5.0	8.0	5.8
South Australia	36	45	11.7	295	10.6	3.0	8.4	10.2	7.5
Tasmania	10	14	3.6	35	1.3	0.5	1.4	1.8	1.3
Northern Territory	3	3	0.8	7	0.3	—	0.1	0.2	0.2
Australian Capital Territory	9	9	2.3	63	2.3	0.5	1.4	2.7	2.0
<b>Australia</b>	<b>288</b>	<b>384</b>	<b>100.0</b>	<b>2 793</b>	<b>100.0</b>	<b>36.2</b>	<b>100.0</b>	<b>136.9</b>	<b>100.0</b>

(a) Multi-state businesses are counted in each state in which they operate. Hence the counts of businesses for states and territories do not sum to the total for Australia.

Source: *Selected Amusement and Leisure Industries, Australia, 2000–01* (8688.0).

### 12.31 PERSONS EMPLOYED IN SELECTED SPORT AND PHYSICAL RECREATION OCCUPATIONS — 2001

	Males	Females	Persons
Fitness instructor(a)	3 685	8 679	12 364
Greenkeeper(b)	11 637	291	11 928
Veterinarian	2 975	2 032	5 007
Veterinary nurse	121	4 737	4 858
Recreation officer	1 035	2 807	3 842
Stud hand or stable hand	1 626	1 867	3 493
Boat builder and repairer(c)	3 153	60	3 213
Ticket collector or usher	1 576	1 624	3 200
Animal trainer(d)	2 251	875	3 126
Other sports coach	1 991	887	2 878

(a) Comprises Fitness instructors and related workers n.f.d. and Fitness instructor. (b) Comprises Greenkeepers n.f.d., Greenkeeper and apprentice greenkeeper. (c) Comprises Boat builder and repairer, and Apprentice boat builder and repairer. (d) Comprises Animal trainers n.f.d., Horse trainer and Animal trainers n.e.c.

Source: *Employment in Sport and Recreation, Australia, 2001* (4148.0).

## Involvement in organised sports and physical activities

In the 12 months to April 2001, an estimated 4.1 million persons (27.1% of all people aged 15 years and over) were involved in sport and physical activity organised by a club, association or other organisation. This involvement includes players or participants and those involved in non-playing roles that support, arrange and/or run organised sport and physical activity. Of these, over 1.4 million persons (9.5% of all people aged 15 years and over) were involved as coaches, referees, administrators, scorers or in other non-playing roles.

Of the 4.1 million persons involved in organised sport and physical activity, 0.9 million (21.6% of those involved) were both a player and involved in at least one non-playing role. Of the 1.4 million persons with non-playing involvement, 33.8% participated in more than one non-playing role. In all, these 1.4 million persons had 2.1 million involvements in non-playing roles in the 12 months prior to interview (table 12.33).

## 12.32 INDIGENOUS PERSONS EMPLOYED IN SELECTED SPORT AND PHYSICAL RECREATION OCCUPATIONS — 2001

	Indigenous persons
Greenkeeper(a)	259
Park ranger	154
Fitness instructor(b)	121
Recreation officer	91
Footballer	70
Stud hand or stable hand	40
Sports development officer	31
Other sportsperson	29
Environment, parks and land care manager	29
Boat builder and repairer(c)	26

(a) Comprises Greenkeepers n.f.d., Greenkeeper and Apprentice greenkeeper. (b) Comprises Fitness instructors and related workers n.f.d. and Fitness instructor.

(c) Comprises Boat builder and repairer, and Apprentice boat builder and repairer.

Source: *Employment in Sport and Recreation, Australia, 2001 (4148.0)*.

## 12.33 INVOLVEMENT IN ORGANISED SPORTS AND PHYSICAL ACTIVITIES(a) — 2001

Type of involvement	Some paid involvement(b)	Unpaid involvement only	Total involvements	Participation rate(c)
	'000	'000	'000	%
Playing	88.1	3 428.3	3 516.4	23.5
Non-playing roles				
Coach, instructor or teacher	105.8	452.6	558.4	3.7
Referee or umpire	69.5	270.5	340.0	2.3
Committee member or administrator	24.3	570.7	595.0	4.0
Scorer or timekeeper	*14.6	439.1	453.7	3.0
Medical support	*11.9	78.2	90.1	0.6
Other involvement	*7.3	79.8	87.1	0.6
Total non-playing involvements	233.5	1 890.9	2 124.3	..
<b>Total involvements</b>	<b>321.6</b>	<b>5 319.2</b>	<b>5 640.8</b>	<b>..</b>

(a) Relates to persons aged 15 years and over who were involved in sport or physical activity organised by a club, association or other organisation in the 12 months prior to interview in April 2001. (b) Includes those who were paid for all or some of their involvement. Payment includes payment in dollars and/or goods and services. (c) Refers to the number of persons involved in organised sport and physical activity, expressed as a percentage of the civilian population aged 15 years and over.

Source: *Involvement in Organised Sport and Physical Activity, Australia, April 2001 (6285.0)*.

The Voluntary Work Survey, conducted by the ABS in 2000, collected information on the types of organisations, clubs and associations to which people provided unpaid help in the form of time, services or skills. The survey found that 4.3 million Australians aged 18 years and over undertook voluntary work in the 12 months before interview in 2000. Sport and physical recreation organisations had the largest number of volunteers, receiving help from 1.1 million volunteers. Education, training and youth development organisations and community and welfare organisations also received help from close to one million volunteers. Although female volunteers outnumbered male volunteers overall, this situation was reversed in sport and physical recreation organisations where 60% of volunteers were male. Almost one-third (31%) of volunteers who worked for sports and physical recreation organisations were aged 35–44 years and 40% of sports volunteers had children aged 5–14 years. Some volunteers provided assistance to more than one sports organisation, so the total number of voluntary involvements in sports organisations (1.3 million) exceeded the total number of volunteers for sports organisations.

### Participation in sports and physical activities

Table 12.34 shows the results of an ABS survey on the sports and physical activities in which Australians participated during a 12-month period prior to interview in 2002. This includes participation in sports or physical activities, such as football or netball, that are usually organised by

a club or association. It also includes other sport and physical activities undertaken for recreation or exercise, which may not be organised, such as walking for exercise. Thus, for example, participation in swimming will include people who swim recreationally at the beach, those who swim competitively as part of a team, and those who do laps at the local pool for exercise.

The survey found that 62.4% of the population (9,056,300 people) aged 18 years and over participated as a player (rather than in a support role) in one or more sports or physical activities. Participation rates were highest for the 18–24 year age group (72.6%), and declined steadily with age. The rate for persons aged 65 years and over was 45.6%.

Males had a higher participation rate than females in most age groups; however, females had a higher participation rate than males in the 45–54 and 55–64 age groups.

### Popular sports and physical activities

The 2002 survey indicated that the activities which attracted the most participants were walking (about 3.7 million people), swimming (1.6 million), aerobics/fitness (1.6 million) and tennis (1.0 million).

For men, the most popular activities were walking and golf. For women, walking and aerobics/fitness were most popular. Table 12.35 shows the 10 sports or physical activities in which the most men participated and the 10 in which the most women participated.

**12.34 PARTICIPATION IN SPORT AND PHYSICAL ACTIVITIES(a) — 2002**

Age group (years)	Males		Females		Persons	
	Number '000	Participation rate %	Number '000	Participation rate %	Number '000	Participation rate %
18–24	751.6	77.6	630.5	67.4	1 382.1	72.6
25–34	1 098.3	75.5	988.2	68.0	2 086.5	71.8
35–44	994.1	68.1	915.8	62.2	1 909.9	65.1
45–54	771.5	58.3	799.7	60.5	1 571.2	59.4
55–64	533.2	56.1	557.4	59.7	1 090.7	57.9
65 and over	516.0	50.6	500.0	41.3	1 016.0	45.6
<b>Total</b>	<b>4 664.7</b>	<b>65.0</b>	<b>4 391.6</b>	<b>59.9</b>	<b>9 056.3</b>	<b>62.4</b>

(a) Relates to persons aged 18 years and over who participated in sport or physical activity as a player during the 12 months prior to interview.

Source: *Participation in Sport and Physical Activities, Australia, 2002 (4177.0)*.

### 12.35 ADULT PARTICIPATION IN SELECTED SPORTS AND PHYSICAL ACTIVITIES(a) — 2002

	Number '000	Participation rate %
<b>MALES</b>		
Walking for exercise	1 255.2	17.5
Golf	890.3	12.4
Swimming	708.4	9.9
Aerobics/fitness	632.3	8.8
Tennis	544.5	7.6
Cycling	524.0	7.3
Running	440.9	6.1
Fishing	437.5	6.1
Cricket (outdoor)	340.8	4.7
Soccer (outdoor)	318.9	4.4
<b>FEMALES</b>		
Walking for exercise	2 407.9	32.9
Aerobics/fitness	953.2	13.0
Swimming	867.4	11.8
Tennis	443.4	6.1
Netball	389.4	5.3
Cycling	305.6	4.2
Yoga	266.2	3.6
Bush walking	240.1	3.3
Running	221.9	3.0
Dancing	206.4	2.8

(a) Relates to persons aged 18 years and over who participated in sport or physical activity as a player during the 12 months prior to interview.

Source: *Participation in Sport and Physical Activities, Australia, 2002 (4177.0)*.

### State and territory differences

Differences in levels of participation in sport and physical activities in different parts of the country are in part affected by the age profiles of those populations, but other factors such as climate and life-style preferences of individuals may also be important, as well as the existence of facilities, including cycle and walking paths. These differences can be observed between the states and territories. In 2002, adults in the Australian Capital Territory recorded the highest participation rate (76.1% of persons aged 18 and over). South Australia, on the other hand, recorded the lowest participation rate (57.7%) (table 12.36).

### 12.36 PARTICIPATION IN SPORT AND PHYSICAL ACTIVITIES(a) — 2002

	Males %	Females %	Persons %
New South Wales	62.5	56.6	59.5
Victoria	65.9	60.2	63.0
Queensland	63.4	59.0	61.2
South Australia	58.6	56.8	57.7
Western Australia	76.9	73.0	74.9
Tasmania	63.3	57.4	60.3
Northern Territory(b)	70.4	70.9	70.6
Australian Capital Territory	78.9	73.4	76.1
<b>Australia</b>	<b>65.0</b>	<b>59.9</b>	<b>62.4</b>

(a) Relates to persons aged 18 years and over who participated in sport or physical activity as a player during the 12 months prior to interview. (b) Figures for NT refer to mainly urban areas only.

Source: *Participation in Sport and Physical Activities, Australia, 2002 (4177.0)*.

### Masters sport

The physical benefits which can accrue from lifelong participation in sport are numerous and well documented. However, traditional sporting and competition structures often do not satisfactorily accommodate those who wish to continue participation after reaching their 'prime'. Masters sport seeks to overcome this by providing opportunities for participants to compete in age groups against their peers, and in a setting where enjoyment and participation are paramount, while still catering to those who wish to compete seriously. Masters sport also provides an opportunity for mature aged athletes to take up new sports and activities.

A number of multi-sport festivals for mature-aged competitors, known as Masters Games, are conducted in various locations around Australia and the world. The biennial Australian Masters Games is an event established by Sport Industry Australia, Australia's peak industry body for sport. The games are now the largest regular multi-sport festival in Australia. The 8th Australian Masters Games were held in Newcastle in 2001 and attracted 11,225 participants, competing in 61 sports.

## Sporting facilities in Indigenous communities

The 2001 Community Housing and Infrastructure Needs Survey found that a total of 80,841 people (85%) living in Aboriginal and Torres Strait Islander communities with a population of 50 or more had access to at least one type of sporting facility in their community. Nearly two-thirds (65%) of discrete Indigenous communities of this size had such facilities. The types of sporting facilities most commonly reported were outdoor courts for games such as basketball, netball and tennis (83% of those with at least one sporting facility) and sports grounds (78%).

## Exercise and Australians

The ABS National Health Survey, conducted in 2001, found that 70% of adults had exercised for recreation, sport or fitness during the previous two weeks. Overall proportions of males and females who exercised were similar, but females were more likely to walk for exercise than males (58% and 50% respectively) while males were more likely to undertake moderate (40%) and vigorous (20%) exercise than females (33% and 11% respectively). In the two weeks prior to interview, 71% of Indigenous Australian adults in non-remote areas were found to have exercise levels that were either sedentary or low. After

adjusting for age differences, this is a similar percentage to that of non-Indigenous Australian adults (68%).

## Attendance at sporting events

Attending sports events (such as club matches and international competitions) is a popular pastime of many Australians. The 2002 ABS Sports Attendance Survey indicated that 7 million people, or 48% of all people aged 18 years and over, attended a sporting event (excluding junior and school sport) at least once in the previous 12 months. The overall attendance rate was virtually unchanged from the rates recorded in similar surveys conducted in 1995 and 1999. Men (56%) were more likely to have attended a sporting event than women (41%). For both men and women, attendance rates were highest for the 18–24 year age group (70% and 59% respectively) and steadily declined with age. Among men aged 65 years and over, the attendance rate was 27%, while for women in this age group it was 16%.

The sport with the highest attendance was Australian Rules football — 2.5 million people attended this sport on at least one occasion during the year (table 12.37). Horse racing (1.9 million), motor sports (1.5 million) and Rugby League (1.5 million) were also among the most attended sports.

**12.37 ATTENDANCE(a) AT SELECTED SPORTING EVENTS — 2002**

	Number			Attendance rate(b)		
	Males	Females	Persons	Males	Females	Persons
	'000	'000	'000	%	%	%
Australian Rules football	1 503.9	982.0	2 486.0	21.0	13.4	17.1
Horse racing	1 062.6	802.6	1 865.2	14.8	11.0	12.9
Motor sports	993.3	480.1	1 473.4	13.8	6.6	10.2
Rugby League	951.4	513.2	1 464.6	13.3	7.0	10.1
Cricket (outdoor)	635.2	231.0	866.2	8.9	3.2	6.0
Soccer (outdoor)	519.3	282.6	801.9	7.2	3.9	5.5
Rugby Union	469.7	203.9	673.6	6.5	2.8	4.6
Harness racing	318.9	189.4	508.3	4.4	2.6	3.5
Basketball	226.0	208.4	434.4	3.1	2.8	3.0
Tennis	192.5	201.0	393.5	2.7	2.7	2.7
Dog racing	150.7	81.6	232.3	2.1	1.1	1.6
Netball	66.9	152.8	219.7	0.9	2.1	1.5

(a) Attendance at least once in the 12 months prior to interview in 2002 by persons aged 18 years and over. (b) The number of people who attended, expressed as a percentage of the number of people in that population group.

Source: *Sports Attendance, Australia, 2002 (4174.0)*.

## Household expenditure on sports and physical recreation

The 1998–99 Household Expenditure Survey found that Australian households spent an average of \$11.03 per week on selected sports and physical recreation products. This was 1.6% of the average weekly expenditure on all products and 1.3% of the average weekly household income. The categories of sports and physical recreation products with the highest levels of expenditure were sports facility hire charges (\$2.07 per week), swimming pools (\$1.29 per week) and boats, their parts and accessories (\$1.21 per week).

In total, Australian households spent \$4,096.4m on selected sports and physical recreation products during 1998–99. Of this, \$1,968.3m was spent on sports and physical recreation services, \$1,630.4m on sports, physical recreation and camping equipment, and \$493.9m on sports and recreation vehicles.

After adjusting for price changes, the average total weekly household expenditure on sports and physical recreation was virtually unchanged between 1993–94 and 1998–99. However, this was the result of upward movements in some expenditure categories balancing the downward movements in others. Categories for which average weekly household expenditure increased substantially were boats, their parts and accessories (a 146.9% increase) and sports lessons (74.0%). Categories which recorded falls in

average weekly household expenditure were sporting club subscriptions (a 35.1% decrease), sports and physical recreation equipment (21.4%) and sports facility hire charges (15.2%).

## Children's participation in sports and leisure activities

### Children's participation in organised sport

A survey of children's activities in the 12 months to April 2000 found that 1.6 million children aged 5–14 years (59%) participated outside of school hours in sport that had been organised by a school, club or association.

For both boys and girls, participation in organised sport peaked at the age of 11 years. However, across all ages boys were more likely to participate than girls (the total participation rate was 66% for boys and 52% for girls) (table 12.38). There was also a higher percentage of boys participating in more than one sport (32% of boys compared with 20% of girls).

Of children in all the states and territories, those in the Northern Territory had the highest participation rate (66%) in organised sport outside of school hours, while those in Queensland had the lowest participation rate (56%). Children living in the six state capital cities had a lower participation rate in organised sport outside of school hours than those living elsewhere in Australia (57% compared with 62%).

**12.38 CHILDREN'S PARTICIPATION IN ORGANISED SPORT(a) — 2000**

Age (years)	Number		Participation rate			
	Males '000	Females '000	Persons '000	Males %	Females %	Persons %
5	46.0	37.9	83.8	35.1	29.5	32.3
6	79.5	42.8	122.2	58.9	36.2	48.3
7	90.1	62.2	152.3	65.8	48.6	57.5
8	101.5	78.9	180.4	72.2	57.2	64.8
9	99.4	80.1	179.5	72.0	59.6	65.9
10	106.8	77.2	184.0	74.1	59.2	67.0
11	108.7	77.3	186.0	76.3	60.7	69.0
12	88.9	82.1	171.0	71.8	60.6	66.0
13	90.9	72.1	163.1	69.1	56.6	63.0
14	83.5	62.5	145.9	63.8	51.8	58.0
<b>Total</b>	<b>895.2</b>	<b>673.0</b>	<b>1 568.2</b>	<b>66.1</b>	<b>52.3</b>	<b>59.4</b>

(a) Outside of school hours during the 12 months prior to interview in April 2000.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2000 (4901.0)*.

### Children's sports with the most participants

The organised sports that attracted most boys were outdoor soccer (with a participation rate for boys of 20%), swimming (13%), Australian Rules football (13%) and outdoor cricket (10%). For girls, the sports with the highest participation rates were netball (18%), swimming (16%), tennis (8%) and basketball (6%) (table 12.39). Dancing was an organised cultural (and physical) activity with a higher participation rate for girls (19.5%) than any organised sport (table 12.27).

About an equal percentage of girls and boys participated in athletics (including track and field) and hockey (50% of those involved in athletics and 51% of hockey players were girls). However, for some sports, there is a clear difference between the sexes in preferences or opportunities. Most (97%) netball players were girls while boys made up 98% of Australian Rules footballers, 97% of Rugby League players and 95% of outdoor cricket players.

### Children's participation in leisure activities

In the two school weeks prior to interview in April 2000, skateboarding or rollerblading were undertaken outside of school hours by 31% of children aged 5–14 years. During the same period 64% of children rode a bike outside of school hours. These activities were significantly more popular among boys than girls (36% of boys and 26% of girls skateboarded or rollerbladed; 71% of boys and 56% of girls rode a bike). Of the less active leisure activities considered, 97% of both boys and girls watched TV or videos, and 79% of boys and 58% of girls played electronic or computer games in the two-week period.

For further information about children's involvement in organised cultural activities, such as dancing and singing, and in art and craft activities during their leisure time, see the earlier section *Children's participation in cultural and leisure activities*.

**12.39 CHILDREN'S PARTICIPATION IN SELECTED ORGANISED SPORTS(a) — 2000**

	Number			Participation rate		
	Males '000	Females '000	Persons '000	Males %	Females %	Persons %
Swimming	177.0	203.1	380.1	13.1	15.8	14.4
Soccer (outdoor)	265.0	37.3	302.3	19.6	2.9	11.4
Netball	*6.4	234.9	241.4	*0.5	18.2	9.1
Tennis	124.8	99.1	223.8	9.2	7.7	8.5
Basketball	119.6	80.7	200.3	8.8	6.3	7.6
Australian Rules football	170.3	*4.1	174.4	12.6	*0.3	6.6
Cricket (outdoor)	133.6	7.3	140.9	9.9	0.6	5.3
Martial arts	72.7	31.9	104.6	5.4	2.5	4.0
Athletics and track and field	52.2	51.9	104.1	3.9	4.0	3.9
Rugby League	92.5	*2.5	95.1	6.8	*0.2	3.6

(a) Children aged 5–14 years who participated in organised sport outside of school hours during the 12 months prior to interview in April 2000.

Source: *Children's Participation in Cultural and Leisure Activities, Australia, April 2000 (4901.0)*.

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## INDUSTRY STRUCTURE AND PERFORMANCE

This chapter presents a consolidated view of industrial production in Australia. The current structure and performance of the main industrial components of the Australian economy, and their relative contribution to overall economic activity, are described in terms of the value of production and employment by industries. Statistics are also provided on the growth of industries over the last 10 years and the changing contribution of individual industries to total economic activity during the period. More detailed information on the structure and performance of individual industries is provided in later chapters.

This chapter starts by outlining the development of industry since European settlement in *The evolution of Australian Industry*. The section *The value of goods and services produced by industries* examines industry gross value added and the contribution of individual industries to Australia's gross domestic product. *An industry view of employment* looks at industry shares of total employment, average weekly paid hours, and compensation of employees. *Selected measures of industry performance* presents information on income and expenses along with operating profit before tax and operating profit margins for individual industries. The chapter concludes with *Industry productivity* which provides data on multifactor productivity for the market sector as a whole and gross value added per hour worked for market sector industries.

## The 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 50% 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.

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 onset of the oil price rises in 1973–74 led the world into recession. Inflation, coupled with slower growth in gross domestic product (GDP), affected all sectors of the economy. The modest employment growth between 1968 and 1979 was dominated by the service industries.

The 1980s and 1990s saw a decline in the relative contribution to GDP from goods-producing industries and a rise in the contribution from service industries. The falling contribution from goods-producing industries is largely the result of a decline in manufacturing's share of GDP. The mining, manufacturing, and electricity, gas and water supply industries experienced declining employment, along with outsourcing of some activities, particularly support services.

## The value of goods and services produced by industries

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 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 consumption of fixed capital. This is also described as the unduplicated value of economic production. This measure avoids double counting the goods and services produced at successive stages of production. Accordingly, it is a measure of the value added in 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 in the incidence of commodity taxes and subsidies across the output of individual industries. More information is provided in *Chapter 29, National accounts*.

Table 13.3 provides details of industry GVA and GDP for 2001–02. Data are presented at a broad industry level, generally equating to the Division level of the *Australian and New Zealand Standard Industrial Classification (ANZSIC) 1993*. In the ANZSIC, individual businesses are assigned an appropriate industry category on the basis of their predominant activities.

In 2001–02, the value of Australian production (GDP) was \$695,663m (in chain volume terms), an increase of 3.9% from 2000–01. The average annual rate of growth in GDP between 1991–92 and 2001–02 was also 3.9%. In 2001–02, the ratio of GDP to the estimated resident population (GDP per capita) was \$35,693 per person.

Graph 13.1 shows industry GVA shares of GDP. The property and business services industry contributed the most to GDP (11.1% or \$77,162m) in 2001–02. This was closely followed by the manufacturing industry (10.9% of GDP or \$75,573m). The finance and insurance industry was the third most important industry in terms of contribution to GDP, contributing 6.7% or \$46,943m.

Property and business services only recently became the most significant industry in terms of its contribution to GDP, moving ahead of the manufacturing industry for the first time in 2000–01. The property and business services industry includes marketing and business management services, technical services, legal and accounting services, computer services, and property operators and developers services.

Between 1991–92 and 2001–02, the greatest increase in industry GVA shares of GDP was for the property and business services industry (2.0 percentage points). The next biggest increases were for the communication services (0.9 percentage points) and wholesale trade (0.4 percentage points) industries.

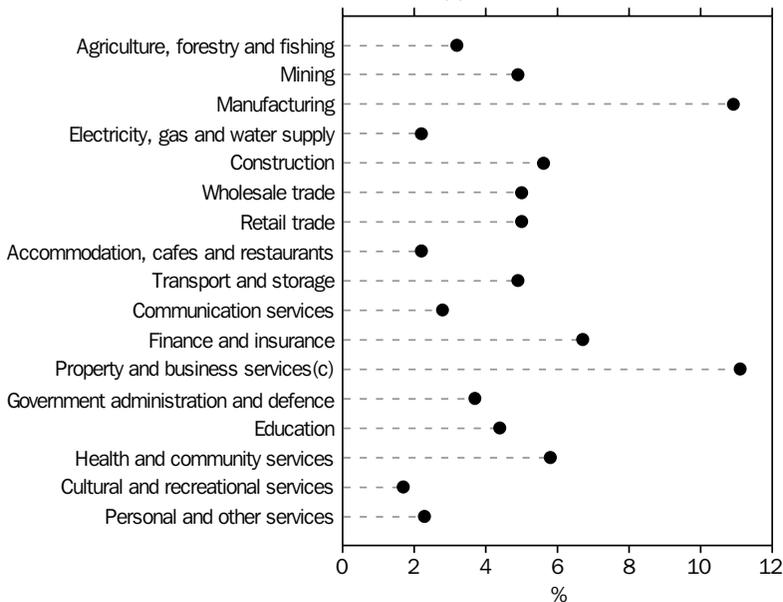
In the same 10-year period, the greatest fall in relative shares of GDP was for the manufacturing industry (–1.6 percentage points). The next largest decreases in relative shares were for the education (–0.7 percentage points), government

administration and defence (–0.6 percentage points), and electricity, gas and water supply (–0.5 percentage points) industries.

Movements in the chain volume measures of GDP and industry GVA (from which the direct effects of price changes have been removed) are important indicators of economic growth. More information on chain volume measures is provided in *Chapter 29, National accounts*.

Graph 13.2 provides the average annual rate of growth in industry GVA (in chain volume terms) between 1991–92 and 2001–02. Average annual growth rates provide an indicator of the broad underlying behaviour of the annual series over several years. These averages, however, smooth annual movements in the series and disguise extremes in data (the highest and lowest values). In these terms, the communication services industry had the highest average annual rate of growth (8.4%), followed by the property and business services (6.1%) and wholesale trade (4.9%) industries.

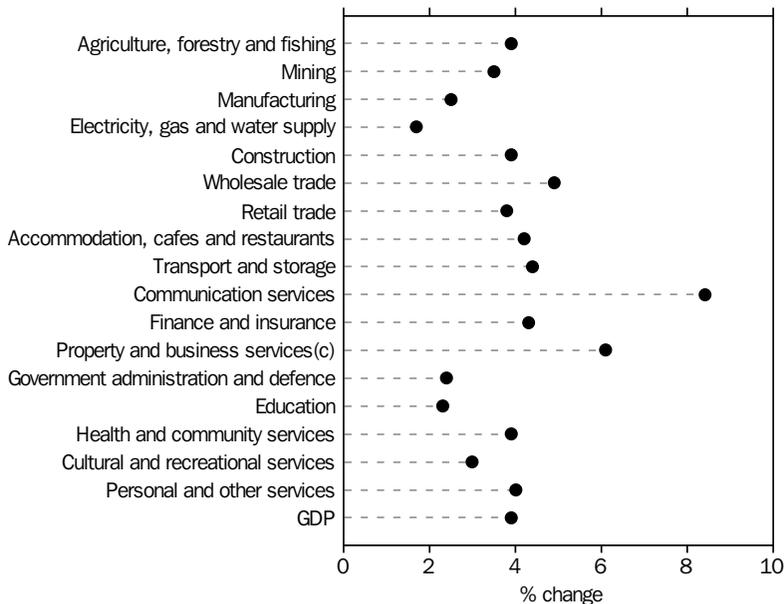
**13.1 CONTRIBUTION TO GROSS DOMESTIC PRODUCT(a),  
Chain volume measures(b) — 2001–02**



(a) Industry GVA as a proportion of GDP. (b) Reference year is 2000–01. (c) Excludes ownership of dwellings (see table 13.3).

Source: Australian System of National Accounts, 2001–02 (5204.0).

**13.2 AVERAGE ANNUAL RATE OF GROWTH IN THE PRODUCTION OF GOODS AND SERVICES(a), Chain volume measures(b) — 1991–92 to 2001–02**



(a) Industry GVA. (b) Reference year is 2000–01. (c) Excludes ownership of dwellings (see table 13.3).

Source: Australian System of National Accounts, 2001–02 (5204.0).

The average annual growth rates shown were affected by year on year changes in levels between 1991–92 and 2001–02. In terms of year on year changes, the fastest growing industry in this period, the communication services industry, showed strong and relatively steady increases in GVA from 1991–92 to 1998–99. This was followed by slower growth in recent years. In the most recent period, 2000–01 to 2001–02, the communication services industry rose by 3.0%.

On average, the value of production (GVA) of the agriculture, forestry and fishing industry grew by 3.9% each year between 1991–92 and 2001–02. However, year on year growth in the value of this industry varied significantly over time. The GVA of the agriculture, forestry and fishing industry fell by 17.0% between 1993–94 and 1994–95 due to the effect of drought on agricultural production. This was followed by a good farm season in 1995–96 (up 23.5% from the previous financial year).

The value of production (GVA) of the construction industry also grew, on average, by 3.9% each year in the 10-year period 1991–92 to 2001–02. In terms of year on year growth, this series changed significantly in recent years. In the most recent period (2000–01 to 2001–02), the GVA of the construction industry grew by 11.7%. Increases in new house building and private engineering construction largely accounted for this rise. This growth followed a fall of 15.6% between 1999–2000 and 2000–01, coinciding with the introduction of The New Tax System (July 2000).

Table 13.3 provides estimates of the unduplicated production of goods and services (industry GVA) in 2001–02, along with percentage changes from 2000–01 and average annual rates of growth between 1991–92 and 2001–02.

### 13.3 PRODUCTION OF GOODS AND SERVICES(a), Chain volume measures(b)

	2001–02	Change from 2000–01	Average annual rate of growth from 1991–92 to 2001–02
	\$m	%	%
Agriculture, forestry and fishing	22 119	2.3	3.9
Mining	33 865	-0.3	3.5
Manufacturing	75 573	3.0	2.5
Electricity, gas and water supply	15 226	-0.8	1.7
Construction	39 011	11.7	3.9
Wholesale trade	34 714	3.6	4.9
Retail trade	34 646	5.5	3.8
Accommodation, cafes and restaurants	15 350	4.1	4.2
Transport and storage	33 988	5.2	4.4
Communication services	19 814	3.0	8.4
Finance and insurance	46 943	4.6	4.3
Property and business services(c)	77 162	4.9	6.1
Government administration and defence	25 440	1.0	2.4
Education	30 317	1.5	2.3
Health and community services	40 438	5.8	3.9
Cultural and recreational services	11 821	0.3	3.0
Personal and other services	15 829	7.6	4.0
Ownership of dwellings	62 278	3.6	3.9
Taxes less subsidies on products	61 209	3.5	4.0
Statistical discrepancy	-80	..	..
<b>GDP</b>	<b>695 663</b>	<b>3.9</b>	<b>3.9</b>

(a) Industry GVA. (b) Reference year is 2000–01. (c) Excludes ownership of dwellings.

Source: Australian System of National Accounts, 2001–02 (5204.0).

## An industry view of employment

Another measure of the significance of an industry is its contribution to employment. Employment (and unemployment) data are used as social indicators by government, 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 13.4 presents industry shares of total employment in 2001–02. These data were derived from the Australian Bureau of Statistics (ABS) Labour Force Survey and relate to the civilian population aged 15 years and over. 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 6, Labour*.

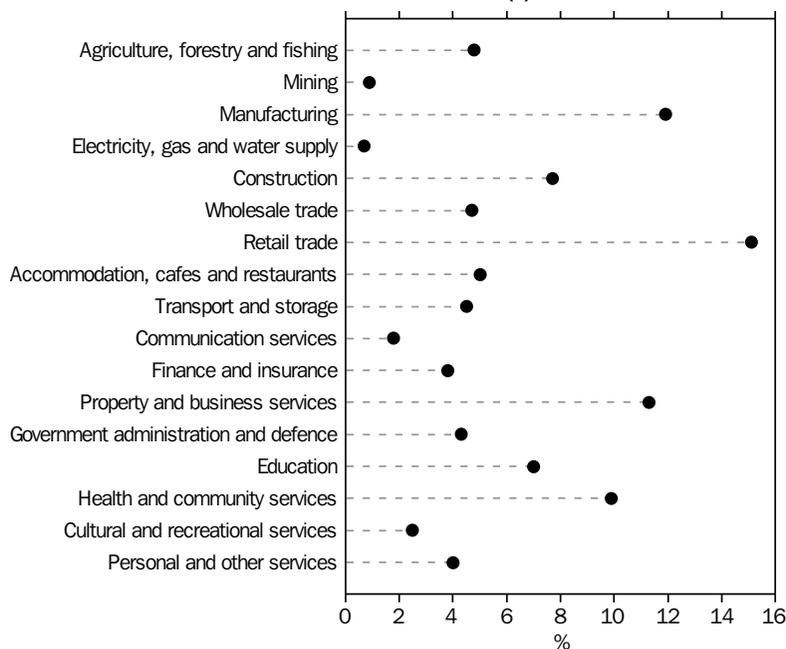
In 2001–02, 9.2 million people were employed across all industries. The retail trade industry employed the greatest number of people of all industries (1.4 million employed persons or 15.1% of total employment). The manufacturing industry

employed 1.1 million people (11.9% of total employment). This was followed by the property and business services (11.3%), health and community services (9.9%), construction (7.7%), and education (7.0%) industries.

These industries were also the main employing industries in 1991–02. Between 1991–02 and 2001–02, the property and business services industry share of total employment increased by 3.2 percentage points. Conversely, the manufacturing industry's share of total employment declined by 2.3 percentage points over this period.

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 derived from the biennial ABS Survey of Employee Earnings and Hours. This survey covers all employing 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.

### 13.4 SHARE OF TOTAL EMPLOYMENT(a) — 2001–02



(a) Annual average of quarterly data.

Source: *Labour Force, Australia, Detailed — Electronic Delivery, May 2003 (6291.0.55.001)*.

Graph 13.5 shows average weekly total paid hours for full-time adult non-managerial employees by industry in May 2002 compared to the all industries average in that period (39.5 hours). Total paid hours are equal to ordinary time paid hours plus overtime paid hours. The highest average weekly paid hours for full-time adult non-managerial employees was in mining (45.8 hours), followed by transport and storage (42.0 hours) and manufacturing (41.4 hours) industries. The lowest average weekly paid hours was in the education industry (36.0 hours).

Paid overtime accounted for 3.8% of average weekly total paid hours for full-time adult non-managerial employees. The industry in which employees worked the most paid overtime was mining (12.9% of total paid hours for that industry). Paid overtime in the transport and storage, construction, and manufacturing industries accounted for 7.6%, 7.4% and 7.2% of total paid hours respectively.

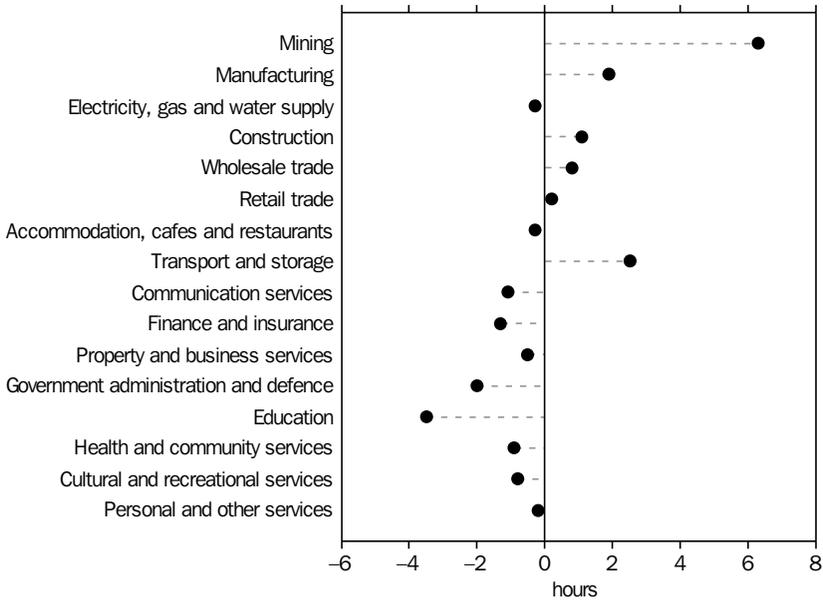
Compensation of employees is both an economic and social indicator. This item includes wages and salaries (paid in cash and in kind) and employer social contributions (e.g. employers' contributions

to superannuation and worker's compensation premiums). Wages and salaries in kind can include meals, housing, uniforms, and vehicles.

Graph 13.6 presents industry shares of total compensation of employees in 2001–02. These data are in current prices, (i.e. they are valued at the prices of the period to which the data relate (2001–02)). In this period, total compensation of employees was \$338,514m. Total wages and salaries was \$306,048m (90.4% of total compensation of employees).

The property and business services industry held the largest share of total compensation of employees (14.8%), followed by the manufacturing (12.0%), health and community services (9.9%), education (8.4%) and retail trade (8.1%) industries. These industries were also in the top six labour intensive industries (along with construction) in 2001–02.

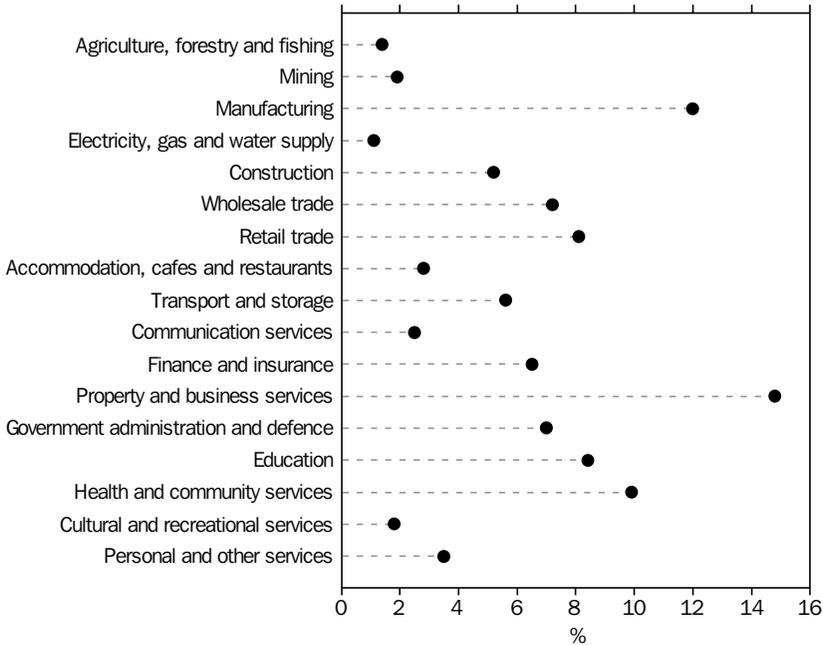
**13.5 AVERAGE WEEKLY TOTAL PAID HOURS FOR FULL-TIME ADULT NON-MANAGERIAL EMPLOYEES(a), Difference from all industries average(b) — May 2002**



(a) Excludes agriculture, forestry and fishing. (b) The all industries average weekly total paid hours is 39.5 hours.

Source: *Employee Earnings and Hours, Australia, May 2002 (6306.0)*.

**13.6 SHARE OF TOTAL COMPENSATION OF EMPLOYEES(a) — 2001-02**



(a) This item comprises wages and salaries plus employers' social contributions.

Source: *Australian System of National Accounts, 2001-02 (5204.0)*.

## Selected measures of industry performance

Data items such as income, expenses, operating profit before tax (OPBT) and operating profit margins can be used to assess business and industry performance.

Total operating income includes sales of goods, income from services, interest income, and rent, leasing and hiring income. Total operating expenses includes labour costs, total purchases, financial expenses, and rent, leasing and hiring expenses. OPBT was calculated as total operating income minus total operating expenses. Other definitions of OPBT include change in stocks, but this information was not available for these estimates. Operating profit margin refers to the percentage of operating income available as OPBT. Table 13.7 presents these items for selected industries for 2000–01.

In 2000–01, the mining industry had the greatest operating profit margin (28%) of all industries. This industry generated \$58,804m in total

operating income and incurred total operating expenses of \$42,629. The industries with the next biggest operating profit margins were the communication services (17%), services to finance and insurance (16%), and health services (14%) industries (table 13.7).

The manufacturing industry had the highest total operating income (\$261,464m) and OPBT (\$16,281m) of all industries in 2000–01. However, this industry had a relatively low operating profit margin (6%) compared to other industries. The next highest OPBT were in the mining (\$16,175m), property and business services (\$16,087m), and construction (\$7,750m) industries.

The industry performance estimates presented in table 13.7 were derived using a combination of data from the ABS annual Economic Activity Survey and business income tax data provided to the Australian Taxation Office. Data were sourced from both employing and non-employing business entities and were recorded exclusive of the Goods and Services Tax, introduced on 1 July 2000.

### 13.7 INDUSTRY PERFORMANCE, Selected industries(a) — 2000–01

	Total operating income	Total operating expenses	Operating profit before tax (OPBT)(b)	Operating profit margin
	\$m	\$m	\$m	%
Mining	58 804	42 629	16 175	28
Manufacturing	261 464	245 183	16 281	6
Electricity, gas and water supply	37 633	33 033	4 600	12
Construction	97 397	89 647	7 750	8
Wholesale trade	256 376	249 800	6 576	3
Retail trade	229 726	224 108	5 618	2
Accommodation, cafes and restaurants	36 886	35 041	1 845	5
Transport and storage	72 622	69 573	3 048	4
Communication services	38 025	31 746	6 279	17
Services to finance and insurance(c)	26 996	22 702	4 294	16
Property and business services	152 271	136 184	16 087	11
Health services(d)	31 689	27 218	4 472	14
Cultural and recreational services	28 383	25 155	3 228	11
Personal services(e)	9 220	8 346	874	9

(a) Businesses classified to agriculture, forestry and fishing; education; or the general government sector were excluded from these estimates. Government-owned public trading enterprises were included. (b) OPBT was calculated prior to rounding of figures and therefore some discrepancy may occur between these figures and OPBT calculated from rounded figures. (c) Finance and insurance businesses were excluded from these estimates. They relate to services to finance and insurance only. (d) Businesses classified to community services were excluded from these estimates. (e) Businesses classified to other services or private households employing staff were excluded from these estimates.

Source: *Australian Industry, 2000–01* (8155.0).

Industry performance data presented in *Chapter 16, Mining*; *Chapter 18, Manufacturing*; and *Chapter 23, Communications and information technology* relate to employing businesses only. Other chapters provide industry performance data for both employing and non-employing businesses. Care should be taken when making comparisons with data in chapters for individual industries. Differences in the frequency, scope, statistical units and methodologies of the various ABS collections used to compile the statistics will affect the degree to which comparisons can be made.

## Industry productivity

Multifactor productivity (MFP) statistics provide a measure of changes in the efficiency of production. These measures are used by both government and private organisations to help gauge the effect of changes in work practices, technology, education and training.

MFP is the ratio of a measure of economic output to a combination of two or more factor inputs. In simple terms, MFP represents that part of the change in production that cannot be explained by changes in the measured inputs.

MFP statistics use chain volume industry GVA as the measure of economic output. Two inputs are used: labour (hours worked) and capital. The capital input used is a measure of different capital assets such as dwellings, other buildings and structures, and machinery and equipment, along with livestock, intangibles and non-agricultural land.

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 associated with the business cycle.

Caution needs to be exercised in interpreting productivity measures as they are derived as a residual and are therefore subject to any errors in the output and input measures.

MFP measures are calculated for the market sector, an industry grouping comprising the following industries: agriculture; forestry and

fishery; mining; manufacturing; electricity, gas and water supply; construction; wholesale trade; retail trade; accommodation, cafes and restaurants; transport and storage; communication services; finance and insurance; and cultural and recreational services. These are industries with marketed activities for which there are satisfactory estimates of the growth in the volume of output.

MFP estimates are subject to growth in the business cycle. It is for this reason that MFP growth is generally analysed as average growth rates from the peak of one growth cycle to the peak of another. This analysis assumes that labour is being utilised to the same degree at each peak in the growth cycle.

Graph 13.8 shows the MFP index for the market sector from 1991–92 to 2001–02. Over the most recent business growth cycle (1993–94 to 1998–99), MFP of the market sector has grown annually, on average, by 1.8%. This was more than twice the average annual growth rate over the previous business growth cycle (0.7% between 1988–89 and 1993–94).

MFP statistics are available only for the market sector as a whole. Although MFP is the more comprehensive measure of productivity, the ABS also produces industry labour productivity indexes. One measure of labour productivity, an index of industry GVA in chain volume measures per hour worked, is useful because it is provided for each market sector industry.

Labour productivity is constant if there is no change in the amount produced (chain volume GVA) per hour worked. Changes in this ratio reflect changes in the average skill or productivity level of the workforce. This measure reflects not only the contribution of labour to changes in production but also the contribution of capital and other factors (e.g. technological changes and managerial efficiency).

Movements in employment and hours worked tend to lag movements in GDP. The implication being, in the period of the growth cycle when the growth in output is declining, indexes of labour productivity are also likely to decline, particularly if rapid growth in GDP is abruptly ended. Conversely, labour productivity indexes are likely to grow strongly when the economy comes out of a cyclical trough.

Graph 13.9 shows the average annual rate of growth in the amount produced per hour worked for market sector industries over the most recent business growth cycle (1993–94 to 1998–99). Over this period, the average annual growth rate was 3.4% for the market sector as a whole.

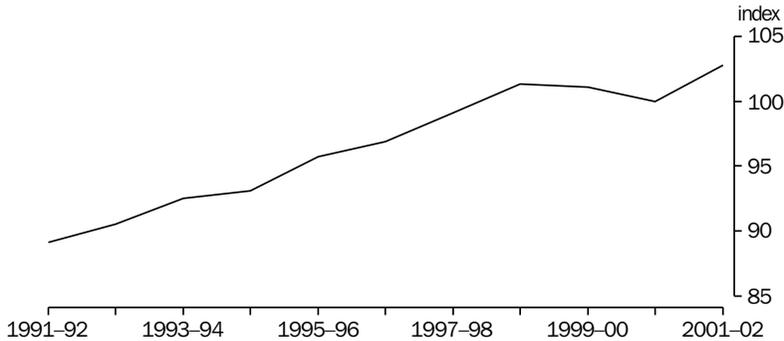
Most of the market sector industries increased their productivity per hour worked. Between 1993–94 and 1998–99, the industries with the highest average annual productivity growth rates were communication services (7.3%), electricity, gas and water supply (7.2%), wholesale trade (6.8%) and mining (5.2%). Negative growth was seen only in the cultural and recreational services industry. On average, this industry’s productivity fell by 0.7% per annum between 1993–94 and 1998–99.

In the previous business growth cycle (1988–89 to 1993–94), market sector productivity per hour worked grew, on average, by 2.3% each year. The communication services industry and the

electricity, gas and water supply industry were again the top two productive industries in terms of growth in amount produced per hour worked. The mining industry was the third most productive industry (rising on average by 5.3% each year). In this cycle, negative growth in amount produced per hour worked was seen in the accommodation, cafes and restaurants (-1.6%), wholesale trade (-1.4%) and cultural and recreation services (-0.4%) industries.

The biggest increase in productivity between the two business cycles (1988–89 to 1993–94 and 1993–94 to 1998–99) was in the wholesale trade industry. This industry’s average annual productivity was 8.2 percentage points greater in the most recent cycle compared to the previous cycle.

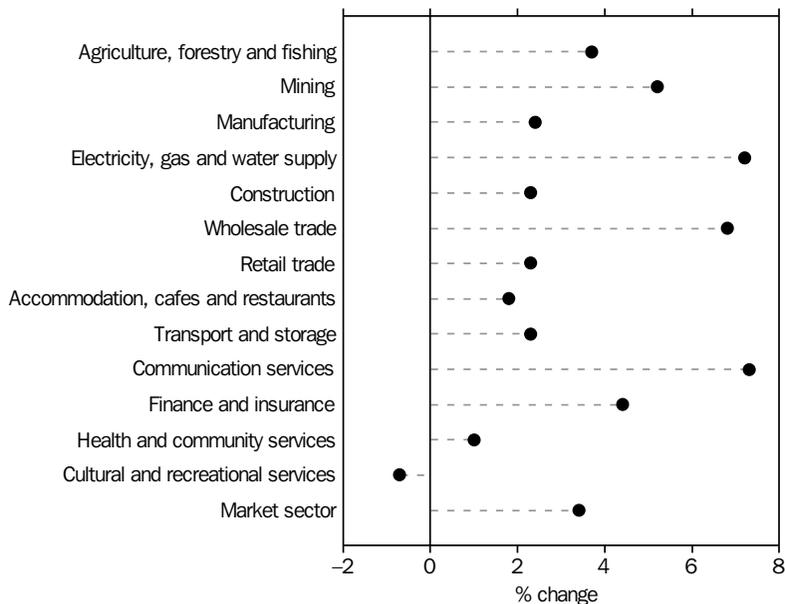
**13.8 MULTIFACTOR PRODUCTIVITY OF THE MARKET SECTOR(a) — 2001–02**



(a) Reference year for index is 2000–01 = 100.0.

Source: Australian System of National Accounts, 2001–02 (5204.0).

**13.9 AVERAGE ANNUAL RATE OF GROWTH IN AMOUNT PRODUCED PER HOUR WORKED(a), Market sector industries — 1993-94 to 1998-99**



(a) Indexes of gross value added per hour worked in chain volume measures. Reference year is 2000-01 = 100.0.

Source: Australian System of National Accounts, 2001-02 (5204.0).

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## AGRICULTURE

Interacting factors such as the opening up of new land, the development of transport facilities and profitable markets, and technical and scientific achievements have, along with climate and soil types, shaped the evolution of Australian agriculture.

Until the late-1950s, agricultural products accounted for more than 80% of the value of Australia's exports. Since then, despite increasing agricultural output, that proportion has declined markedly as the Australian economy has become increasingly diverse. For each year during the five years to June 2002, exports from the agriculture industry averaged just under 9% of the total trade. The quantity and value of production have expanded in the mining, manufacturing and, in recent years, the service industries. The direct contribution of agriculture to Australia's gross domestic product has remained steady at around 3% throughout the last decade. Agriculture is a vital sector occupying a significant place in global rural trade, with wool, beef, wheat, cotton and sugar being particularly important. Australia is also an important source of dairy produce, fruit, rice and flowers.

The major source of statistics on land use, commodity production and livestock numbers in this chapter is the Australian Bureau of Statistics (ABS) Agricultural Survey, a large sample survey conducted Australia-wide. Every five years, the survey is replaced by the Agricultural Census, with the last census having been conducted in 2001, coinciding with the 2001 Census of Population and Housing.

The chapter concludes with an article *The Australian dairy industry*.

## The agricultural environment

Australia is a relatively flat continent, with mean elevation just exceeding 200 metres. The dominant feature of the continent is the Great Dividing Range which spans the length of the eastern seaboard. There are very few naturally good soils for agriculture. Most are infertile and shallow, with deficiencies in phosphorus or nitrogen. To offset these deficiencies, superphosphate and nitrogenous fertilisers are 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 or rule out agricultural activity altogether.

With the exception of Antarctica, Australia is the world's driest continent. The wet northern summer is suited to beef cattle grazing inland 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 and dairy cattle (in the higher rainfall areas) as well as beef cattle. Within regions there is also a high degree of rainfall variability from year-to-year, which is most pronounced in the arid and semi-arid regions. Rainfall variability often results in lengthy periods without rain. The seasonality and variability of rainfall in Australia require that water be stored, and 70% of stored water use (including groundwater) is accounted for by the agricultural sector. Storage ensures that there are adequate supplies all year round for those agricultural activities requiring a continuous supply. Irrigation has opened up areas of Australia to agricultural activities which otherwise would not have been suitable.

Evaporation is another important element of Australia's environment affecting agricultural production. Hot summers are accompanied by an abundance of sunlight. This combination of climatic variables leads to high rates of evaporation. Areas that have been cleared for crop and pasture production tend to coincide with five to nine months of effective rainfall (where rainfall exceeds evaporation) per year. In areas of effective rainfall of more than nine months, generally only higher value crops or tropical crops and fruits are

grown, while in areas with effective rainfall of less than five months, cropping is usually restricted to areas that are irrigated.

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 which have been opened up to cultivation or intensive grazing. Other areas, particularly in the semi-arid regions where extensive grazing of native grasses occurs, now show signs of returning to timber and scrub.

For more detail see *Chapter 1, Geography and climate*.

## Land used for agriculture

In spite of Australia's harsh environment, agriculture is the most extensive form of land use. At 30 June 2002, the estimated total area of establishments with agricultural activity in Australia was 447.0 million hectares (ha), representing about 58% of the total land area (tables 14.1 and 14.2). The rest of the Australian land area consists of unoccupied land (mainly desert in western and central Australia), Aboriginal land reserves (mainly located in the Northern Territory), forests, mining leases, national parks and urban areas.

Livestock grazing accounts for the largest area of land use in Australian agriculture. This activity has led to the replacement of large areas of native vegetation by introduced pastures and grasses in the higher rainfall and irrigated areas.

At 30 June 2002, 5% of Australia's agricultural land was under crops, with a further 5% under sown pastures and grasses. This maintains the trend which has seen about 10% of Australia's agricultural land under cultivation each year since the 1980s. Until that time, the area of land cropped or sown to pastures and grasses had been expanding rapidly. This expansion was facilitated by factors including increased use of fertilisers, improved water supply and reduction in the rabbit population due to myxomatosis.

## 14.1 AGRICULTURAL LAND USE

	Area of				Total
	Crops mill. ha	Sown pasture and grasses mill. ha	Balance mill. ha	Area of establishments with agricultural activity mill. ha	Proportion of Australian land area %
1997	21.1	19.0	422.0	462.2	60.1
1998	21.5	22.8	419.5	463.8	60.3
1999	23.3	22.5	407.9	453.7	59.0
2000	23.8	23.8	407.9	455.5	59.2
2001	24.5	25.6	405.6	455.7	59.2
2002	24.1	24.1	398.9	447.0	58.1

Source: *Agricultural Commodities, Australia (7121.0)*.

## 14.2 AREA OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY

	NSW mill. ha	Vic. mill. ha	Qld mill. ha	SA mill. ha	WA mill. ha	Tas. mill. ha	NT mill. ha	<b>Aust.(a)</b> mill. ha
1997	60.9	12.7	149.6	56.2	112.5	1.9	68.3	<b>462.2</b>
1998	60.3	12.7	148.2	57.5	115.8	1.9	67.3	<b>463.8</b>
1999	59.3	12.8	140.3	59.4	113.1	1.9	66.9	<b>453.7</b>
2000	62.1	13.3	145.4	59.9	105.6	1.8	67.5	<b>455.5</b>
2001	61.0	13.2	146.0	57.3	109.2	1.9	67.1	<b>455.7</b>
2002	63.4	12.8	141.4	53.5	109.0	1.8	65.2	<b>447.0</b>

(a) Includes ACT.

Source: *Agricultural Commodities, Australia (7121.0)*.

## Irrigation

The high variability in river flow and annual rainfall, which are features of the Australian environment, means that successful ongoing production of many crops and pastures is dependent on irrigation.

Rice is only grown in areas that can guarantee an adequate supply of irrigation water. Cotton, vegetables for human consumption, fruit (including nuts and grapes) and sugar cane are the other most intensively irrigated crops, with 91%, 84%, 79% and 43% respectively of their total growing areas being irrigated in 2002. However, the total area of land irrigated, about 2.5 million ha in 2002 (table 14.3), represents less than 1% of the total land used for agriculture.

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.

## Characteristics of Australian farms

At 30 June 2002 there were an estimated 135,377 establishments undertaking agricultural activity with an estimated annual value of agricultural operations greater than \$5,000. For the majority of these establishments (133,868) their primary activity was agriculture. While the remainder were undertaking some form of agricultural activity, their main activity was not in agriculture. The majority of agricultural establishments were engaged in either beef cattle farming (34,110), grain growing (15,911), mixed grain/sheep/beef farming (15,610), sheep farming (13,911) or dairy cattle farming (11,135).

Table 14.4 provides information on the numbers and types of establishments undertaking agricultural activity at 30 June 2002.

### 14.3 AREA OF CROPS AND PASTURES IRRIGATED — 2001-02

	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
Pastures (native or sown)	330	478	63	61	^11	29	4	—	976
Cereals									
Rice	143	^2	**	(a)	—	(a)	—	—	145
Other cereals	290	^33	^52	(a)	^—	(a)	—	—	376
Total	434	^35	^53	^5	—	^2	—	—	528
Cotton	^290	—	127	—	—	—	—	—	418
Sugar cane cut for crushing	**	—	233	—	4	—	—	—	237
Vegetables for human consumption	17	26	29	12	9	17	—	—	110
Fruit (incl. nuts)	28	24	32	19	6	^4	3	—	116
Grapevines	29	35	^2	61	^7	*1	—	—	137
All other crops	^26	8	^20	^10	3	14	—	—	81
<b>Total</b>	<b>1 126</b>	<b>588</b>	<b>541</b>	<b>174</b>	<b>39</b>	<b>68</b>	<b>8</b>	<b>—</b>	<b>2 545</b>

(a) Data not separately collected but included in Total cereals.

Source: *Agricultural Commodities, Australia, 2001-02 (7121.0)*.

### 14.4 ESTABLISHMENTS UNDERTAKING AGRICULTURAL ACTIVITY — 30 June 2002

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Agriculture									
Plant nurseries	858	340	625	130	189	52	21	5	2 220
Cut flower and flower seed growing	263	224	^185	87	^140	^38	9	—	945
Vegetable growing	831	1 011	1 379	513	517	545	9	—	4 805
Grape growing	1 220	2 243	^167	2 448	628	^119	4	4	6 833
Apple and pear growing	^176	^307	^37	^108	^154	137	—	1	919
Stone fruit growing	435	294	^114	195	^178	^41	—	1	1 258
Kiwi fruit growing	*24	4	*3	—	*4	—	—	—	^34
Fruit growing n.e.c.	1 881	510	2 018	560	318	^43	116	—	5 446
Grain growing	4 193	2 996	1 715	4 120	2 851	^33	2	—	15 911
Grain-sheep/beef cattle farming	6 669	2 824	1 289	1 915	2 860	^52	—	1	15 610
Sheep-beef cattle farming	3 726	2 288	867	795	453	269	—	26	8 424
Sheep farming	5 588	4 218	444	1 515	1 436	679	—	30	13 911
Beef cattle farming	10 722	7 698	11 285	1 234	1 893	1 048	211	19	34 110
Dairy cattle farming	1 615	6 696	1 292	590	358	580	3	1	11 135
Poultry farming (meat)	339	186	126	67	58	^14	1	—	790
Poultry farming (eggs)	^130	*152	^84	^30	61	^18	5	1	^481
Pig farming	^399	192	328	^124	87	^27	1	—	1 159
Horse farming	^631	^389	^516	^57	^129	^53	—	3	1 777
Deer farming	*28	*38	**	*21	**	*11	—	—	^125
Livestock farming n.e.c.	*311	^133	*194	*14	*66	*6	2	—	^725
Sugar cane growing	521	**	4 219	—	5	—	—	—	4 747
Cotton growing	321	—	375	—	—	—	—	—	697
Crop and plant growing n.e.c.	^214	^536	616	^130	*108	^190	11	1	1 806
Total	41 092	33 282	27 900	14 654	12 499	3 953	395	93	133 868
Other industries	^559	^299	^204	^169	^188	^74	11	3	1 509
<b>Total</b>	<b>41 651</b>	<b>33 581</b>	<b>28 104</b>	<b>14 824</b>	<b>12 688</b>	<b>4 027</b>	<b>406</b>	<b>96</b>	<b>135 377</b>

Source: *Agricultural Commodities, Australia, 2001-02 (7121.0)*.

## Employment in agriculture

The number of people employed in agriculture decreased in 2002 to 376,000 persons. The majority of persons employed in agriculture were male (68%). Around 83% of women employed in agriculture were married, compared with 70% of men.

Table 14.5 shows the average employment in agriculture and services to agriculture for each of the years 1997–2002.

**14.5 EMPLOYED PERSONS(a) IN AGRICULTURE AND RELATED SERVICES TO AGRICULTURE, Annual averages**

	Males '000	Females '000	Persons '000
1997	278.2	126.2	<b>404.4</b>
1998	268.0	124.5	<b>392.5</b>
1999	278.7	129.1	<b>407.7</b>
2000	279.7	129.5	<b>409.2</b>
2001	269.7	132.0	<b>401.7</b>
2002	256.9	119.1	<b>376.0</b>

(a) The estimates of employed persons include persons who worked without pay for at least one hour per week in a family business or on a farm (i.e. unpaid family helpers). Persons who worked in another industry and in agriculture are classified to the industry of predominant activity.

Source: ABS data available on request, Labour Force Survey.

## Gross value of agricultural commodities produced

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. In 2001–02, the estimate of gross value of agricultural production in current prices was \$39.6b.

Table 14.6 shows the gross value of agricultural commodities produced for the years 1996–97 to 2001–02. The values shown are the values of recorded production at the wholesale prices realised in the principal marketplace. Also shown are chain volume indexes of the value of production, which provide an indication of the change in value after the direct effects of price change are eliminated. Chain volume measures are discussed in the section *Chain volume or 'real' GDP* in *Chapter 29, National accounts*.

## Financial statistics of farm businesses

Estimates of selected financial aggregates of farm businesses in this section are based on data collected in the annual Australian Agricultural and Grazing Industries Survey (AAGIS) conducted by the Australian Bureau of Agricultural and Resource Economics (ABARE). This collection covers farm businesses engaged in grain growing, sheep and beef farming and beef cattle feedlot operations (Australian and New Zealand Standard Industrial Classification (ANZSIC) group 012, referred to as 'broadacre' industries).

#### 14.6 AGRICULTURAL COMMODITIES PRODUCED, Gross value and chain volume index(a)

	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
GROSS VALUE OF COMMODITIES PRODUCED (Current prices) (\$m)						
Crops						
Barley for grain	1 308.0	1 032.0	835.5	864.8	1 343.5	1 724.8
Oats for grain	226.6	223.3	156.6	118.4	138.4	251.3
Wheat for grain	4 877.9	3 801.5	4 011.0	4 831.2	5 130.4	6 356.3
Other cereal grains	764.9	702.1	810.9	750.4	881.2	989.0
Sugar cane cut for crushing	1 186.4	1 247.7	1 044.1	881.9	656.7	989.1
Fruit and nuts	1 667.8	1 586.8	1 763.0	1 761.1	2 041.5	2 129.7
Grapes	721.4	998.2	1 200.1	1 118.2	1 517.5	1 577.7
Vegetables	1 662.3	1 812.3	1 864.4	1 861.9	2 182.6	2 268.5
All other crops	3 580.5	3 904.3	4 540.7	4 735.1	4 642.4	5 116.3
<i>Total</i>	<i>15 995.8</i>	<i>15 308.2</i>	<i>16 226.3</i>	<i>16 923.0</i>	<i>18 534.2</i>	<i>21 402.7</i>
Livestock slaughterings and other disposals						
Cattle and calves	3 597.0	4 138.2	4 476.6	5 048.7	6 430.6	7 142.4
Sheep and lambs	1 042.6	1 066.2	1 053.5	1 053.5	1 401.8	2 117.6
Pigs	764.8	709.8	689.7	791.7	822.3	967.7
Poultry	932.0	1 053.6	1 018.5	1 030.8	1 060.2	1 174.9
<i>Total</i>	<i>6 376.3</i>	<i>6 991.9</i>	<i>7 255.8</i>	<i>7 944.2</i>	<i>9 737.8</i>	<i>11 434.5</i>
Livestock products						
Wool	2 621.2	2 753.9	2 141.0	2 149.2	2 541.2	2 713.2
Milk	2 808.9	2 817.0	2 899.6	2 845.2	3 053.3	3 171.1
Eggs	274.9	347.5	337.1	313.1	332.7	320.4
<i>Total(b)</i>	<i>5 758.7</i>	<i>5 957.8</i>	<i>5 411.8</i>	<i>5 345.4</i>	<i>5 964.7</i>	<i>6 750.7</i>
<b>Total value(c)</b>	<b>28 130.8</b>	<b>28 258.0</b>	<b>28 893.9</b>	<b>30 212.0</b>	<b>34 236.7</b>	<b>39 587.9</b>
CHAIN VOLUME INDEX OF GROSS VALUE OF COMMODITIES PRODUCED (Index number)						
Crops						
Barley for grain	80.9	77.7	72.3	60.8	81.4	100.0
Oats for grain	115.3	113.7	125.4	78.0	73.2	100.0
Wheat for grain	94.3	75.3	88.3	101.9	91.0	100.0
Other cereal grain	100.9	88.5	112.2	109.5	124.5	100.0
Legumes for grain	178.0	161.2	173.8	173.2	94.7	100.0
Oilseeds	44.9	49.5	103.1	136.1	99.3	100.0
Sugar cane cut for crushing	122.7	129.6	121.8	131.5	98.8	100.0
Cotton	92.1	99.5	96.2	99.5	98.5	100.0
Nursery production	68.0	60.0	78.2	96.2	98.6	100.0
Fruit and nuts	86.7	83.7	81.9	93.4	104.1	100.0
Grapes	58.9	58.1	71.6	73.5	90.9	100.0
Vegetables	78.2	80.8	85.0	95.7	102.3	100.0
All other crops	82.9	93.3	106.1	91.5	100.2	100.0
<i>Total</i>	<i>85.7</i>	<i>80.5</i>	<i>89.6</i>	<i>97.1</i>	<i>95.9</i>	<i>100.0</i>
Livestock slaughterings and other disposals						
Cattle and calves	92.9	96.9	99.6	100.0	104.3	100.0
Sheep and lambs	85.2	88.3	89.5	96.5	105.7	100.0
Pigs	87.4	86.8	91.5	91.9	92.3	100.0
Poultry	80.8	89.5	93.2	97.6	92.8	100.0
<i>Total</i>	<i>89.5</i>	<i>93.6</i>	<i>96.5</i>	<i>98.7</i>	<i>102.0</i>	<i>100.0</i>
Livestock products						
Wool	126.0	118.6	118.2	120.5	110.2	100.0
Milk	80.1	83.7	90.3	96.2	93.6	100.0
Eggs	94.6	96.2	101.1	97.3	105.8	100.0
<i>Total(b)</i>	<i>98.0</i>	<i>97.6</i>	<i>101.1</i>	<i>105.2</i>	<i>100.6</i>	<i>100.0</i>
<b>Total(c)</b>	<b>88.9</b>	<b>86.6</b>	<b>93.3</b>	<b>98.9</b>	<b>98.4</b>	<b>100.0</b>

(a) Chain volume indexes are compiled by linking together (compounding) movements in volumes, calculated using the average prices of the previous financial year, and applying the compounded movements to the current price estimates of the reference year, which for these estimates is 2001-02. (b) Includes honey and beeswax. (c) Includes pigs and poultry slaughterings in Tas. and NT, and livestock products in NT.

Source: *Agricultural Commodities, Australia (7121.0)*; *Agriculture, Australia (7113.0)*; ABS data available on request, *Australian National Accounts*.

## Financial performance

Selected financial performance measures — expressed as annual averages per farm — for all broadacre farm businesses for the years 1997–98 to 2001–02 are shown in table 14.7 and graphs 14.8, 14.9 and 14.10.

Higher prices for most major broadacre commodities, including wheat, wool and beef, contributed to a large increase in profits for the majority of Australia's broadacre farms in 2001–02. Overall, average total cash receipts for broadacre farms are estimated to have increased by 15% in 2001–02, following a similar increase from the previous year. Average total cash costs for broadacre farms increased by around 9% in 2001–02. A substantial portion of the increase was the result of higher prices for farm inputs.

Average cash income for the broadacre farms as a group rose by 29% to \$92,600 in 2001–02 (graph 14.8), among the highest recorded level in

the past 26 years (the period over which ABARE has been conducting the AAGIS). 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. It is a short-term measure of farm income because it takes no account of depreciation on assets.

Farm business profits averaged \$36,400 in 2001–02 (graph 14.9), the highest recorded in the past 26 years. Farm business profit is a longer term measure of the profitability of farms because it takes account of depreciation and inventory changes.

For the broadacre industries as a group, rate of return averaged 3.4% in 2001–02 (graph 14.10), the highest rate of return recorded since the early-1980s.

### 14.7 BROADACRE FARM BUSINESSES, Selected financial performance measures

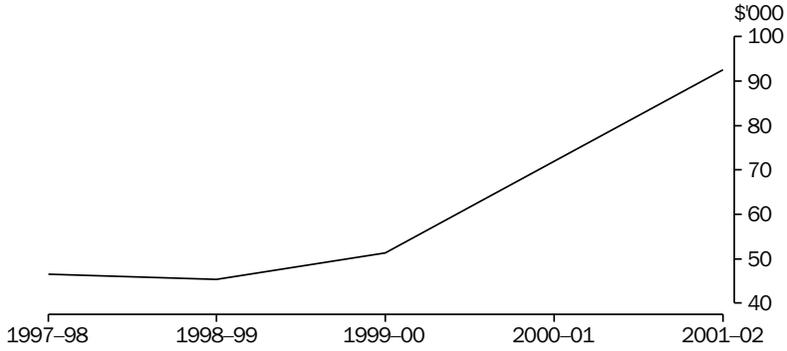
Annual average for farm	Units	1997–98	1998–99	1999–2000	2000–01	2001–02(a)
Total cash receipts	\$000	208.9	211.2	221.0	254.5	292.4
less Total cash costs	\$000	162.3	165.8	169.6	182.7	199.8
Farm cash income	\$000	46.5	45.4	51.3	71.9	92.6
plus Build-up in trading stocks	\$000	3.0	2.7	-1.2	-1.7	6.2
less Depreciation	\$000	18.3	20.5	21.2	22.3	23.8
less Operator and family labour	\$000	34.8	36.9	36.4	38.4	38.6
Farm business profit	\$000	-3.5	-9.4	-7.5	9.4	36.4
Profit at full equity(b)	\$000	12.8	7.2	8.8	27.9	56.2
plus Capital appreciation	\$000	21.7	15.1	22.7	90.6	75.0
Profit at full equity, incl. capital appreciation	\$000	34.5	22.3	31.4	118.5	131.2
Farm capital at 1 July	\$000	1 274.9	1 323.0	1 317.4	1 432.3	1 661.8
Rate of return, excl. capital appreciation(c)	%	1.0	0.5	0.7	1.9	3.4
Rate of return, incl. capital appreciation(c)	%	2.7	1.7	2.4	8.3	7.9
Off-farm income(d)	\$000	19.3	18.8	21.1	23.6	25.1

(a) Preliminary data. (b) Farm business profit, plus rent, interest and finance lease payments less depreciation on leased items.

(c) Computed by expressing profit at full equity as a percentage of total opening capital. (d) Collected for owner manager and spouse only. Includes income from wages, other businesses, investment and social welfare payments. Average for those farms for which off-farm income is available for both owner manager and spouse.

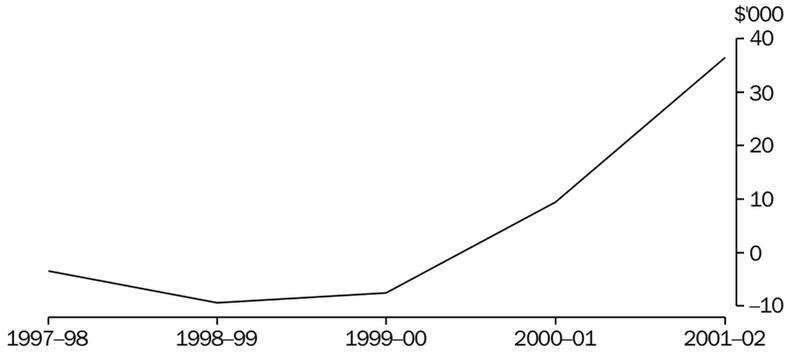
Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Farm Surveys Reports'.

#### 14.8 BROADACRE FARM BUSINESSES, Farm cash income



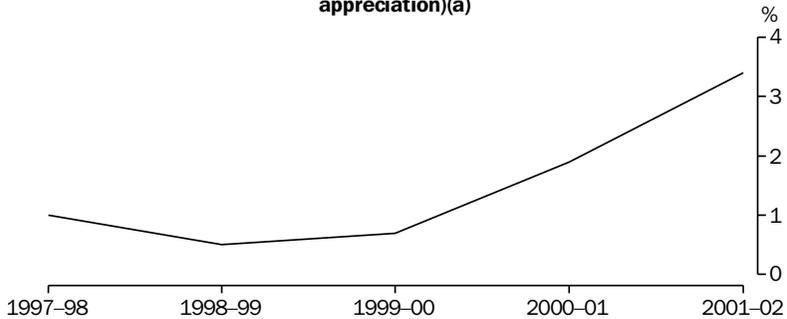
Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Farm Surveys Reports'.

#### 14.9 BROADACRE FARM BUSINESSES, Farm business profit



Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Farm Surveys Reports'.

#### 14.10 BROADACRE FARM BUSINESSES, Rate of return (excluding capital appreciation)(a)



(a) Computed by expressing profit at full equity as a percentage of total opening capital.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Farm Surveys Reports'.

## Crops

Table 14.11 shows the area of crops in the states and territories of Australia since 1880–81, and table 14.12 is a summary of the area, production and gross value of the principal crops in Australia over recent years.

### Cereal grains

In Australia, cereals are divided into autumn–winter–spring growing (winter cereals) and spring–summer–autumn growing (summer cereals). Winter cereals such as wheat, oats, barley and rye are usually grown in rotation with some form of pasture such as subterranean clover, medics or lucerne. In recent years, alternative winter crops such as canola, field peas and lupins have been introduced to crop rotation in areas where they had not previously been grown. Rice, maize and sorghum are summer cereals, the latter being grown in association with winter cereals in some areas. In northern Australia there are two rice growing seasons.

## Wheat

Wheat is Australia's largest crop. It 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 side of the continent (map 14.13).

Final estimates for the 2001–02 season show that wheat production increased by 10% over the 2000–01 season to 24.3 million tonnes (table 14.14). Western Australia recorded the largest increase in production, up by 33% to 7.8 million tonnes, followed by South Australia which was up by 15% to 4.8 million tonnes. New South Wales was the largest producer of wheat with a harvest of 8.0 million tonnes in 2001–02.

**14.11 AREA OF CROPS**

	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
1880–81	245	627	46	846	26	57	—	—	<b>1 846</b>
1890–91	345	822	91	847	28	64	—	—	<b>2 197</b>
1900–01	990	1 260	185	959	81	91	—	—	<b>3 567</b>
1910–11	1 370	1 599	270	1 112	346	116	—	—	<b>4 813</b>
1920–21	1 807	1 817	316	1 308	730	120	—	1	<b>6 099</b>
1930–31	2 756	2 718	463	2 196	1 939	108	1	2	<b>10 184</b>
1940–41	2 580	1 808	702	1 722	1 630	103	—	2	<b>8 546</b>
1949–50	2 295	1 881	832	1 518	1 780	114	—	4	<b>8 424</b>
1959–60	2 888	1 949	1 184	1 780	2 628	130	1	3	<b>10 564</b>
1969–70	4 999	2 212	2 208	2 290	3 912	98	6	2	<b>15 728</b>
1979–80	5 243	2 243	2 334	2 771	5 281	79	2	1	<b>17 954</b>
1990–91	4 073	2 063	2 872	2 933	5 359	75	6	—	<b>17 382</b>
1991–92	3 846	2 039	2 302	2 920	5 216	76	5	—	<b>16 404</b>
1992–93	3 906	2 258	2 316	3 073	5 668	73	4	1	<b>17 297</b>
1993–94	4 209	2 317	2 394	2 940	6 100	78	5	—	<b>18 043</b>
1994–95	3 432	2 296	2 056	2 991	6 182	77	4	—	<b>17 040</b>
1995–96	4 757	2 439	2 495	3 219	6 419	75	4	—	<b>19 409</b>
1996–97	5 589	2 552	2 685	3 279	6 950	73	5	—	<b>21 133</b>
1997–98	5 648	2 565	2 682	3 290	7 328	78	4	—	<b>21 595</b>
1998–99	6 173	2 749	3 014	3 648	7 597	76	7	—	<b>23 264</b>
1999–2000	6 114	3 081	3 130	3 670	7 691	77	6	—	<b>23 769</b>
2000–01	6 723	3 044	2 955	3 982	7 731	79	6	1	<b>24 520</b>
2001–02	6 635	2 958	2 683	4 175	7 525	78	6	—	<b>24 060</b>

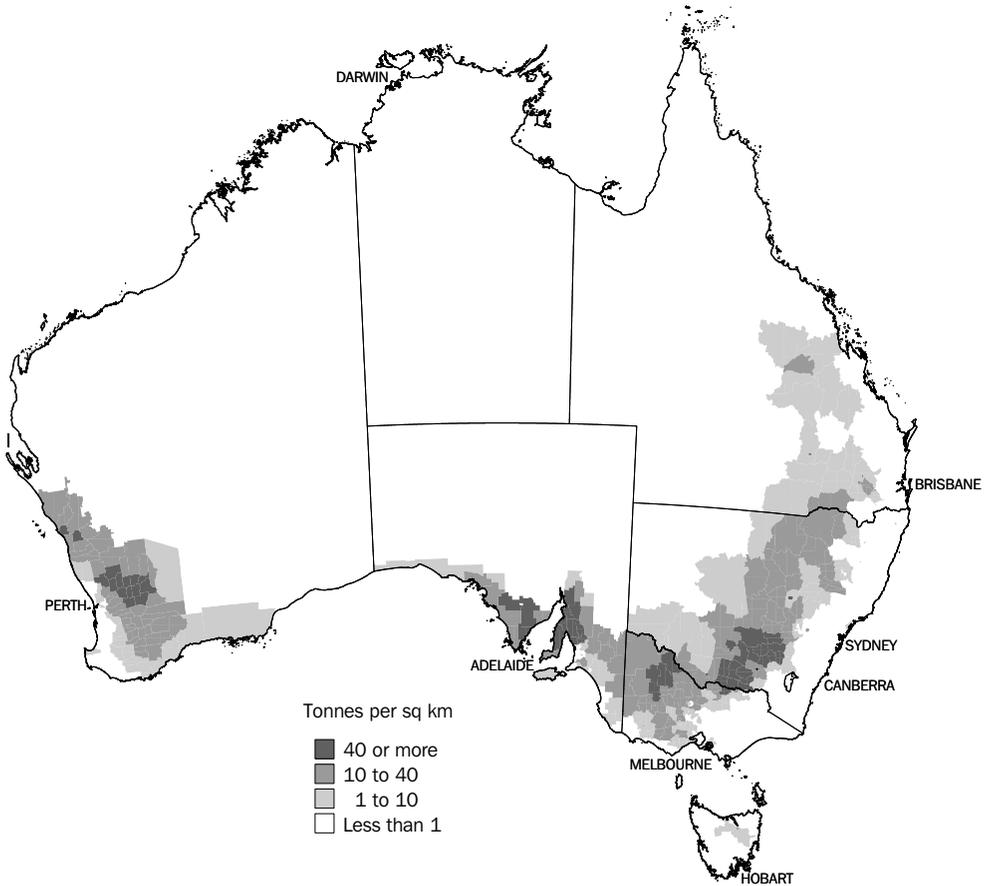
Source: *Agricultural Commodities, Australia (7121.0); Agriculture, Australia (7113.0).*

**14.12 SELECTED CROPS, Area, production and gross value**

	Area			Production			Gross value		
	1999–2000	2000–01	2001–02	1999–2000	2000–01	2001–02	1999–2000	2000–01	2001–02
	'000 ha	'000 ha	'000 ha	'000 tonnes	'000 tonnes	'000 tonnes	\$m	\$m	\$m
<b>Cereals for grain</b>									
Barley	2 596	3 454	3 707	5 032	6 743	8 280	865	1 343	1 725
Grain sorghum	622	758	823	2 116	1 935	2 021	260	279	349
Maize	82	74	83	406	345	454	62	65	90
Oats	584	650	784	1 118	1 050	1 434	118	138	251
Rice	131	177	144	1 084	1 643	1 192	289	350	327
Wheat	12 168	12 141	11 529	24 757	22 108	24 299	4 831	5 130	6 356
Lupins for grain	1 347	1 180	1 139	1 968	1 055	1 215	286	217	304
<b>Crops cut for hay</b>									
Cereal crops for hay	357	419	434	1 429	1 657	1 716	146	184	204
Non-cereal crops for hay	47	42	^41	159	115	124	^25	17	19
<b>Other crops</b>									
Sugar cane cut for crushing	428	403	426	38 165	28 117	31 424	882	657	989
Tobacco	3	2	^2	8	6	6	^49	39	37
Cotton	435	536	458	698	666	675	1 416	1 305	1 327
Peanuts (in shell)	20	17	^15	40	39	^29	^27	28	^21
Soybean	56	33	32	104	49	63	36	18	^22
Canola	1 911	1 459	1 332	2 460	1 775	1 756	760	545	675
Sunflower	162	82	79	170	77	70	64	27	^27
<b>Orchard fruit</b>									
Oranges	n.a.	n.a.	n.a.	510	550	451	276	277	281
Apples	n.a.	n.a.	n.a.	320	325	321	274	282	348
Pears (excl. Nashi)	n.a.	n.a.	n.a.	156	169	145	72	90	99
Peaches	n.a.	n.a.	n.a.	86	74	89	74	73	76
<b>Other fruit</b>									
Bananas	12	12	13	257	358	313	284	409	415
Pineapples	3	3	3	139	120	119	44	44	40
Grapes	111	131	143	1 311	1 546	1 754	1 118	1 518	1 578
<b>Vegetables</b>									
Carrots	7	8	8	283	321	331	154	189	199
Potatoes	37	40	38	1 200	1 302	1 333	382	458	485
Tomatoes	8	10	8	414	556	425	190	257	^230
<b>All crops (excl. pastures and grasses)</b>	<b>23 769</b>	<b>24 520</b>	<b>24 060</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>16 316</b>	<b>17 759</b>	<b>20 625</b>

Source: *Agricultural Commodities, Australia (7121.0)*.

### 14.13 WHEAT FOR GRAIN, Production — 2000–01(a)



(a) This map has been generated using Agricultural Census data at the Statistical Local Area level for 2000–01.

Source: AgStats on GSP (7117.0.30.001) CD-ROM product 1996–97 to 2000–01.

### 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. They have a high feed value and produce a greater bulk of growth than other winter cereals; they need less cultivation and respond well to superphosphates and nitrogen.

Oats have two main uses: as a grain crop, and as a fodder crop (following sowing, fallow or rough sowing into stubble or clover pastures). Fodder crops can either be grazed and then harvested for grain after removal of livestock, or else mown and baled or cut for chaff.

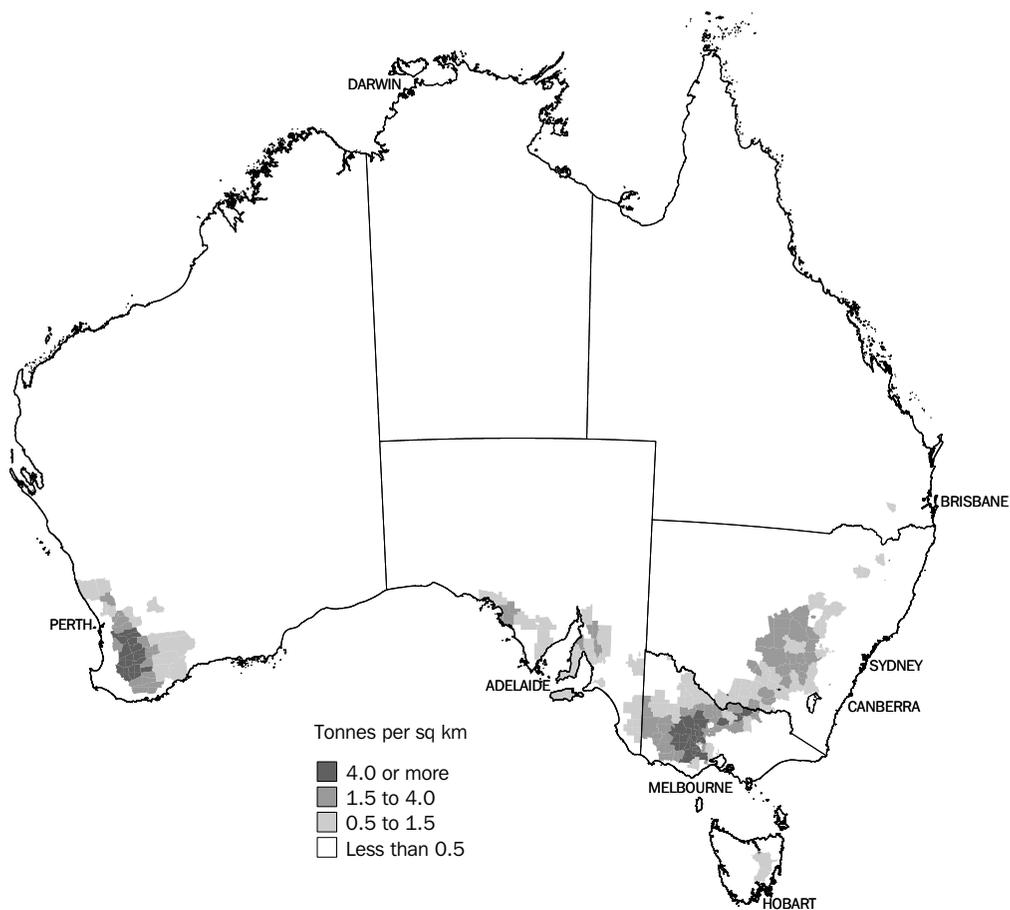
Map 14.15 shows the production of oats for grain in Australia in 2000–01.

### 14.14 WHEAT FOR GRAIN

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1996-97	3 192	963	980	1 535	4 264	2	<b>10 936</b>
1997-98	2 936	857	1 001	1 438	4 205	3	<b>10 441</b>
1998-99	3 174	949	1 139	1 762	4 515	4	<b>11 543</b>
1999-2000	3 425	1 235	1 096	1 850	4 556	6	<b>12 168</b>
2000-01	3 671	1 143	885	1 976	4 460	7	<b>12 141</b>
2001-02	3 446	1 136	604	1 987	4 350	6	<b>11 529</b>
PRODUCTION ('000 tonnes)							
1996-97	8 363	2 262	1 980	2 795	7 516	8	<b>22 925</b>
1997-98	5 906	1 503	1 392	2 689	7 725	12	<b>19 227</b>
1998-99	6 563	1 462	1 941	3 310	8 170	18	<b>21 465</b>
1999-2000	8 602	2 642	1 904	2 586	9 004	20	<b>24 757</b>
2000-01	7 867	3 080	1 157	4 162	5 814	26	<b>22 108</b>
2001-02	8 043	2 791	901	4 778	7 760	25	<b>24 299</b>

Source: *Agricultural Commodities, Australia (7121.0)*.

### 14.15 OATS FOR GRAIN, Production — 2000-01(a)



(a) This map has been generated using Agricultural Census data at the Statistical Local Area level for 2000-01.

Source: *AgStats on GSP (7117.0.30.001) CD-ROM product 1996-97 to 2000-01*.

Production of oats increased by 36% to 1.4 million tonnes in 2001–02, with the largest state production being in Western Australia, increasing 75% to 557,000 tonnes. New South Wales production increased 30% to 320,000 tonnes, whilst production in Victoria decreased by 5% to 334,000 tonnes. Production in South Australia increased by 74% to 203,000 tonnes (table 14.16).

## Barley

This cereal contains two main groups of varieties, 2-row and 6-row. 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. When sown for fodder, sowing may take place either early or late in the season, as barley has a short growing period. It may therefore provide grazing or fodder supplies when other sources are not available. Barley grain may be crushed to meal for stock or sold for malting. Map 14.17 shows the production of barley for grain in Australia in 2000–01.

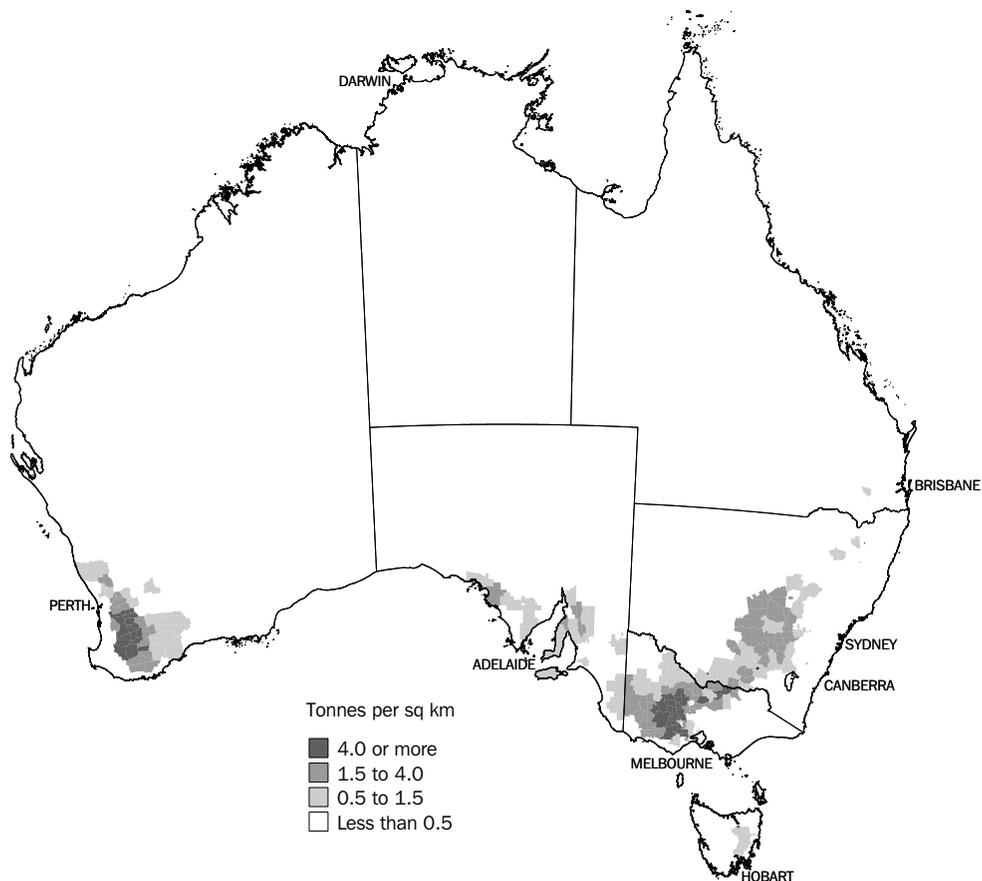
Barley production increased by 23% to 8.3 million tonnes in 2001–02 (table 14.18). The largest increase in production occurred in Western Australia, where production increased by 67% to 2.3 million tonnes. South Australia was the largest producer of barley, accounting for 2.8 million tonnes.

**14.16 OATS FOR GRAIN**

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1996–97	393	175	39	121	316	8	<b>1 052</b>
1997–98	325	172	16	111	305	8	<b>937</b>
1998–99	354	188	18	112	228	8	<b>909</b>
1999–2000	160	138	10	70	199	6	<b>584</b>
2000–01	168	140	13	75	248	7	<b>650</b>
2001–02	231	142	^11	^108	287	6	<b>784</b>
PRODUCTION ('000 tonnes)							
1996–97	607	304	26	156	546	14	<b>1 653</b>
1997–98	488	369	13	153	596	15	<b>1 634</b>
1998–99	669	458	15	178	463	14	<b>1 798</b>
1999–2000	284	296	12	78	439	10	<b>1 118</b>
2000–01	246	351	6	117	317	13	<b>1 050</b>
2001–02	320	334	^7	^203	557	12	<b>1 434</b>

Source: *Agricultural Commodities, Australia* (7121.0).

### 14.17 BARLEY FOR GRAIN, Production — 2000–01(a)



(a) This map has been generated using Agricultural Census data at the Statistical Local Area level for 2000–01.

Source: AgStats on GSP (7117.0.30.001) CD-ROM product 1996–97 to 2000–01.

### 14.18 BARLEY FOR GRAIN

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1996–97	668	585	180	1 009	909	15	<b>3 366</b>
1997–98	701	618	135	1 017	1 036	13	<b>3 521</b>
1998–99	638	568	163	975	811	11	<b>3 167</b>
1999–2000	476	585	130	845	550	9	<b>2 596</b>
2000–01	615	693	112	1 041	983	10	<b>3 454</b>
2001–02	665	700	96	1 151	1 088	7	<b>3 707</b>
PRODUCTION ('000 tonnes)							
1996–97	1 483	1 189	429	1 923	1 635	35	<b>6 696</b>
1997–98	1 365	928	205	2 027	1 926	31	<b>6 482</b>
1998–99	1 247	870	320	2 051	1 469	30	<b>5 987</b>
1999–2000	1 040	1 189	254	1 409	1 117	22	<b>5 032</b>
2000–01	1 253	1 670	115	2 320	1 358	26	<b>6 743</b>
2001–02	1 382	1 656	171	2 782	2 263	26	<b>8 280</b>

Source: Agricultural Commodities, Australia (7121.0).

## Grain sorghum

The sorghums are summer growing crops which are used in a number of ways: grain sorghum for grain; sweet or fodder sorghum, Sudan grass and, more recently, Columbus grass for silage, green feed and grazing; and broom millet for brooms and brushware. However, the grain is used primarily as stockfeed and is an important source for supplementing other coarse grains for this purpose.

Grain sorghum has been grown extensively only in the last two decades, with Queensland producing 62% of the total harvest of 2.0 million tonnes in 2001–02 (table 14.19). Grain sorghum is the third

biggest cereal crop (in terms of production) in Australia despite it only being grown in significant quantities in Queensland and New South Wales.

## Maize

Maize is a summer cereal demanding specific soil and climatic conditions. Maize for grain is almost entirely confined to the south-east regions and the Atherton Tablelands of Queensland, and the north coast, northern slopes and tablelands, and the Murrumbidgee Irrigation Area in New South Wales. Small amounts are grown for green feed and silage in association with the dairy industry.

In 2001–02, maize for grain production increased by 32% to 454,000 tonnes (table 14.20).

### 14.19 GRAIN SORGHUM

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1996–97	117	1	424	—	1	—	544
1997–98	123	3	379	—	1	—	507
1998–99	216	**	367	—	*2	—	587
1999–2000	200	*1	419	—	*2	—	622
2000–01	258	2	494	—	2	—	758
2001–02	258	**	562	—	**	—	823
PRODUCTION ('000 tonnes)							
1996–97	417	3	1 003	—	2	—	1 425
1997–98	382	6	691	—	2	—	1 081
1998–99	822	**	1 059	—	*6	—	1 891
1999–2000	804	**	1 308	—	*2	—	2 116
2000–01	770	4	1 156	—	4	—	1 935
2001–02	767	*4	1 247	—	**	—	2 021

Source: *Agricultural Commodities, Australia (7121.0)*.

### 14.20 MAIZE FOR GRAIN

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1996–97	31	1	34	—	1	—	67
1997–98	22	1	34	—	—	—	57
1998–99	27	1	37	**	*—	—	64
1999–2000	22	1	59	—	*—	—	82
2000–01	26	1	47	—	*—	—	74
2001–02	28	*1	53	—	**	—	83
PRODUCTION ('000 tonnes)							
1996–97	256	7	130	—	5	—	398
1997–98	161	10	97	—	3	—	272
1998–99	186	3	145	**	*4	—	338
1999–2000	178	4	224	—	*—	—	406
2000–01	178	8	159	—	*—	—	345
2001–02	246	*9	198	—	*—	—	454

Source: *Agricultural Commodities, Australia (7121.0)*.

## Rice

Nearly all of Australia's rice is grown in New South Wales, with production centred in the Murrumbidgee and Murray Irrigation Areas. It was first grown commercially in 1924–25 in the Murrumbidgee Irrigation Area, which remains the largest individual producing region to this day.

Rice production fell in 2001–02 by 27% to 1.2 million tonnes (table 14.21).

## Vegetables and fruit

### Vegetables

In 2001–02 the area sown to vegetables was 131,700 ha, a decrease of 4% from the previous year. Potatoes were by far the largest vegetable crop in terms of area and production, accounting for 29% of the total area of vegetables planted in 2001–02 (tables 14.22 and 14.23).

#### 14.21 RICE FOR GRAIN

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1996–97	151	1	—	—	—	—	<b>152</b>
1997–98	146	1	—	—	—	—	<b>147</b>
1998–99	148	1	—	—	—	—	<b>148</b>
1999–2000	131	—	—	—	**	—	<b>131</b>
2000–01	175	2	—	—	*—	—	<b>177</b>
2001–02	143	^2	—	—	—	—	<b>144</b>
PRODUCTION ('000 tonnes)							
1996–97	1 248	6	—	—	—	—	<b>1 255</b>
1997–98	1 320	4	—	—	—	—	<b>1 324</b>
1998–99	1 357	5	—	—	—	—	<b>1 362</b>
1999–2000	1 084	—	—	—	**	—	<b>1 084</b>
2000–01	1 625	18	—	—	*—	—	<b>1 643</b>
2001–02	1 179	*14	—	—	—	—	<b>1 192</b>

Source: *Agricultural Commodities, Australia (7121.0)*.

#### 14.22 SELECTED VEGETABLES, Area

	French and runner beans	Carrots	Onions	Green peas	Lettuces	Potatoes	Pumpkins	Tomatoes	All vegetables
	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha	'000 ha
1996–97	7.9	7.0	4.8	9.3	4.7	41.1	6.3	8.8	<b>129.7</b>
1997–98	6.6	7.2	5.6	7.0	5.7	42.6	5.9	8.0	<b>130.6</b>
1998–99	5.9	6.5	5.4	6.2	6.2	41.3	7.5	8.5	<b>130.2</b>
1999–2000	6.6	7.0	5.3	5.5	5.2	36.8	9.0	8.3	<b>127.4</b>
2000–01	6.6	8.0	5.0	5.8	5.8	39.6	8.3	9.6	<b>137.1</b>
2001–02	6.6	7.7	5.5	6.0	6.0	37.9	6.5	8.5	<b>131.7</b>

Source: *Agricultural Commodities, Australia (7121.0)*.

#### 14.23 SELECTED VEGETABLES, Production

	French and runner beans	Carrots	Onions	Green peas (pod weight)	Lettuces	Potatoes	Pumpkins	Tomatoes
	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes
1996–97	37.6	257.4	196.5	94.2	110.8	1 286.1	87.1	393.1
1997–98	35.6	266.5	218.9	76.0	129.1	1 371.6	84.8	380.1
1998–99	30.4	256.6	224.0	65.7	131.1	1 326.8	87.6	394.4
1999–2000	34.5	283.3	247.1	66.9	151.9	1 199.6	108.8	413.6
2000–01	32.8	320.9	221.9	57.7	152.7	1 302.1	109.4	556.2
2001–02	33.7	331.1	282.5	62.4	135.0	1 333.2	96.3	425.0

Source: *Agricultural Commodities, Australia (7121.0)*.

## Fruit (excluding grapes)

A wide variety of fruit is grown in Australia, ranging from pineapples, mangoes and pawpaws in the tropics to pome, stone and berry fruits in temperate regions. Table 14.24 shows the number of trees for the main types of orchard fruit, and the area under cultivation for bananas and pineapples.

The most significant crops in terms of gross value of production are bananas, oranges and apples. In 2001–02, the value of the apple crop increased 34% (table 14.25). While bananas, oranges and apples remain the principal fruit crops in Australia, some other fruit types have experienced considerable growth in recent years, for example, mandarins and strawberries.

**14.24 SELECTED FRUIT, Number of trees(a) and area**

	Orchard fruit					Area of tropical fruit		All area of fruit and nuts (excluding grapes)	
	Apples	Apricots	Oranges	Peaches	Pears	Plums and prunes	Bananas		Pineapples
	'000 trees	'000 trees	'000 trees	'000 trees	'000 trees	'000 trees	ha		ha
1996–97	5 656	629	6 736	1 475	1 416	931	9 589	2 668	<b>137 086</b>
1997–98	5 845	569	6 667	1 498	1 381	1 015	10 478	2 762	<b>144 082</b>
1998–99	5 969	565	6 400	1 509	1 401	1 024	11 405	2 821	<b>145 265</b>
1999–2000	6 115	520	6 945	1 972	1 401	1 420	11 730	2 817	<b>154 049</b>
2000–01	6 455	498	6 669	1 674	1 373	1 328	11 737	2 733	<b>170 545</b>
2001–02	8 070	^411	6 767	1 587	1 312	1 325	12 583	2 963	<b>161 439</b>

(a) Refers to trees of bearing age, that is four years and over for apples, six years and over for other fruit.

Source: *Agricultural Commodities, Australia (7121.0)*.

**14.25 SELECTED FRUIT, Quantity and value of production**

	Apples	Apricots	Oranges	Peaches	Pears	Plums and prunes	Bananas	Pineapples
QUANTITY OF PRODUCTION ('000 tonnes)								
1996–97	353.1	25.9	522.6	72.1	167.6	25.2	199.6	123.0
1997–98	308.9	19.9	499.8	64.8	152.9	26.4	223.0	123.0
1998–99	334.4	21.5	445.8	66.0	156.7	22.7	225.2	131.4
1999–2000	319.7	19.9	510.0	86.0	156.4	24.2	256.9	139.3
2000–01	324.6	20.6	550.2	74.1	168.9	31.3	358.4	119.6
2001–02	320.5	^12.4	450.6	88.7	144.9	25.5	313.3	119.3
GROSS VALUE OF PRODUCTION (\$m)								
1996–97	378.4	39.1	256.3	60.1	106.2	38.6	216.6	39.3
1997–98	272.7	31.0	257.9	53.4	107.8	44.1	230.3	37.3
1998–99	321.1	27.9	296.2	65.5	112.4	42.4	266.3	39.4
1999–2000	273.7	^31.8	276.4	74.3	72.1	43.4	283.8	43.7
2000–01	282.0	29.5	276.8	72.7	90.2	58.5	408.6	44.0
2001–02	377.5	18.1	280.8	75.7	99.4	52.7	415.3	40.1

Source: *Agricultural Commodities, Australia (7121.0)*.

## Grapes

Grapes are a temperate crop requiring predominantly winter rainfall and warm to hot summer conditions for ripening. An absence of late spring frosts is essential if the loss of the developing fruit is to be prevented. Grapes are grown for winemaking, drying and, to a lesser extent, for table use. Some of the better known grape producing areas are the Adelaide Hills, Barossa Valley, Clare Valley, Riverland, McLaren

Vale and Coonawarra in South Australia; Sunraysia and the Yarra Valley in Victoria; the Hunter and Riverina in New South Wales; the Swan Valley and Margaret River in Western Australia; and the Tamar Valley and Coal River Valley in Tasmania.

The gross value of grape production for 2001–02 increased by 4% from the previous year, to \$1.6b. Table 14.26 and 14.27 shows the area of vines and the grapes produced by grape variety.

### 14.26 VITICULTURE, Area, production and value

	Area		Production of grapes for		Total production(a)	
	Bearing	Total	Winemaking	Drying	Quantity	Gross value
	'000 ha	'000 ha	'000 tonnes fresh weight	'000 tonnes fresh weight	'000 tonnes fresh weight	\$m
1996–97	72	90	743	136	943	721.4
1997–98	78	99	871	177	1 112	998.2
1998–99	95	123	1 076	119	1 266	1 200.1
1999–2000	111	140	1 111	133	1 311	1 118.2
2000–01	131	148	1 391	90	1 546	1 517.5
2001–02	143	159	1 515	153	1 754	1 577.7

(a) Includes grapes used for table and other purposes.

Source: *Agricultural Commodities, Australia (7121.0); Australian Wine and Grape Industry (1329.0)*.

### 14.27 VITICULTURE, Area and production — 2001–02

Variety	Area of vines at harvest			Production of grapes used for			
	Bearing	Not yet bearing	All vines	Winemaking	Drying	Other	Total
	ha	ha	ha	tonnes fresh weight	tonnes fresh weight	tonnes fresh weight	tonnes fresh weight
<b>Red grapes</b>							
Cabernet Sauvignon	27 383	2 190	29 573	257 223	95	279	257 597
Currant	751	127	879	549	12 103	315	12 968
Grenache	2 328	200	2 528	26 260	34	184	26 477
Mataro	1 113	125	1 238	12 452	18	66	12 537
Pinot Noir	3 785	629	4 414	21 341	66	27	21 435
Shiraz	33 827	3 204	37 031	326 564	27	276	326 866
Other red grapes	18 915	2 592	21 506	203 341	2 307	29 604	235 251
<b>Total</b>	<b>88 102</b>	<b>9 067</b>	<b>97 169</b>	<b>847 730</b>	<b>14 650</b>	<b>30 751</b>	<b>893 131</b>
<b>White grapes</b>							
Chardonnay	18 597	3 127	21 724	256 328	528	40	256 896
Doradillo	244	3	247	6 977	19	120	7 116
Muscat Gordo Blanco	2 424	107	2 530	51 064	5 771	155	56 990
Palomino and Pedro Ximenes	197	13	210	2 462	50	—	2 514
Riesling	3 431	532	3 962	27 838	223	12	28 072
Semillon	6 422	188	6 610	100 785	215	76	101 076
Sultana	10 340	565	10 906	65 358	124 212	26 650	216 219
Waltham Cross	277	10	287	831	2 368	889	4 087
Other white grapes	13 438	1 615	15 055	156 126	4 868	27 830	188 827
<b>Total</b>	<b>55 271</b>	<b>6 153</b>	<b>61 425</b>	<b>666 771</b>	<b>138 213</b>	<b>55 772</b>	<b>860 757</b>
<b>Total grapes</b>	<b>143 373</b>	<b>15 222</b>	<b>158 594</b>	<b>1 514 501</b>	<b>152 863</b>	<b>86 524</b>	<b>1 753 888</b>

Source: *Australian Wine and Grape Industry, 2002 (1329.0)*.

## 14.28 OILSEEDS

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 ha)							
1996–97	247	115	112	42	107	—	<b>622</b>
1997–98	310	125	89	67	248	—	<b>839</b>
1998–99	496	222	145	136	537	1	<b>1 538</b>
1999–2000	613	319	143	216	879	*1	<b>2 172</b>
2000–01	569	266	79	157	517	—	<b>1 589</b>
2001–02	585	241	^60	165	394	^1	<b>1 447</b>
PRODUCTION ('000 tonnes)							
1996–97	432	147	120	57	108	—	<b>864</b>
1997–98	419	142	82	92	270	—	<b>1 005</b>
1998–99	793	268	166	196	615	1	<b>2 039</b>
1999–2000	968	438	151	249	963	*2	<b>2 770</b>
2000–01	894	383	73	206	353	—	<b>1 910</b>
2001–02	796	349	^52	273	419	^1	<b>1 890</b>

Source: *Agricultural Commodities, Australia (7121.0)*.

## Selected other crops

### Oilseeds

The oilseeds industry is a relatively young industry by Australian agricultural standards. The specialist oilseed crops grown in Australia include sunflower, soybeans, canola and safflower. Sunflower and soybeans are summer crops while the others are winter crops. In Australia, oilseeds are crushed for their oil, which is used for edible and industrial purposes, and for protein meals for livestock feeds.

The 1990s saw the emergence of canola as the main oilseed crop, with production increasing from around 70,000 tonnes in 1990–91 to 2.5 million tonnes in 1999–2000 prior to dropping to 1.8 million tonnes in 2001–02 (table 14.12). Canola production accounted for over 90% of the total Australian oilseed crop of 1.9 million tonnes in 2001–02 (table 14.28). Before the emergence of canola, the main specialist oilseed crop was sunflower seed. Peanuts and cotton are also major sources of oil, but as a by-product to their main outputs, which are food and fibre.

### Cotton

Cotton is grown mainly in New South Wales and Queensland, primarily for its fibre (lint). 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, which is a protein roughage, and is used as a stock feed.

The estimated preliminary gross value of cotton lint and cotton seed in 2001–02 was \$1.3m, a 7% decrease from the previous year (table 14.29).

### 14.29 COTTON LINT

	Area '000 ha	Quantity '000 tonnes	Gross value(a)
			\$m
1996–97	378	560	1 156
1997–98	381	564	1 228
1998–99	446	634	1 353
1999–2000	435	698	1 416
2000–01	536	666	1 305
2001–02	458	675	1 327

(a) Includes value of cotton lint and cotton seed.

Source: *Agricultural Commodities, Australia (7121.0)*.

### Sugar

Sugar cane is grown commercially in Australia along the east coast over a distance of some 2,100 kilometres in a number of areas from Maclean in northern New South Wales to Mossman in Queensland. More recently, it has also been grown in Western Australia.

About 90% of production occurs in Queensland (table 14.30), with 75% of the crop grown north of the Tropic of Capricorn in areas where rainfall is reliable and the warm, moist and sunny conditions are ideal for growing sugar cane.

### 14.30 SUGAR CANE CUT FOR CRUSHING, Area, production and yield

	New South Wales			Queensland			Western Australia		
	Area harvested	Production	Yield	Area harvested	Production	Yield	Area harvested	Production	Yield
	'000 ha	'000 tonnes	tonnes/ha	'000 ha	'000 tonnes	tonnes/ha	'000 ha	'000 tonnes	tonnes/ha
1996-97	18	2 231	124.0	371	36 232	97.6	1	170	164.7
1997-98	19	2 416	127.0	394	36 790	93.4	3	326	126.7
1998-99	20	2 555	126.0	379	35 587	93.9	3	392	135.5
1999-2000	20	2 493	123.8	405	35 316	87.2	3	355	123.2
2000-01	18	1 826	102.5	382	25 867	67.7	3	423	122.2
2001-02	^25	^2 886	114.4	398	28 250	70.9	3	288	105.9

Source: *Agricultural Commodities, Australia (7121.0)*.

### Crops and pastures cut for hay or silage

To counter Australia's seasonal conditions and unreliable rainfall, many farmers use hay and silage as methods of fodder conservation to supplement pasture and natural sources of stockfeed.

Considerable areas of Australia are devoted to fodder crops and pastures, which are either used for grazing (as green feed) or harvested and conserved as hay or silage (table 14.31).

#### 14.31 CROPS AND PASTURES CUT FOR HAY OR SILAGE

	Hay		Silage made
	Area	Production	Production
	'000 ha	'000 tonnes	'000 tonnes
1998-99	1 568	6 245	2 770
1999-2000	1 373	5 331	2 981
2000-01	1 521	6 433	2 960
2001-02	1 416	5 864	2 966

Source: *Agricultural Commodities, Australia (7121.0)*.

### Livestock

Cattle, sheep and pigs are the main livestock grown in Australia and have been present since the earliest days of European settlement.

Table 14.32 provides an insight into the change in livestock numbers from 1861.

#### 14.32 LIVESTOCK

	Cattle	Sheep and lambs	Pigs
	'000	'000	'000
1861	3 958	20 135	351
1871	4 276	41 594	543
1881	7 527	62 184	816
1891	10 300	97 881	891
1901	8 640	70 603	950
1911	11 745	98 066	1 026
1921	13 500	81 796	674
1931	11 721	110 568	1 072
1941	13 256	122 694	1 797
1951	15 229	115 596	1 134
1961	17 332	152 579	1 615
1971	24 373	177 792	2 590
1981	25 168	134 407	2 430
1991	23 662	163 238	2 531
1992	23 880	148 203	2 570
1993	24 062	138 099	2 646
1994	25 758	132 569	2 775
1995	25 731	120 862	2 653
1996	26 377	121 116	2 526
1997	26 695	120 228	2 555
1998	26 851	117 491	2 768
1999	26 578	115 456	2 626
2000	27 588	118 552	2 511
2001	27 722	110 928	2 748
2002	27 870	106 166	2 940

Source: *Agricultural Commodities, Australia (7121.0)*.

## Cattle

Cattle farming occurs in all states and territories. While dairy cattle are restricted mainly to southern and coastal districts, beef cattle are concentrated in Queensland and New South Wales. Table 14.33 shows the number of cattle by age, sex and purpose.

Cattle numbers in Australia increased slowly during the 1960s and 1970s, despite seasonal changes and heavy slaughtering, to a peak of 33.4 million in 1976. Beef cattle production is often combined with cropping, dairying and sheep. In the 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, because the more favourable environment allows the development of improved pastures (map 14.34).

Drought conditions in the early 1980s led to a decline in the beef herd until 1984. For the next five years 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 27.6 million in 2000, and have increased only marginally since then, largely due to very dry conditions over much of Australia in 2002.

Table 14.35 shows the number of cattle by state and territory.

## Dairying

Dairying is a major Australian agricultural industry. The preliminary estimate of gross value of dairy production at farm gate prices in 2001–02 was \$3.7b (table 14.36). This represented 9% of the gross value of agricultural production in Australia and placed dairy production third behind beef and wheat. Table 14.33 shows that the number of milk cattle in 2002, at 3.1 million, was 3% less than in 2001.

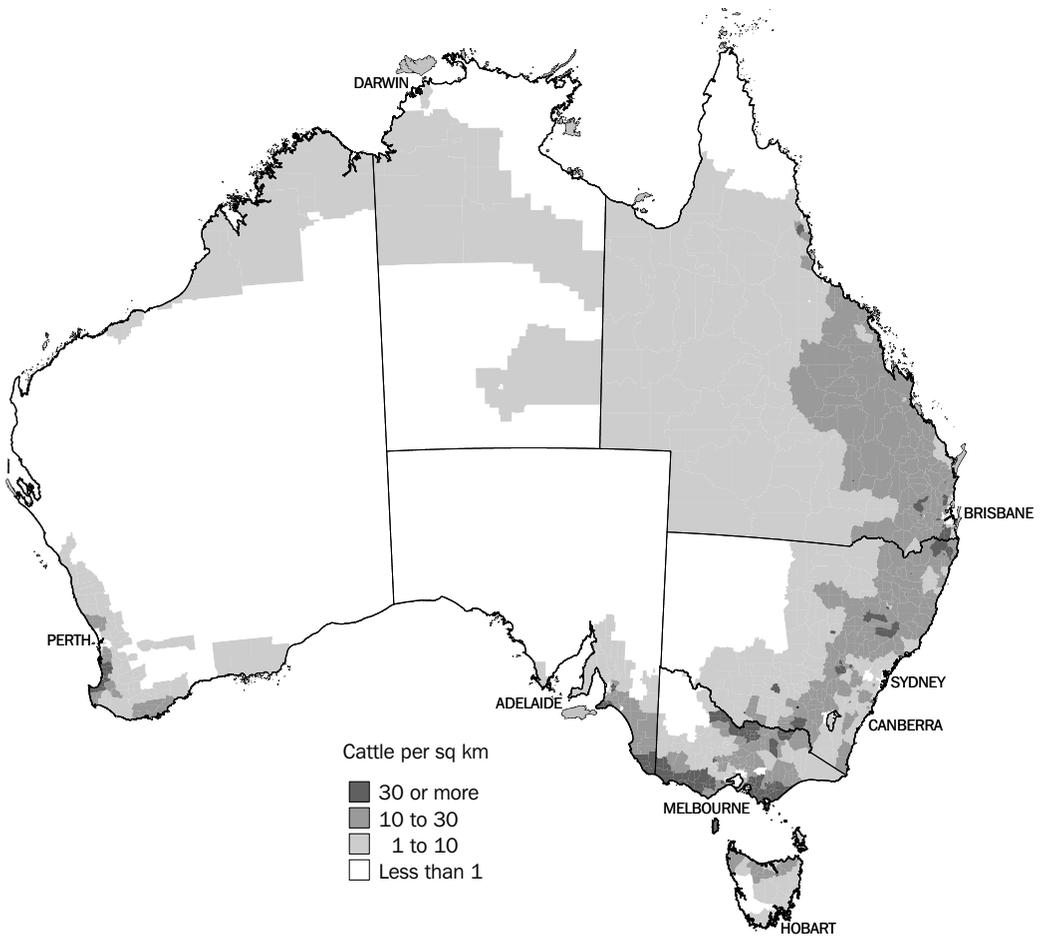
The article at the end of this chapter *The Australian dairy industry* traces the development of the industry and examines its recent performance.

**14.33 CATTLE, By purpose**

	1997	1998	1999	2000	2001	2002
	'000	'000	'000	'000	'000	'000
<b>Milk cattle</b>						
Cows (in milk and dry)	1 977	2 060	2 155	2 171	2 176	2 123
Other milk cattle	982	1 015	1 065	969	1 041	1 008
<b>Total</b>	<b>2 958</b>	<b>3 076</b>	<b>3 220</b>	<b>3 140</b>	<b>3 217</b>	<b>3 131</b>
<b>Meat cattle</b>						
Bulls used or intended for service	551	547	528	518	591	620
Cows and heifers (1 year old and over)	11 879	11 783	11 621	12 282	12 007	12 652
Calves under 1 year old	6 029	6 026	5 740	5 872	6 083	5 679
Other cattle (1 year old and over)	5 278	5 420	5 469	5 774	5 823	5 788
<b>Total</b>	<b>23 736</b>	<b>23 776</b>	<b>23 358</b>	<b>24 448</b>	<b>24 504</b>	<b>24 739</b>
<b>Total cattle</b>	<b>26 695</b>	<b>26 851</b>	<b>26 578</b>	<b>27 588</b>	<b>27 722</b>	<b>27 870</b>

Source: *Agricultural Commodities, Australia (7121.0)*.

**14.34 CATTLE FOR ALL PURPOSES(a) — 30 June 2001(b)**



(a) Excluding house cows. (b) This map has been generated using Agricultural Census data at the Statistical Local Area level for 2000–01.

Source: AgStats on GSP (7117.0.30.001) CD-ROM product 1996–97 to 2000–01.

**14.35 CATTLE, By state and territory**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Aust.(a)
	'000	'000	'000	'000	'000	'000	'000	'000
1997	6 511	4 411	10 415	1 181	1 909	725	1 530	<b>26 695</b>
1998	6 351	4 142	10 867	1 214	1 973	728	1 567	<b>26 851</b>
1999	6 291	4 125	10 748	1 183	1 931	724	1 567	<b>26 578</b>
2000	5 970	4 264	11 808	1 184	2 165	617	1 571	<b>27 588</b>
2001	6 215	4 405	11 376	1 242	2 128	636	n.p.	<b>27 722</b>
2002	6 021	4 412	11 544	1 381	2 104	619	n.p.	<b>27 870</b>

(a) Includes ACT.

Source: *Agricultural Commodities, Australia* (7121.0).

## Dairy production

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 it remains uncommon in Australia. However, the use of supplementary feed, such as grains, has become more common throughout the industry in recent years.

Australian milk production rose steadily until 1999–2000. Less favourable seasonal conditions and farm exits associated with deregulation of the milk industry saw production decrease by 3% to 10.5 billion litres in 2000–01, before recovering to 11.3 billion litres in 2001–02 (table 14.36).

## Domestic dairy market

Average annual per capita milk consumption by Australians has stabilised at around 100 litres since the mid-1980s. According to Australian Dairy Corporation data, for the year ending December

2002, Australians consumed 97 litres of milk, 11.6 kilograms (kg) of cheese and 5.5 kg of yoghurt per person.

## Dairy exports

In 2001–02, Australia exported 856,000 tonnes (net) of dairy products. This produce was valued at \$3.2b (f.o.b.) which was 2.6% of total merchandise exports. 'Milk and cream and milk products (excluding butter and cheese)' contributed \$1.82b while 'Cheese and curd' and 'Butter and other fats and oils derived from milk' brought in \$1.03b and \$0.3b respectively.

## Sheep

Sheep numbers reached a peak of 180 million in Australia in 1970. In general, numbers have fallen since then. Poor market prospects for wool after 1990 had a marked impact on the flock size with sheep numbers falling rapidly until 1995, after which there was a gradual decline until 1999 (tables 14.37 and 14.38). At 30 June 2002, Australia had approximately 106 million sheep and lambs.

Map 14.39 shows the distribution of sheep and lambs in Australia at 30 June 2001.

**14.36 WHOLE MILK INTAKE BY FACTORIES, Production, use and gross value**

	Market milk sales by factories	Milk used in the manufacture of dairy products	Total intake	Gross value
	mill. litres	mill. litres	mill. litres	\$m
1996–97	1 853	7 187	9 040	2 809
1997–98	1 848	7 591	9 439	2 817
1998–99	1 859	8 319	10 178	2 900
1999–2000	1 842	9 005	10 847	2 845
2000–01	1 920	8 625	10 545	3 053
2001–02	1 886	9 385	11 271	3 717

Source: *Agricultural Commodities, Australia (7121.0)*; *Agriculture, Australia (7113.0)*; *Australian Dairy Corporation*.

**14.37 SHEEP AND LAMBS, By state**

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
	mill.	mill.	mill.	mill.	mill.	mill.	mill.
1997	42.4	22.3	10.5	13.1	27.8	4.0	<b>120.2</b>
1998	40.8	21.1	11.0	13.1	27.5	3.9	<b>117.5</b>
1999	40.6	21.0	10.6	13.1	26.4	3.8	<b>115.5</b>
2000	43.4	22.7	9.2	13.8	26.1	3.3	<b>118.6</b>
2001	40.9	22.3	8.7	12.6	23.1	3.2	<b>110.9</b>
2002	38.5	21.4	6.8	13.0	23.1	3.4	<b>106.2</b>

(a) Includes NT and ACT.

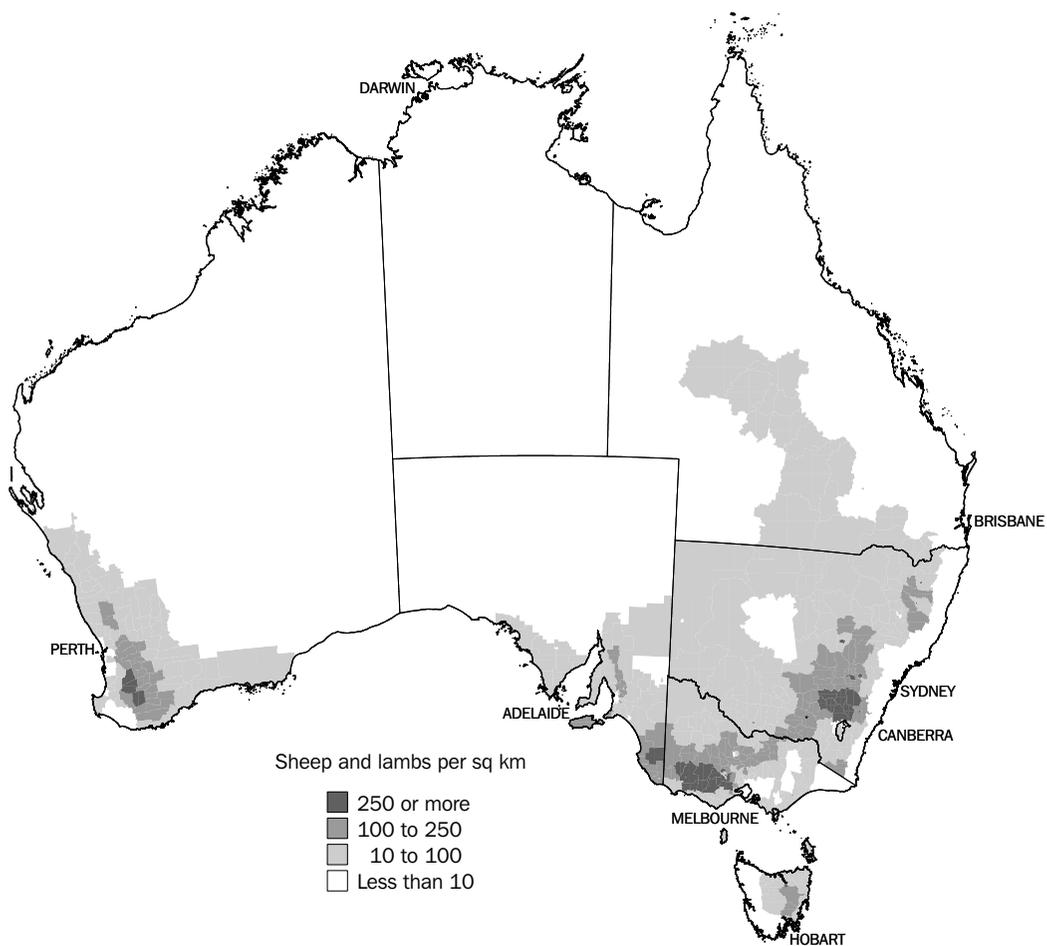
Source: *Agricultural Commodities, Australia (7121.0)*.

### 14.38 SHEEP AND LAMBS

	1997	1998	1999	2000	2001	2002
	mill.	mill.	mill.	mill.	mill.	mill.
Sheep	89.8	87.5	86.0	87.9	83.0	77.8
Lambs (under 1 year old)	30.5	30.0	29.5	30.7	28.0	28.4
<b>Total</b>	<b>120.2</b>	<b>117.5</b>	<b>115.5</b>	<b>118.6</b>	<b>110.9</b>	<b>106.2</b>

Source: *Agricultural Commodities, Australia (7121.0)*.

### 14.39 SHEEP AND LAMBS, Distribution — 30 June 2001(a)



(a) This map has been generated using Agricultural Census data at the Statistical Local Area level for 2000–01.  
 Source: *AgStats on GSP (7117.0.30.001) CD-ROM product 1996–97 to 2000–01*.

## Pigs

Pig farming is a highly intensive industry. The majority of pigs are grown in specially designed sheds which provide a controlled environment conducive to the efficient production of large numbers of animals. The number of pigs increased by 7% to 2.9 million in 2002, while the number of establishments classified to pig farming fell 7% to 3,200. Recent changes in the Australian pig industry have seen many smaller producers leave the industry and existing producers increase their size of operations in an attempt to remain viable.

As table 14.40 shows, New South Wales is the largest producer of pigs, followed by Victoria and Queensland.

## Poultry

Poultry farming is also a highly intensive industry, with the majority of poultry raised in large sheds which 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 being major users of feed grains. Although the industry has grown over recent years, there was a decline in 2002 with poultry numbers falling by 7% to 86.3 million birds (table 14.41).

## Meat production and slaughtering

Tables 14.42 and 14.43 show details of slaughtering and meat production from abattoirs, and from commercial poultry and other slaughtering establishments. They include estimates of animals slaughtered on farms and by country butchers. The data relate only to slaughtering for human consumption and do not include animals condemned or those killed for boiling down.

Production of beef for 2002–03 increased 2% to just over 2.0 million tonnes. Production of beef has reached record levels in recent years, with a comparatively weak Australian dollar and lower world supply leading to strong export demand and higher market prices. However, a weakening in the United States of America demand and a stronger Australian dollar in 2003 may alter this trend.

Changing patterns in consumer demand and in sheep and lamb supply have seen production of lamb meat exceed production of mutton for the last four years. In 2002–03, lamb production decreased by 5% to 329,000 tonnes, and mutton production decreased by 9% to 268,000 tonnes.

### 14.40 PIGS

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
	'000	'000	'000	'000	'000	'000	'000
1997	729	485	600	417	297	24	2 555
1998	849	518	648	424	303	24	2 768
1999	778	521	621	406	277	22	2 626
2000	710	523	544	438	276	18	2 511
2001	845	557	597	438	286	22	2 748
2002	833	673	643	410	361	18	2 940

Source: *Agricultural Commodities, Australia (7121.0)*.

### 14.41 POULTRY

	Chickens(a)			Other poultry			Total all poultry '000
	Chickens for egg production	Meat chickens (broilers)	Total chickens	Ducks	Turkeys	Other poultry	
	'000	'000	'000	'000	'000	'000	
1997	14 059	67 373	81 432	390	1 211	909	83 942
1998	14 036	75 504	89 540	456	1 268	673	91 937
1999	13 912	77 863	91 775	370	1 331	448	93 924
2000	12 016	72 912	84 928	517	1 360	224	87 029
2001	14 276	76 697	90 973	770	717	437	92 897
2002	12 858	72 144	85 002	567	584	*160	86 313

(a) Includes breeding stock.

Source: *Livestock Products, Australia (7215.0)*; ABS data available on request, *Poultry and Game Birds Slaughtered Collection*.

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 producing a significant proportion of all pig meat sold in Australia. These moves, on top of 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. In 2002–03 pig meat production increased 6% to 420,000 tonnes, more than double its low point in 1976.

Table 14.44 shows the gross value of livestock slaughterings over recent years. The value of slaughterings and other disposals has increased in each of the last five years, with 20% increases in both 2000–01 and 2001–02.

#### 14.42 PRODUCTION OF MEAT

	Carcass weight					Dressed weight		
	Beef '000 tonnes	Veal '000 tonnes	Mutton '000 tonnes	Lamb '000 tonnes	Pig meat '000 tonnes	Total red meat '000 tonnes	Chicken meat '000 tonnes	Total poultry(a) '000 tonnes
1997–98	1 911	44	333	284	358	2 930	544	587
1998–99	1 973	38	316	312	370	3 009	564	607
1999–2000	1 952	36	333	347	363	3 031	598	638
2000–01	2 086	33	348	367	365	3 200	619	657
2001–02	1 996	31	296	348	396	3 067	667	705
2002–03	2 035	38	268	329	420	3 090	690	726

(a) Includes other fowls, turkeys, ducks and drakes.

Source: *Livestock Products, Australia (7215.0)*; ABS data available on request, *Poultry and Game Birds Slaughtered Collection*.

#### 14.43 LIVESTOCK AND POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION

	Cattle mill. head	Calves mill. head	Sheep mill. head	Lambs mill. head	Pigs mill. head	Chickens mill. head	Other fowls(a) mill. head	Ducks and drakes mill. head
1997–98	8.1	1.3	16.3	15.0	5.1	364.2	10.7	2.9
1998–99	7.9	1.2	15.1	16.1	5.2	375.0	10.2	3.5
1999–2000	7.5	1.1	15.9	17.6	5.0	394.0	9.5	4.1
2000–01	7.9	1.0	16.6	18.6	5.0	398.9	8.4	4.0
2001–02	7.6	1.0	14.4	17.4	5.4	415.6	8.6	4.0
2002–03	8.1	1.1	13.7	16.9	5.7	419.2	9.2	4.1

(a) Comprises hens, roosters, turkeys etc.

Source: *Livestock Products, Australia (7215.0)*; ABS data available on request, *Poultry and Game Birds Slaughtered Collection*.

#### 14.44 GROSS VALUE OF LIVESTOCK SLAUGHTERINGS AND OTHER DISPOSALS

	Cattle and calves \$m	Sheep and lambs \$m	Pigs \$m	Poultry \$m	Total(a) \$m
1996–97	3 597.0	1 042.6	764.8	932.0	<b>6 376.3</b>
1997–98	4 138.2	1 066.2	709.8	1 053.6	<b>6 991.9</b>
1998–99	4 476.6	1 053.5	689.7	1 018.5	<b>7 255.8</b>
1999–2000	5 048.7	1 053.5	791.7	1 030.8	<b>7 944.2</b>
2000–01	6 430.6	1 401.8	822.3	1 060.2	<b>9 737.8</b>
2001–02	7 142.4	2 117.6	967.7	1 174.9	<b>11 434.5</b>

(a) Includes value of other livestock.

Source: *Agriculture, Australia (7113.0)*; *Value of Principal Agricultural Commodities Produced, Australia, Preliminary (7501.0)*.

The largest customers for Australian beef in recent years have been the United States of America, Japan and the Republic of (South) Korea. In 2002–03 the United States of America was the main customer for Australian beef with 355,000 tonnes purchased, 13% less than the previous year's shipment. Japan was Australia's second largest customer with 278,000 tonnes purchased, also up 13% on the previous year. The Republic of (South) Korea was the third largest importer of Australian beef, purchasing 87,000 tonnes.

Table 14.45 shows the volume of exports of fresh, chilled or frozen meat. Beef was again Australia's major meat export in 2002–03 with shipments of the major component, bone-out beef, remaining

steady at 893,300 tonnes after a 5% decline the previous year. Exports of bone-in mutton in 2002–03 decreased for the second year in row, down 4% to 109,100 tonnes.

Table 14.46 shows the number, gross weight, gross value and unit value of live sheep and cattle exports. The number of live sheep exported in 2002–03 decreased by 9% to 5.8 million head. However, a 15% increase in unit value lifted the value of live sheep exports by 4% to \$407.1m. The number of live cattle exported in 2002–03 increased 22% to 975,000 and despite an 11% fall in the average unit value, the value of exports of live cattle increased 8% to \$569m.

#### 14.45 EXPORTS OF FRESH, CHILLED OR FROZEN MEAT

	Beef(a)		Veal		Mutton		Lamb		Pork Meat '000 tonnes
	Bone-in '000 tonnes	Bone-out '000 tonnes	Bone-in '000 tonnes	Bone-out '000 tonnes	Bone-in '000 tonnes	Bone-out '000 tonnes	Bone-in '000 tonnes	Bone-out '000 tonnes	
1997–98	46.9	795.9	1.8	5.5	107.8	59.1	62.2	8.8	12.3
1998–99	61.0	836.6	1.6	6.1	114.7	51.4	71.6	9.3	16.5
1999–2000	45.5	818.7	1.6	7.4	120.9	55.5	86.6	11.1	39.2
2000–01	42.0	940.3	2.1	6.4	127.8	63.8	103.7	12.3	43.9
2001–02	34.1	892.3	2.4	7.1	113.9	52.1	104.6	13.8	59.0
2002–03	37.4	893.3	3.6	6.5	109.1	52.2	87.7	14.3	62.8

(a) Includes buffalo meat.

Source: *Livestock Products, Australia (7215.0)*.

#### 14.46 LIVE SHEEP AND CATTLE EXPORTS

	Live sheep exports				Live cattle exports			
	Number '000	Gross weight '000 tonnes	Gross value \$'000	Unit value \$	Number '000	Gross weight '000 tonnes	Gross value \$'000	Unit value \$
1997–98	4 961.1	256.0	193 266	38.96	694.0	255.4	334 058	481.34
1998–99	4 958.7	254.9	181 671	36.64	713.0	264.7	342 667	480.57
1999–2000	4 858.6	243.3	180 345	37.12	845.7	317.1	432 645	511.60
2000–01	5 936.0	283.6	257 661	43.41	845.8	314.3	481 827	569.66
2001–02	6 443.2	318.0	391 705	60.79	797.0	293.5	525 535	659.41
2002–03	5 839.4	272.7	407 068	69.71	975.0	362.0	569 013	583.62

Source: *Livestock Products, Australia (7215.0)*.

## The wool industry

### The wool industry

Australia is the world's largest wool producing country, accounting for about 30% of world production. Wool production has been declining in Australia and the world for the last 10 years, and is expected to continue to do so in the medium term. Since 1990, Australian wool production has fallen by about 45%, to around 590,000 tonnes in 2001–02. Almost all of Australia's wool is exported, the major markets being China and Hong Kong, followed by Italy, some other western European countries and Japan.

### Wool production

Shorn wool (greasy wool) contains an appreciable amount 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. It is, however, 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 2001–02 increased to \$2.7b (table 14.47), but was still less than half the value recorded in 1988–89 (\$5.9b), the peak year in the wool boom of the 1980s.

### Wool receivals

The total amounts of taxable wool received by brokers and purchased by dealers in recent years are shown in table 14.48. They exclude wool received by brokers on which tax had already been paid by other dealers (private buyers) or brokers.

**14.47 SHEARING, WOOL PRODUCTION AND VALUE**

	Sheep and lambs	Average fleece weight	Wool production			
			Shorn wool		Total wool	
			Other wool(a)	Quantity	Gross value	
mill.	kg	'000 tonnes	'000 tonnes	'000 tonnes	\$m	
1995–96	146.7	4.40	646.1	43.6	689.7	2 559.7
1996–97	156.4	4.37	685.0	46.1	731.1	2 621.2
1997–98	155.5	4.12	640.7	48.9	689.6	2 753.9
1998–99	147.9	4.32	638.8	48.8	687.6	2 141.0
1999–2000	142.7	4.50	642.3	52.5	694.8	2 149.2
2000–01	136.8	4.30	589.8	54.9	644.7	2 541.2
2001–02	122.0	4.40	536.5	50.4	586.9	2 713.2

(a) Comprises dead and fellmongered wool, and wool exported on skins.

Source: *Agriculture, Australia (7113.0)*; *Livestock Products, Australia (7215.0)*; *Australian Bureau of Agricultural and Resource Economics, 'Australian Commodities Forecasts and Issues, March Quarter 2000'*.

**14.48 TAXABLE WOOL RECEIVALS**

	Receivals			Brokers as proportion of total receivals
	Brokers	Dealers	Brokers and dealers	
	'000 tonnes	'000 tonnes	'000 tonnes	
1995–96	552.9	93.1	646.1	85.6
1996–97	565.2	119.9	685.0	82.5
1997–98	524.0	116.7	640.7	81.8
1998–99	526.9	111.8	638.8	82.5
1999–2000	517.5	124.8	642.3	80.6
2000–01	487.2	102.6	589.8	82.6
2001–02	436.8	99.7	536.5	81.4

Source: *Livestock Products, Australia (7215.0)*.

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*Australian Commodities Forecasts and Issues*, various years

*Australian Commodity Statistics*

*Australian Farm Survey Reports*

Australian Dairy Corporation, *Dairy Compendium*

### **Web sites**

ABARE, <<http://www.abareconomics.com>>

Australian Dairy Corporation, <<http://www.dairycorp.com.au>>

Bureau of Rural Sciences, <<http://www.affa.gov.au/ruralscience/html>>

Australian Government Department of Agriculture, Fisheries and Forestry <<http://www.affa.gov.au>>

# The Australian dairy industry

The Australian dairy industry is one of Australia's major intensive agricultural industries, with the gross value of milk production in 2001–02 of \$3.7b accounting for around 9% of total gross value of agricultural production. In addition, dairy farmers sell off large numbers of new born (vealer) calves for meat production each year. In 2001–02 these numbered 705,902 and were valued at around \$51.2m.

Victoria is the dominant dairy state with 61% of the Australian dairy herd, most of it occurring in eastern Victoria. New South Wales and Queensland together account for a further 22%, followed by Tasmania with about 7% of the herd (map S14.1). Dairying requires relatively high rainfall (or access to irrigation), and fertile soils which are capable of carrying high numbers of cattle. In addition to good quality pastures and crops, cattle are fed supplementary food, including grain, to maintain protein levels in milk.

**S14.1 DAIRY CATTLE DISTRIBUTION — 30 June 2001**



Source: Australian Dairy Corporation.

At 30 June 2002 the Australian dairy cattle herd numbered 3.1 million head, with 2.1 million being cows in milk or dry. In 2001–02 these cows produced 11.3 billion litres of whole milk, exceeding the previous record high of 10.8 billion litres in 1999–2000. Consumers drank approximately 18% of total whole milk production as fresh milk. The remainder was sold for the manufacture of butter, cheese, milk powders, and other dairy products. In 2000–01 over 50% of the annual milk production was exported, mainly in the form of milk powder and cheese.

Data from the Australian Bureau of Statistics Labour Force Survey shows in May 2002 there were approximately 25,900 persons employed in the dairy industry. In addition, another 19,000 persons were employed in the dairy product manufacturing industry.

### History of milk production in Australia

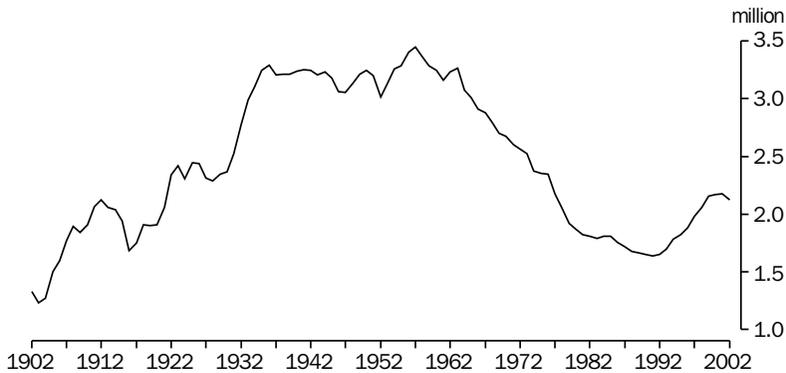
Since European settlement in 1788, the production of milk has been one of Australia’s most important farming practices. When the First Fleet established itself at Farm Cove, Port Jackson, it brought one bull, four cows and one calf (*ABS Year Book No. 1*). These animals were to supply milk to the new colony and to serve as foundation stock for future herds.

There were many setbacks in the first year (poor soils and pastures being a major concern) and within the first four months of

settlement the original herd had wandered off in search of better food. Seven years later the herd was found near the Nepean River, numbering 40 cows and 2 bulls. During those early years, famine, drought and a lack of farming experience meant that many of the initial shipments of cattle were slaughtered for meat. After these initial difficulties, the cattle herd increased from 200 cows in 1796, to 1,044 cattle in 1800 and rapidly to 34,500 head by 1825.

As more lands were explored and opened up, the expansion continued southward into Tasmania and Victoria. In 1834, Edward Henty settled the area of Portland in south-western Victoria to become one of Victoria’s first farmers. He produced small amounts of butter and cheese and eventually exported a cask of cheese to Tasmania; it was Victoria’s first export. By 1836 the district of Port Phillip in Victoria had 155 head of cattle with a substantial number of those being used to produce milk, butter and cheese. From 155 head of cattle in 1836, the number of milk and beef cattle in Victoria quickly rose to 116,000 by 1861. South Australia’s and Tasmania’s dairying development roughly paralleled Victoria’s during the latter half of the 19th century. The industry in Queensland prior to 1900 was confined mainly to the Darling Downs and Moreton districts, while in Western Australia it was the development of the soldier settlement programs after World War I that helped kickstart the dairy industry in that state.

**S14.2 DAIRY CATTLE IN MILK OR DRY**



Source: *Agricultural Commodities, Australia (7121.0)*.

Up until the 1880s, dairying had remained a local industry, with dairy products such as cream, milk, butter and cheese being produced on the farm. Dairying, on a commercial basis, only flourished in regions close to markets where products could arrive before spoiling. The lack of refrigeration meant that dairy products could not be transported and distributed over great distances and as a result, much of the butter exported to Britain prior to 1881, ended up being used as axle grease on its arrival.

It was the introduction of a number of technological developments during the 1880s and 1890s that enabled the industry to expand rapidly and establish itself on a commercial basis (graph S14.2).

The first and most important development was the introduction of refrigeration. This resulted in the first successful shipment of butter which arrived in England in January 1881 on the ship *S.S. Protos*. The second was the replacement of native pastures with more productive exotic species of paspalum, English ryegrass, and clover. This allowed farmers to dramatically increase stocking rates and milk production from the available land used for dairying purposes. The third development was the advent of the hand operated cream separator in 1881, which enabled small farmers to produce cream efficiently on the farm. This opened the way for the establishment of factories to which the cream was transported for making into butter and cheese.

As these technologies were adopted and improved upon, farmers began to increase productivity and their profit margin. Three acres of improved pasture were capable of supporting a cow which produced 125 lbs (55 kg) of butterfat per annum. Depending on the size of the farm and the availability of labour, a dairy farmer in New South Wales milking 30 cows in the late-1800s could expect a net farm income of £136 per annum (Davidson 1992), compared to the average wage of £39 for farm labourers and £47 for milkers in the mid-1890s.

By the 1890s, 40% of the butter manufactured in New South Wales was being produced in factories, with the remainder still being produced on farms. Ten years later, at the turn of the century, nearly all dairy products were made in factories, and a high proportion of these new factories were built, owned and

operated by farmer co-operatives producing butter, cheese and bacon. Pasteurisation of milk also contributed to greater hygiene in the distribution of milk, allowing expansion of the domestic milk market.

The co-operatives usually transported the cream from farm to factories in their own vehicles. The co-operatives would manufacture the produce, hold it in cold storage, sell, and then transport it to wholesalers and retailers. In some instances the co-operatives also ran their own retail operations, selling and delivering bread and groceries to farmers. In many cases, co-operatives also organised the sale and shipment of surplus produce to Britain.

In the early days it was neighbouring farmers that supplied milk to the towns and cities of Australia. As these increased in size, dairies within the metropolitan areas milking stall-fed cows met the demand. With the construction of the railway system, it also became possible to quickly transport fresh milk to the cities from the country. Sydney, after World War I, was a good example of how milk supply to the larger populated centres operated:

... by 1921, 60% of the 49,000 gallons of milk consumed each day by the one million people of Sydney was railed from the Illawarra region and the Hunter Valley. The remainder was produced by 7,680 cows milked in 414 dairies within the metropolitan area itself (Davidson 1992).

Typically, the large co-operatives would collect the milk from farmers at railway stations, weigh it, sample it, flash pasteurise it, cool it down and then rail it in 700 gallon (3,200 litre) tin-lined copper containers to a central depot. On arrival at the central depot it would be cooled again and then distributed to one of their milk depots in the suburbs. The co-operatives retail centres would then collect the milk in 40 gallon tanks from the depot and deliver the milk in smaller containers to the customer's door (Davidson 1992).

Another factor that encouraged rapid growth in the dairy industry was the introduction of the milking machine. Although the first milking machines were patented in 1836, milking machines were not introduced into Australia until around 1900. Surprisingly, given the major reason farmers could not increase their herd sizes was the time needed to milk twice daily by hand, milking machines even then did not win immediate acceptance. It was not until the

late-1930s, by which time electricity was more readily available to farms, that milking by machine was adopted as the norm.

In 1924 another milestone was reached with the introduction of the *Dairy Produce Export Control Act 1924–1938* (Cwlth), which aimed to organise the overseas marketing of Australian dairy produce. Soon afterwards a Dairy Produce Control Board was appointed which had responsibility for the organisation and supervision of the overseas marketing of dairy produce. This board, in conjunction with the Australian Dairy Council, which advised the government on problems connected with the production of dairy goods, helped facilitate the production and marketing of Australian dairy produce in the years leading up to World War II.

In 1935 these two bodies were combined to form the Australian Dairy Produce Board (later to become the Australian Dairy Corporation), which was responsible for the control of all butter and cheese exports to the United Kingdom (UK). Not long after its establishment, and with the onset of the World War II, the Australian and British governments entered into a number of contracts whereby the latter agreed to purchase Australia's surplus quantities of butter and cheese at prices fixed according to grade. The marketing agreements struck in the late-1930s between Britain and Australia for Australia's dairy produce, and the war time contracts that were entered into were a great boost to Australia's dairy farmers and helped stabilise the industry from the uncertain times experienced during the depression years.

Prior to the 1970s, the dairy industry was made up of large numbers of small family owned farms milking under 70 cows. A significant proportion of these were mixed farms producing cream for the manufacture of butter and cheese, with the skim milk typically being fed to pigs. This type of enterprise depended both on the export of butter and cheese to the UK, and a heavily protected domestic market. Once the UK joined the European Economic Community (EEC) in 1973–74, many of these small family farms were no longer viable, and many dairy farms turned to beef production or other agricultural activities, to survive. For the five years preceding 1973–74, UK imports of butter and butter fat products from Australia averaged 44,000 tonnes per year, but when the UK joined the EEC, these imports virtually ceased.

The loss of this large export market was not altogether a disaster. At the same time as this shift in economic ties between the UK and Australia, Australian dairy producers were actively seeking and exploiting new markets such as Hong Kong, Japan and Saudi Arabia which would prove a boon for Australian dairy farmers for the next 30 years.

Today the dairy industry is a large scale, intensive operation using the latest technology to produce whole milk. Cattle are milked in large dairies which can milk up to 800 cattle per hour, with some operating 24 hours a day with three equally spaced milkings every 24 hours.

### **From industry regulation to deregulation**

A look at the dairy industry of Australia prior to 1 July 2000 reveals an industry governed by two separate sectors, the regulated market/fresh milk sector and the non-regulated manufactured milk sector; six separate dairy industries, one in each state; and high levels of Australian Government assistance and complex state government regulatory intervention. Regulation came in two forms; state government support of the market/fresh milk sector and Australian Government support of the manufactured milk sector.

In the 1980s and 1990s state governments had the responsibility of controlling price and food quality, and for formulating policy for the market/fresh milk sector. State marketing authorities such as the Victorian Dairy Industry Authority, and the New South Wales Dairy Corporation were set up to administer the regulation of the sector and exercised a high degree of control on the marketing of milk in their states, including the licensing of dairy farmers to control production and regulate milk quality.

Up until deregulation, dairy farmers selling their milk as market milk received a substantially higher farm gate price than the average price paid for manufactured milk, even though there was little distinction between the two products. Across Australia under this regulated market, a number of different schemes existed which allocated the large guaranteed price premium proportionally to all dairy farmers, encouraging farmers to produce more milk than would be produced under free-market conditions. State governments also

engaged in establishing legislation that regulated interstate access to their market milk sectors. The manufactured milk sector on the other hand was characterised by open access, with products from this sector being traded freely within and between states.

Although the manufactured milk sector was characterised by open access, it was not totally devoid of policies that distorted the market for dairy products. Up until July 2000, measures to support domestic prices, restrict imports, subsidise exports and restrict the production of substitutes were used. A long-term feature of this sector was 'domestic market support', introduced as part of the Kerin Plan, a marketing plan introduced in July 1986 by the Minister for Primary Industries and Energy:

...in an effort to make the industry more market responsive and ensure that all sectors of the industry supported export returns (Reid 1990).

A levy was paid by all farmers on all milk produced and this money was later distributed to processors as an export subsidy. The levy worked by making it profitable for milk processors specialising in exporting dairy products, to divert milk from the domestic market. The Kerin Plan also included legislation allowing states to terminate the 'all milk levy' if they believed the market/whole milk premium was being threatened by milk inflows from interstate.

By the early- to mid-1990s it was clear a fall in the price of market milk, relative to manufactured milk, was required and price controls and supply quotas needed to be removed or substantially reduced. The Australian Government began phasing out market support in the dairy industry, in line with its commitments to wind down protection in the manufacturing industries and other areas of agriculture. Export subsidies were terminated in July 1995. However, the 'all milk levy' imposed to support the price received by producers of manufactured milk was still maintained in essentially the same way up until mid-2000. While a number of state dairy authorities were reluctant to accept deregulation, changes were occurring within the industry. Due to uncertainties regarding the future of regulation, the value of milk quotas, which controlled production in the major market milk producing states of New South Wales, Queensland and Western Australia, began to fall.

The deregulation of fresh milk pricing from 1 July 2000 had a major effect on farm gate prices for fresh milk. In 2000, around 18% of Australia's total milk production was consumed as fresh milk. Victoria's proportion of fresh milk to total milk production was only 6% compared with much higher proportions (about 45%) in New South Wales, Queensland and Western Australia. Under regulation, all dairy farmers received a separate price for fresh and manufactured milk. After deregulation, most Victorian manufacturers offered dairy farmers a single, blended price for all milk, which reflected the emphasis of milk being used for manufacturing dairy products and the prices received from the exports of these dairy products in the rest of the world (Edwards 2001).

After much political lobbying by the dairy industry, the Australian Government promised substantial adjustment payments to dairy farmers on the condition that state governments agreed to deregulate their industries. Established under the *Dairy Industry Adjustment Act 2000* (Cwlth) in April 2000, the Dairy Adjustment Authority (DAA) administered applications for assistance from dairy farmers under the Dairy Structural Adjustment Program (DSAP) Scheme. In July 2001, the *Dairy Produce Legislation Amendment (Supplementary Assistance) Act 2001* (Cwlth), provided the legislative framework for the DAA to administer additional assistance measures to dairy producers under the Supplementary Dairy Assistance Scheme. To date, the DAA has, under the DSAP, committed \$1.6b and another \$111m under the Supplementary Dairy Assistance Scheme to be distributed over the eight years from 2000 to 2008. The dairy industry today is fully deregulated, and every dairy farmer's farm gate price for milk is now, due to natural forces of supply and demand, affected by world prices no matter where they live within Australia.

## Industry structure

There has been a marked decline in the number of dairy establishments in Australia since the 1970s, stabilising at around 13,000 to 14,000 during the 1990s. Following deregulation of the industry in 2000, the number of dairy establishments dropped to just under 13,000 at 30 June 2001, to account for 9% of the total number of agricultural establishments. This decline in the past three decades has been a result of reductions

in government support to the industry (including full domestic deregulation in 2000) and the consequent exposure to market forces, which have made the industry become more competitive through larger-scale operations.

In 2000–01, the majority of dairy farms had an estimated value of agricultural operations (EVAO) between \$100,000–\$499,999, accounting for 73% of all dairy establishments and 68% of the dairy herd. Dairy cattle farms with an EVAO of less than \$100,000 accounted for 18% of all dairy establishments but only 4% of the national dairy herd. At the other end of the scale, dairy cattle farms with an EVAO of \$500,000 or more, accounted for just on 9% of all dairy establishments and 28% of the dairy herd.

Over the last three decades the size of the average dairy cattle herd has increased, with an average annual growth rate of just under 4%. In 1970–71 the average herd size numbered 71 head of dairy cattle with 11% of establishments stocking 150 or more dairy cattle. In 2001–02, the average herd size numbered 263 head of dairy cattle with about half the number of establishments stocking more than 200 dairy cattle (graph S14.3). Today, the industry produces 83% more milk than 15 years ago, with 37% fewer dairy establishments and with a 92% larger herd on average.

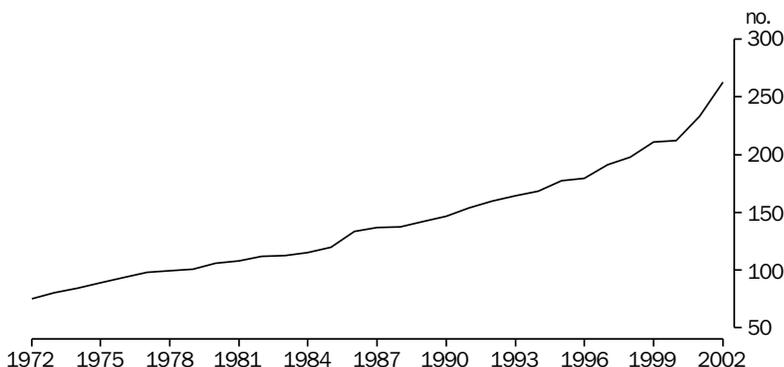
## Dairy breeds

Since the beginning of the Australian dairy industry, Australian dairy breeds have been undergoing constant improvement and refinement, using the very best of Australian and overseas genetics.

The dairy industry, like many Australian industries, was originally modelled along British lines. The first dairy cattle introduced into Australia in significant numbers were mainly British breeds such as Jersey, Guernsey, Dairy Shorthorn, Longhorn and Ayresshire. These cattle, along with Holstein Friesian cattle from Holland and Germany, were all good milk producers and were characteristic of Australia's dairying in the 19th century through to the mid-1990s.

During the first 150 years of dairying in Australia, the Jersey proved most popular, particularly in Victoria. However during the latter half of the 20th century, British breeds with their higher than average fat and protein production levels were beginning to be replaced with new Australian breeds and Holstein Friesians, as the emphasis moved away from butter production and more towards increasing milk production levels per cow. Today, the Holstein Friesian comprises roughly two-thirds of the total milking dairy cattle population of 2.2 million head and is widely spread across all dairying areas of Australia (*The Weekly Times*, January 9, 2002).

**S14.3 AVERAGE DAIRY HERD SIZE**



Source: ABS data available on request, Agriculture Census Survey.

## The dairy product manufacturing industry

As with the dairy farming industry, the dairy product manufacturing industry has undergone significant rationalisation, through mergers, acquisitions and strategic alliances between dairy processing businesses. In 1999–2000, just 206 processing establishments (35% less than in 1975) were operated by about 120 dairy processing companies. This industry, which is mostly made up of milk and cream processors, and butter, cheese and milk powder manufacturers, employed just on 19,400 persons at 30 June 2001 (10.2% of the total food, beverage and tobacco manufacturing workforce) and paid out \$832m in wages and salaries.

In line with Victoria's status as the largest milk producing state, dairy product manufacturing establishments in Victoria produced 64% of the total manufactured milk production, followed by New South Wales and Queensland, contributing 13% and 7% respectively.

### Dairy consumption

Dairy products have always been a staple food source in the Western diet and, as refrigeration became common place in households, people

in the developed world moved away from keeping a 'house cow' in the back yard for their dairy needs. Instead, they began to rely more heavily on the commercial production of milk, cheese, yoghurt and other dairy products.

Traditionally, most milk and dairy produce has been consumed in Western countries and, in particular, in the regions of the European Union (EU) and North America where consumers relied heavily on dairy products as a source of calcium and protein. Over the last decade, dairy product per capita intake in these countries has been estimated at over 200 kilogram per year, but recent international research has shown that the intake of liquid milk has been decreasing. This has occurred for two reasons; as a response to medical concerns relating to the adverse effects of excess fat in diets, and as a result of the increased availability of substitute non-dairy based products like soya bean-based drinks. This decline in the consumption of liquid milk has, to some extent, also been offset by an increase in the consumption of other dairy products like cheese and yoghurt, particularly following the growth of the yoghurt dessert and drink market.

**S14.4 PER CAPITA CONSUMPTION OF LIQUID WHOLE MILK**



Source: Australian Dairy Corporation.

Countering this levelling-off of demand in the west has been the gradual increase in demand for dairy products in the developing world, particularly in Asia. A rise in incomes, changing food consumption habits and an increase in urbanisation has led to a strong boost in demand for milk and dairy products in countries including Japan, Republic of (South) Korea, Thailand, China and India. In Japan, in particular, there has been a 15-fold increase in annual per capita milk consumption, from five litres in 1960 to 75 litres in 2000.

Despite cheese consumption almost doubling in Australia over the last 20 years, Australia's overall consumption of dairy produce has remained relatively steady. Milk consumption has hovered in the range of 100–104 litres per capita (graph S14.4) and butter is regaining some of the market share lost to margarine, through the introduction of dairy/margarine blends (graph S14.5).

### International trade in dairy products

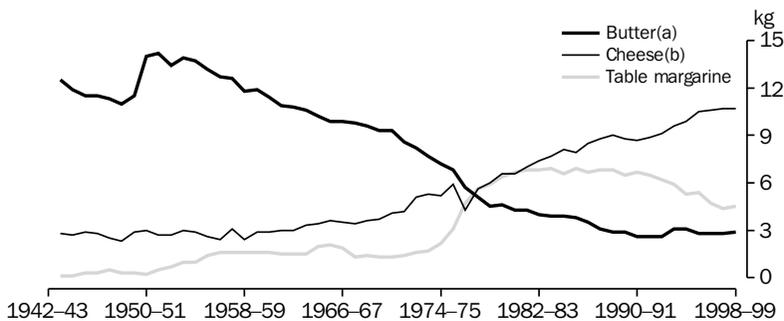
Australia and New Zealand dominate the world market in milk and although their production represents only 4% of world milk production, these two countries together export nearly half of all internationally traded dairy products.

The Australian dairy industry is now firmly established as the world's third largest dairy trader (behind New Zealand and the EU), with

more than 50% of its milk production in 2002 being exported. During the 12-month period to June 2002, the Australian industry exported 968,000 tonnes of dairy products, worth \$3.2b. This compares to \$2.3b for the same period two years earlier. According to market economists, the main reasons behind the surge in dairy exports were favourable exchange rates and firm global prices for dairy products.

The pattern of Australia's dairy exports is vastly different today compared to the early-1900s, when the majority of Australia's exports went to the UK (and former British colonies). Since the early-1980s and throughout the 1990s, an increasing proportion of Australian dairy produce has been exported to markets in Asia. In volume terms, by far the majority (70%) of Australia's dairy exports are now going to Asian nations, such as Japan (17%), the Philippines (13%), Singapore (8%), Indonesia (8%), Malaysia (7%) and Taiwan (5%). In 2001–02, of the \$1.9b worth of 'milk and cream' and 'milk products (other than butter and cheese)' and \$1.0b worth of 'cheese and curd' that was exported, more than half was sent to Asia. Today, Japan is the largest single market for Australian dairy produce, importing approximately \$560m of Australian dairy products in 2001–02, with 'cheese and curd' comprising the majority of this trade. The Philippines was the second largest market for Australian dairy exports (worth \$338m or 10% of Australia's dairy exports), followed by Saudi Arabia (\$220m).

**S14.5 PER CAPITA CONSUMPTION OF SELECTED PRODUCTS**



(a) Australian Dairy Corporation figures from 1975–76 onwards; prior to this ABS figures were used. (b) Natural equivalent weight from 1971–72; prior to this combined product.

Source: Australian Dairy Corporation.

The concentration of trade to Asia reflects both Australia's geographic proximity to these markets and the restrictions placed on Australia's dairy produce in other markets like the EU and the United States of America (US) by the use of protectionist policies and export subsidies.

Over the last 100 years there has also been a significant change in the types of Australian dairy products exported. During the first half of the 20th century, butter accounted for the vast majority of dairy exports. By 2001–02, exports of 'butter and other fats' made up only 11% of dairy exports, while 'condensed and concentrated milk and cream' and 'cheese and curd' made up 47% and 23%, respectively.

At the beginning of the 1990s, Australia exported 27.5 million litres of 'milk and cream' worth just on \$18m, but by 1994 the volume had more than doubled to 65 million litres and was worth \$51.8m. By 2001–02 the quantity of 'milk and cream' exported had grown to 87 million litres, worth \$98m. The quantity and value of most other dairy product exports from Australia also increased significantly over the period 1989–90 to 1994–95. The quantity of whey increased from 14,400 tonnes to 35,200 tonnes, valued at \$10m and \$36m respectively; skimmed milk powder exports

doubled from 83,700 tonnes (\$196m) in 1989–90, to 166,000 tonnes (\$374m in 1994–95; and 'cheese and curd' exports more than doubled from 53,3000 tonnes to 116,4000 tonnes and from \$184m to \$402m. Over the rest of the decade and into the 2000s, dairy exports continued to show steady growth, except for a brief and small decline in 2000–01, for nearly all products except skimmed milk powder and yoghurt. By 2001–02, the quantity and value of whey exports had increased to 45,800 tonnes and \$85m, skimmed milk powder exports had increased to 199,000 tonnes and \$674m and 'cheese and curd' exports had increased to 218,000 tonnes and \$1.0b.

In 2001–02, Australia imported 67,900 tonnes of dairy produce, valued at \$297m. The main country of origin for Australia's dairy imports was New Zealand, which accounted for 81% of Australia's dairy imports, amounting to 55,000 tonnes and valued at \$204m, and including 34,900 tonnes of 'cheese and curd' and 7,100 tonnes of 'butter and other fats and oils'. Speciality cheeses, like mozzarella, edam and fetta from European countries including Italy, Denmark, the Netherlands and Bulgaria made up over 21% of the cheese and curd coming into Australia in 2001–02.

#### S14.6 EXPORTS OF SELECTED DAIRY PRODUCTS

	Units	1989–90		1994–95		1999–2000		2000–01		2001–02	
		Quantity '000	Value $m	Quantity '000	Value $m	Quantity '000	Value $m	Quantity '000	Value $m	Quantity '000	Value \$m
Milk and cream	litres	27.5	18.1	64.8	51.8	86.1	81.4	83.1	82.1	86.9	98.2
Milk and cream, in powder, granules or other solid form (excl. skimmed milk)	tonnes	55.3	152.0	120.7	296.3	224.9	577.8	241.7	798.9	256.3	879.0
Skim milk powder	tonnes	83.7	196.0	166.0	373.7	210.0	466.7	190.2	673.8	198.7	673.8
Butter and other fats and oils	tonnes	47.9	116.0	76.8	159.4	123.6	290.5	107.5	291.0	107.5	297.5
Cheese and curd	tonnes	53.3	184.4	116.4	401.9	219.9	807.1	219.0	951.0	218.3	1 034.4
Yoghurt	tonnes	1.6	2.9	3.0	7.6	2.8	7.0	3.0	8.1	2.6	8.3
Whey	tonnes	14.4	10.0	35.2	36.2	45.8	67.3	41.3	83.1	45.8	84.5
Casein	tonnes	4.0	22.8	5.0	35.2	13.6	80.7	10.0	89.5	8.5	76.9
Other dairy products	tonnes	10.5	23.2	21.7	46.0	19.2	38.1	13.8	44.5	15.1	39.7

Source: ABS data available on request, International Trade.

## Outlook for the industry

Having faced a major deregulation in 2000, the dairy industry's short-term prospects will be strongly influenced by the continuing efforts to liberalise world trade in dairy products. While Australian milk production has increased by an average of more than 4% per annum over the 15 years to 2001–02, the effects of drought caused a 10% decline in production to 10.1 billion litres in 2002–03. The latest predictions are that output for 2003–04 will remain at about this level.

With world dairy prices in decline since January 2001, because of weaker demand and increased supplies, the rising value of the Australian dollar and the threat of a continued decline for the remainder of 2003, it is becoming harder

for Australian dairy producers to maintain their competitive advantage in milk production and dairy product manufacturing. High stocks of dairy products such as milk powders in the EU and the US, and butter in the EU, combined with higher subsidies for European and US farmers, indicate that world prices for dairy products are expected to be poorer into 2004.

The Australian dairy industry's outlook hinges on the effects of the drought that is affecting most major dairying areas in eastern Australia. Increased farm costs stemming from higher feed grain prices, combined with poor pasture conditions and lower farm gate prices are expected to result in average yields per cow falling by around 7%.

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## FORESTRY AND FISHING

This chapter outlines the main features of two important primary industries in Australia, forestry and commercial fishing. Some information on recreational fishing is also provided.

The forests and wood products industries, based on native and plantation forests, employed over 78,000 people, with total income from sales and services for the Wood and paper product manufacturing industries alone amounting to \$15.1b in 2000–01. The value of exports and imports of forest products is substantial at about \$2.0b and \$3.7b respectively in 2001–02, making Australia a net importer of forest products.

Australia's fisheries resources are diverse. Over 3,000 species of marine and freshwater fish, and at least an equal number of crustacean and mollusc species, occur in waters in and around Australia. Less than 600 of these are commercially fished. However, almost all the major known fish, crustacean and mollusc resources are fully fished. Aquaculture, or 'fish farming', is an alternative to harvesting the naturally occurring fish stocks and has considerable potential as a way to ensure the sustainability of harvesting yields.

The gross value of Australian fisheries production, at the point of landing, was about \$2.4b in 2001–02, of which aquaculture accounted for 30%. The value of exports (which includes marketing and transport costs) and imports (including insurance and freight costs) of fisheries products stood at \$2.1b and \$1.2b respectively in 2001–02, making Australia a net exporter of these products.

The chapter concludes with an article *Indigenous fishing activity in northern Australian waters*.

## Forestry

Australia's native and plantation forests are an important natural resource providing a wide range of products and benefits to the community.

Forests are a reservoir of biological diversity and functioning ecosystems. They provide protection for soils and water resources, and are increasingly being recognised for their potential as carbon sinks. They are the foundation for a broad range of cultural and spiritual experiences for diverse groups of people and a major tourist attraction for Australians and overseas visitors, providing for a vast array of recreational and educational activities. Forests and plantations provide the basis for Australia's forest industries. Employment and wealth flow directly from the wood products derived from the forests, such as sawn timber, fibreboard, plywood and paper, and support a variety of other forest products and services, such as honey, wildflowers, natural oils, gums, resins, medicines, firewood and craft wood.

The Australian Government and the state and territory governments share a vision of ecologically sustainable management of the forest estate that integrates environmental, commercial and community values and uses. These values are embodied in regional forest agreements negotiated in New South Wales, Victoria, Western Australia and Tasmania.

### Forest estate

#### Native forest

A forest is defined by Australia's National Forest 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 as at February 2003 is estimated at 162.7 million hectares (ha), which is about 21% of Australia's land area (table 15.1). Of this area, 121.6 million ha (75%) were on public land and 38.9 million ha (24%) were on private land with the remaining 1% on land of unresolved tenure. Of the publicly owned forests, 75.6 million ha (62%) were on leasehold tenure, 21.5 million ha (17%) were in Nature Conservation Reserves, 13.1 million ha (10%) were on other Crown land and 11.4 million ha (9%) were managed by state forest authorities for multiple uses including wood production, recreation and informal reserves. Taking forested leasehold land together with private freehold forest, some 114.5 million ha, or 70% of Australia's native forests, were under private management.

#### Plantations

The combined resource of standing planted forests in Australia was 1.6 million ha planted to December 2002 (table 15.2). Softwood plantations, which are dominated by the exotic species *Pinus radiata*, represented 60% (988,000 ha). Hardwood plantations, which are almost all native eucalyptus species, mainly the *Eucalyptus globulus* variety, represented 39% (638,000 ha). The proportion of the estate accounted for by hardwood plantations is continuing to increase, up from 15% in 1994 and 29% in 1999.

A diverse range of ownership arrangements exists in the Australian plantation industry, including a variety of joint venture and annuity schemes between public and private parties. Over time, the area of plantations in public ownership has lessened, while the proportion in private ownership has increased. Just over half of the resource planted since 1990 involved private ownership of land and trees, while only a quarter of the resource planted during this period involved public ownership.

### 15.1 NATIVE FOREST AREAS — December 2002

	NSW(a)	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
<b>DOMINANT CANOPY SPECIES</b>									
Eucalypt									
Tall	3 820	2 465	1 189	1	170	1 129	—	28	8 802
Medium	18 190	3 407	36 023	596	12 400	1 281	11 268	81	83 247
Low	186	519	1 374	1 207	2 646	65	16 643	7	22 648
Mallee	23	1 171	122	6 044	4 969	—	—	—	12 329
Total	22 219	7 562	38 708	7 848	20 186	2 475	27 911	116	127 026
Acacia	1 251	64	6 984	1 939	4 563	74	1 613	—	16 488
Melaleuca	45	97	5 301	1	—	20	1 593	—	7 056
Rainforest	486	16	2 885	—	5	598	224	—	4 214
Casuarina	1 000	4	216	763	40	1	14	(b)—	2 039
Mangrove	3	2	196	19	173	—	355	—	749
Callitris	1 240	56	387	261	—	1	386	1	2 330
Other	415	135	1 059	34	398	(b)—	738	(b)—	2 780
<b>Total</b>	<b>26 658</b>	<b>7 935</b>	<b>55 734</b>	<b>10 866</b>	<b>25 365</b>	<b>3 169</b>	<b>32 836</b>	<b>117</b>	<b>162 680</b>

#### TENURE

Public									
Multiple use forest(c)	2 496	3 311	2 925	5	1 600	1 062	—	(b)—	11 400
Nature Conservation Reserve(d)	4 471	3 050	5 000	3 943	3 805	1 105	12	106	21 491
Other Crown land(e)	1 055	207	1 131	392	9 387	80	890	—	13 143
Leasehold(f)	9 470	46	35 581	5 250	8 920	—	16 313	11	75 591
Total	17 492	6 614	44 638	9 590	23 712	2 247	17 215	117	121 625
Private	8 523	1 298	10 213	822	1 639	922	15 511	—	38 928
Unresolved tenure	643	23	883	454	14	—	110	—	2 127
<b>Total(a)</b>	<b>26 658</b>	<b>7 935</b>	<b>55 734</b>	<b>10 866</b>	<b>25 365</b>	<b>3 169</b>	<b>32 836</b>	<b>117</b>	<b>162 680</b>

(a) NSW figures by forest type yet to be finalised, but total area for NSW is correct. (b) Area less than 500 ha. (c) Publicly owned land managed for multiple use including wood production. (d) Public land on which wood production is excluded (national parks, etc.). (e) Reserved areas of educational, scientific and other public institutional land, including easements, defence land, and other minor tenure classifications. (f) Crown land where the right to harvest or clear land must be approved by state/territory governments. Often known as pastoral leases.

Source: Bureau of Rural Sciences, 'National Forest Inventory, 2003'.

### 15.2 PLANTATION AREAS — December 2002

	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	51	143	26	32	248	135	3	(a)—	638
Softwood	271	217	182	117	104	78	4	16	988
Unknown	1	—	(a)—	(a)—	—	—	—	—	2
<b>Total</b>	<b>323</b>	<b>360</b>	<b>208</b>	<b>149</b>	<b>352</b>	<b>213</b>	<b>7</b>	<b>16</b>	<b>1 628</b>

(a) Area less than 500 ha.

Source: Bureau of Rural Sciences, 'National Plantation Inventory, Annual Update, March 2003'.

## Farm forestry

Farm forestry generally refers to the incorporation of commercial tree growing into farming systems. This may take the form of smaller scale plantations on farms, timber belts, wind breaks, alleys and wide-spaced plantings, and may also include management of native forest for commercial returns on farms.

Farm forestry is increasingly becoming adopted as part of farm management planning and integrated into existing land uses, not only to supply wood but also to provide a range of benefits such as environmental protection and increased agricultural production.

To date, plantation farm forestry has mostly occurred in higher rainfall regions (greater than 600 mm) where good growth rates can be achieved and there is an existing timber processing industry. Many farmers have also entered into farm forestry by leasing their land or forming joint venture agreements with large-scale forest management companies. In lower rainfall regions, fostering farm forestry uptake and revegetation in general, will become an increasing priority in government programs designed to improve land management and ameliorate environmental degradation, especially salinity and water quality.

The baseline area for plantations owned outright by individuals having total estates less than 1,000 ha (i.e. the small-grower sector) was just on 67,000 ha in 2000, or nearly 5% of Australia's total plantation estate (Bureau of Rural Sciences, *Australia's State of the Forests Report, 2003*). In contrast to the wider plantation estate, which mainly comprised softwoods, the farm forest resource comprised over 60% hardwoods.

The management of private native forests is recognised as an important component of farm forestry, as 24% of Australia's total native forest area is in private ownership and a further 46% is on privately managed leasehold land.

## Wood and paper products

Australia's wood and paper products industries are important components of Australia's primary and secondary industry sectors. They are particularly important in providing economic development and employment in many regions of rural Australia. The industries include hardwood and softwood sawmilling, plywood and panels manufacturing, woodchip production and export, and the pulp and paper industries. In 2000–01, the

total sales and service income of the Wood and paper product manufacturing industries was \$15.1b, of which Paper and paper product manufacturing contributed \$8.0b (table 15.3).

In 2001–02, it is estimated that total roundwood removed from forests remained steady at 24.3 million cubic metres. The removal of broadleaved wood (primarily from native forests) fell 8.6% in 2001–02 to 10.6 million cubic metres, while 7.5% more coniferous wood (mainly from plantations) was removed.

In 2001–02, the value of exports of forest products totalled \$2.0b, of which 36% were woodchips and 35% paper and paperboard products. In that year the value of imports of forest products was \$3.7b, of which 53% were paper and paperboard products and 12% sawnwood. This indicates a trade deficit in forest products of \$1.7b in 2001–02. Australia produces 87% of its sawn timber needs, of which native forests provide 27%, with the balance coming from softwood plantations. Imported sawn timber is mostly Radiata pine from New Zealand and Douglas fir from North America.

The hardwood and softwood sawmilling industries comprise mills of various sizes which process wood into sawn timber and other products such as veneers, mouldings and floorings. The hardwood mills are generally small scale and scattered. The softwood mills are generally larger and more highly integrated with other wood processing facilities. Australia's production of sawn timber increased by 17% in 2001–02 to 4,119,000 cubic metres (table 15.4), of which 73% was softwood.

Other value-added timber products include plywood, wood-based panels and reconstituted wood products. Australian wood-based panels include particleboard, medium density fibreboard, and hardboard made from softwood or hardwood pulp logs, sawmill residues or thinnings.

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. Of the paper and paper products consumed domestically in 2001–02, 39% were imported, with 72% of printing and writing paper coming from overseas. The majority of paper products produced domestically were packaging and industrial paper (58%) along with newsprint, printing and

writing papers, and tissue paper. Recycled paper now contributes 54% of the fibre used in the production of all paper and paperboard.

Woodchips are mainly used in the production of Australia's paper and paper products, and the woodchip export industry uses sawmill residues and timber which is unsuitable for sawmilling and not required by the pulp, paper and reconstituted wood products industries. Before the advent of the woodchip export industry, much of this

material was left in the forest after logging. Considerable quantities of sawmill waste material, which would otherwise be burnt, are also chipped for local pulpwood-using industries and for export. Up until 1990–91, at least 95% of woodchips exported from Australia had been eucalypt, but since then greater quantities of softwood woodchips have become available from pine plantations. In 2001–02, some 19% of the total value of woodchips exported was from softwood woodchips.

### 15.3 FOREST AND FOREST PRODUCT INDUSTRIES, Summary of operations — 2000–01

Industry	Employment	Wages and	Sales and
	at 30 June(a)	salaries(b)	service income(c)
	'000	\$m	\$m
Forestry and logging	13.4	n.a.	n.a.
Wood and paper product manufacturing(d)			
Log sawmilling and timber dressing			
Log sawmilling	5.3	134.4	693.5
Wood chipping	0.6	19.4	242.6
Timber resawing and dressing	7.9	297.5	1 633.0
Total	13.9	451.2	2 569.1
Other wood product manufacturing			
Plywood and veneer manufacturing	1.0	34.3	157.7
Fabricated wood manufacturing	4.5	190.8	1 158.1
Wooden structural component manufacturing	20.2	562.2	2 623.8
Wood product manufacturing n.e.c.	5.7	147.9	617.4
Total	31.4	935.1	4 557.1
Paper and paper product manufacturing			
Pulp, paper and paperboard manufacturing	5.1	296.1	2 662.5
Solid paperboard container manufacturing	2.9	140.3	713.5
Corrugated paperboard container manufacturing	5.9	352.5	2 628.5
Paper bag and sack manufacturing	1.3	42.6	260.7
Paper product manufacturing n.e.c.	4.6	238.3	1 685.7
Total	19.7	1 069.9	7 950.9
Total	65.0	2 456.3	15 077.1
<b>Total forest and wood and paper products</b>	<b>78.4</b>	<b>n.a.</b>	<b>n.a.</b>

(a) Includes working proprietors. (b) Excludes the drawings of working proprietors. (c) Sales of goods, whether or not produced by the business, and income from service activities. (d) Part of manufacturing industry.

Source: *Manufacturing Industry, Australia, 2000–01 (8221.0)*; ABS data available on request, *Labour Force Survey*.

## 15.4 PRODUCTION OF WOOD AND SELECTED WOOD PRODUCTS

Commodity	Units	1998-99	1999-2000	2000-01	2001-02
Sawn Australian grown timber					
Coniferous(a)	'000 m <sup>3</sup>	2 338	2 637	2 351	3 011
Broadleaved	'000 m <sup>3</sup>	1 267	1 346	1 174	1 108
Total	'000 m <sup>3</sup>	3 606	3 983	3 525	4 119
Hardwood woodchips(b)	'000 t	4 856	6 164	6 402	5 912
Railway sleepers	'000 m <sup>3</sup>	67	40	n.a.	n.a.
Plywood	'000 m <sup>3</sup>	169	192	157	201
Unlaminated particle board	'000 m <sup>3</sup>	902	978	904	965
Medium density fibreboard	'000 m <sup>3</sup>	495	621	712	732
Wood pulp(b)	'000 t	871	861	895	843
Paper and paperboard					
Newsprint(b)	'000 t	405	464	465	395
Printing and writing	'000 t	497	535	554	624
Household and sanitary	'000 t	187	232	204	198
Packaging and industrial	'000 t	1 475	1 605	1 449	1 679

(a) From July 2000, includes railway sleeper production that can no longer be separately identified. (b) Excludes production of small establishments with fewer than four persons employed, and establishments engaged in non-manufacturing activities but which may carry on, in a minor way, some manufacturing.

Source: *Manufacturing Production, Australia (8301.0)*; Australian Bureau of Agricultural and Resource Economics, 'Australian Forest Products Statistics'.

### Management of forests

Land and forest management is the constitutional responsibility of state and territory governments. Each state has a forest authority responsible for the management and control of publicly owned forests, in accordance with the relevant Forestry Acts and Regulations.

The Australian Government Department of Agriculture, Fisheries and Forestry - Australia (AFFA) and the Department of the Environment and Heritage (E&H) are the two key agencies with responsibilities relating to forests at the national level. Close liaison is maintained between them on relevant issues. AFFA's main responsibilities are the development of a national approach to forest management; providing advice to government on forest matters; administration of export licensing responsibilities in relation to unprocessed timber; liaison with state, national and international organisations concerned with forestry; and management of policy and program initiatives.

E&H has responsibility for environmental matters relating to forests, and provides policy advice to government on conservation and environmental matters pertaining to Australia's forests, including biological diversity and climate change. The Australian Heritage Commission and Environment Australia have assessment, management and monitoring roles in respect of the national estate, endangered species and environmental impacts in Australia's forests.

AFFA and E&H, in close cooperation with the state and territory governments, and other bodies, were extensively involved in the development of the National Forest Policy Statement and continue to actively participate in ongoing development of Australia's National Forest Inventory. Details of these initiatives and others such as Regional Forest Agreements, the Forestry Industry Structural Adjustment Program and the National Plantation Inventory can be obtained from the AFFA web site, <<http://www.affa.gov.au/forestry>>.

Research for the forestry, wood and paper industries addresses industrial and environmental forestry including the sustainable management of eucalypt and softwood plantations, tree breeding and genetics, wood properties and quality, forest assessment, and wood and fibre processing and products.

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) plays a major role in undertaking research into a broad range of community and economic issues including landscape degradation, conservation of biodiversity, water quality, renewable energy, greenhouse gas emissions and carbon sequestration, and new product options such as novel composites and environmentally benign preservation methods. CSIRO is also an active participant in five Cooperative Research Centres: Sustainable Production Forestry, Greenhouse Accounting, Functional Communication Surfaces, Plant-based Management of Dryland Salinity, and Innovative Wood Manufacturing.

## Fishing

### Production, processing, and exports and imports of fisheries products

#### Value of fisheries production

Australia's major commercially accessed species are prawns, rock lobster, abalone, tuna, other finfish, scallops, and edible and pearl oysters. Australian fishing operators concentrate their efforts on estuarine, coastal, pelagic (surface) species and demersal (bottom living) species that occur on the continental shelf.

Table 15.5 shows the quantity (or volume) and table 15.6 the gross value of production of the Australian commercial fishing industry in 2001–02. The gross value of Australian fisheries production (including aquaculture) remained steady in 2001–02 at \$2.4b following a 4% increase the previous year (table 15.8). Rises in the value of pearls and finfish other than tuna were offset by

falls in abalone, prawns and other fishery products (table 15.9). In quantity terms, there was a 2% increase over the year in Australian fisheries production to 233,000 tonnes, with the catch of finfish other than tuna (up 12%) being the most significant contributor (table 15.7).

Australian fisheries production covers total production from both Commonwealth and state managed fisheries and from aquaculture. Commonwealth fisheries accounted for 20% of the total gross value of Australian fisheries production in 2001–02 (table 15.6). Commonwealth fisheries are those managed on behalf of the Australian Government by the Australian Fisheries Management Authority. State governments manage inland fisheries and aquaculture, in addition to those salt water fisheries not managed by the Australian Government. The distribution of the management of fisheries between the Australian Government and state governments is determined following consultations held under the Offshore Constitutional Settlement Agreement.

**15.5 FISHERIES PRODUCTION, Quantity(a) — 2001–02**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Cwth(b)	Aust.
	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes
<b>Fish</b>									
Tuna	52	—	—	9 245	27	—	6	(c)11 806	(d)15 903
Other	12 844	4 784	13 814	16 852	16 456	15 546	4 438	(e)50 065	134 798
<b>Total</b>	<b>12 896</b>	<b>4 784</b>	<b>13 814</b>	<b>26 097</b>	<b>16 483</b>	<b>15 546</b>	<b>4 444</b>	<b>61 871</b>	<b>150 702</b>
<b>Crustaceans</b>									
Prawns	2 162	107	9 955	2 631	3 497	—	—	(f)10 680	29 032
Rock lobster	103	472	436	2 392	9 050	1 522	—	330	14 304
Other	590	105	3 668	724	1 171	109	1 189	315	7 870
<b>Total</b>	<b>2 854</b>	<b>684</b>	<b>14 059</b>	<b>5 747</b>	<b>13 718</b>	<b>1 630</b>	<b>1 189</b>	<b>11 325</b>	<b>51 206</b>
<b>Molluscs</b>									
Abalone	281	1 423	—	885	296	2 928	—	—	5 813
Scallops	—	550	3 120	—	1 975	—	2	11	5 658
Oysters(g)	4 916	—	116	2 425	—	2 188	—	—	9 644
Other	1 337	1 770	190	1 988	1 413	474	127	(h)1 531	8 830
<b>Total</b>	<b>6 535</b>	<b>3 743</b>	<b>3 426</b>	<b>5 298</b>	<b>3 684</b>	<b>5 590</b>	<b>129</b>	<b>1 541</b>	<b>29 946</b>
Other fisheries production	19	—	335	270	72	146	—	650	1 493
<b>Total quantity</b>	<b>22 304</b>	<b>9 211</b>	<b>31 634</b>	<b>37 412</b>	<b>33 956</b>	<b>22 912</b>	<b>5 763</b>	<b>75 387</b>	<b>233 346</b>

(a) Includes estimates of aquaculture production (except NT); excludes hatchery and inland commercial fishery production.  
 (b) Total includes all fisheries under federal jurisdiction. (c) Includes the Southern bluefin, Eastern tuna and billfish, Southern and Western tuna fisheries. (d) Total has been adjusted down so as not to double count some Southern bluefin tuna caught in the Commonwealth Southern Bluefin Tuna Fishery which was used as input to farms in SA. (e) Includes the fish component of Commonwealth fisheries, plus catch from Commonwealth fisheries that cannot be disaggregated due to confidentiality reasons.  
 (f) Includes the Northern prawn, Torres Strait, South East and other fisheries. (g) Excludes pearl oyster production. (h) Includes squid, octopus and cuttlefish from the South East and Great Australian Bight fisheries, and pearl oyster from the Torres Strait Fishery.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Fisheries Statistics, 2002'.

### 15.6 FISHERIES PRODUCTION, Gross value(a) — 2001–02

	NSW	Vic.	Qld	SA	WA	Tas.	NT	Cwth(b)	Aust.
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Fish</b>									
Tuna	236	—	—	260 500	203	1	23	(c)132 585	(d)322 999
Other	41 399	26 783	94 194	27 981	40 243	115 789	19 855	(e)172 730	538 974
<b>Total</b>	<b>41 635</b>	<b>26 783</b>	<b>94 194</b>	<b>288 481</b>	<b>40 446</b>	<b>115 790</b>	<b>19 877</b>	<b>305 315</b>	<b>861 973</b>
<b>Crustaceans</b>									
Prawns	32 964	1 391	134 400	47 731	46 380	—	—	(f)158 648	421 513
Rock lobster	4 752	20 540	5 067	91 862	305 267	64 619	—	8 852	500 959
Other	5 596	1 018	24 042	4 733	9 087	3 480	10 878	3 820	62 654
<b>Total</b>	<b>43 313</b>	<b>22 949</b>	<b>163 508</b>	<b>144 326</b>	<b>360 734</b>	<b>68 099</b>	<b>10 878</b>	<b>171 320</b>	<b>985 127</b>
<b>Molluscs</b>									
Abalone	12 373	61 261	—	36 656	14 599	120 451	—	—	245 340
Scallops	—	1 283	15 077	—	6 574	—	4	86	23 024
Oysters(g)	31 538	—	620	13 303	175 000	11 566	—	—	232 027
Other	5 651	4 700	959	4 232	16 496	1 976	1 197	(h)2 488	37 699
<b>Total</b>	<b>49 562</b>	<b>67 244</b>	<b>16 657</b>	<b>54 191</b>	<b>212 669</b>	<b>133 993</b>	<b>1 202</b>	<b>2 574</b>	<b>538 091</b>
<b>Other fisheries production</b>	<b>1 216</b>	<b>—</b>	<b>3 026</b>	<b>2 779</b>	<b>868</b>	<b>9 529</b>	<b>4 627</b>	<b>1 415</b>	<b>23 461</b>
<b>Total value</b>	<b>135 725</b>	<b>116 976</b>	<b>277 385</b>	<b>489 777</b>	<b>614 718</b>	<b>327 410</b>	<b>36 585</b>	<b>480 624</b>	<b>2 408 651</b>

(a) Includes estimates of the value of aquaculture production, but excludes the value of hatchery and inland commercial fishery production. (b) Total includes all fisheries under federal jurisdiction. (c) Includes the Southern bluefin, Eastern tuna and billfish, Southern and Western tuna fisheries. (d) Total has been adjusted down so as not to double count some Southern bluefin tuna caught in the Commonwealth Southern Bluefin Tuna Fishery which was used as input to farms in SA. (e) Includes the fish component of Commonwealth fisheries, plus catch from Commonwealth fisheries that cannot be disaggregated due to confidentiality reasons. (f) Includes the Northern prawn, Torres Strait, South East and other fisheries. (g) Includes pearl oyster production. (h) Includes squid, octopus and cuttlefish from the South East and Great Australian Bight fisheries, and pearl oyster from the Torres Strait Fishery.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Fisheries Statistics, 2002'.

### 15.7 FISHERIES PRODUCTION, Quantity(a)

	1999–2000	2000–01	2001–02
	tonnes	tonnes	tonnes
<b>Fish</b>			
Tuna	16 201	16 107	15 903
Other	113 454	120 118	134 798
<b>Total</b>	<b>129 655</b>	<b>136 225</b>	<b>150 702</b>
<b>Crustaceans</b>			
Prawns	26 781	30 026	29 032
Rock lobster	20 312	16 837	14 304
Other	7 761	8 856	7 870
<b>Total</b>	<b>54 854</b>	<b>55 719</b>	<b>51 206</b>
<b>Molluscs</b>			
Abalone	5 572	5 667	5 813
Scallops	12 014	9 197	5 658
Oysters	9 654	9 560	9 644
Other	8 495	10 766	8 830
<b>Total</b>	<b>35 735</b>	<b>35 190</b>	<b>29 946</b>
<b>Other fisheries production</b>	<b>1 505</b>	<b>1 975</b>	<b>1 493</b>
<b>Total</b>	<b>221 748</b>	<b>229 110</b>	<b>233 346</b>

(a) Includes estimates of aquaculture production (except in NT); excludes production of pearl oysters in Qld and WA, and hatchery and inland commercial fishery production.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Fisheries Statistics, 2002'.

### 15.8 FISHERIES PRODUCTION, Gross value(a)

	\$m
1982–83	423
1987–88	828
1992–93	1 493
1997–98	1 883
1998–99	2 106
1999–2000	2 344
2000–01	2 428
2001–02	2 409

(a) Includes estimates of the value of aquaculture production, but excludes the value of hatchery and inland commercial fishery production.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Fisheries Statistics, 2002'.

## 15.9 SELECTED FISHERY PRODUCTS,

### Gross value(a)

	1999–2000	2000–01	2001–02
	\$m	\$m	\$m
Prawns	415	453	422
Rock lobster	545	481	501
Tuna	257	329	323
Other finfish	454	484	539
Abalone	221	276	245
Scallops	43	40	23
Oysters	53	55	57
Pearls(b)	190	150	175
Other n.e.i.(c)	165	160	124
<b>Total</b>	<b>2 344</b>	<b>2 428</b>	<b>2 409</b>

(a) Includes estimates of the value of aquaculture production, but excludes the value of hatchery and inland commercial fishery production. (b) Excludes NT. (c) Includes pearl oysters and aquaculture for NT.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Fisheries Statistics, 2002'.

## Processing of fish, crustaceans and molluscs

In Australia, very little processing of fish products is undertaken which adds value to the product. Processing establishments vary in size, scope of operations and sophistication of technologies employed. The majority of establishments undertake only the most basic cleaning, filleting, chilling, freezing and packaging processes, but 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 by air to local or overseas markets.

## Exports and imports

Exports of fisheries products come under Commonwealth jurisdiction, while domestic market activity is the responsibility of the states and territories.

A significant proportion of Australian fisheries production (edible and non-edible) is exported. In 2001–02, the value of exports (including live fish) declined by 3.5% to \$2.1b (table 15.10). Although the value of rock lobster exports fell by 8% (for the second year running) to \$493m, this product remained Australia's highest earning fisheries export in 2001–02, accounting for 30% of the total value of fisheries products exported. Tuna, abalone and prawns were the next largest edible fisheries exports worth \$319m, \$263m and \$263m respectively. Pearl exports earned \$404m. (For some fisheries categories, the value of exports exceeds the value of production because exports are valued on a free on board (f.o.b.) basis which includes the value of packaging and distribution services to the point of export.)

In 2001–02, Japan continued to be the major destination for Australian exports of fisheries products, accounting for 34% of the total value. The combined value of shipments to the four largest export markets, Japan, Hong Kong, United States of America and Taiwan, fell \$128m (7.9%). A 43% increase in exports in 2001–02 has resulted in China moving ahead of Singapore in the ranking of fisheries export destinations (table 15.10).

## 15.10 DESTINATION OF EXPORTS OF FISHERIES PRODUCTS(a)

Country	1999–2000		2000–01		2001–02	
	\$m	%	\$m	%	\$m	%
Japan	680	34.6	745	35.0	698	34.0
Hong Kong (SAR of China)	368	18.7	496	23.3	468	22.8
United States of America	187	9.5	192	9.0	172	8.4
Taiwan	211	10.7	180	8.5	147	7.2
China (excl. SARs & Taiwan Prov.)	42	2.1	51	2.4	73	3.6
Singapore	60	3.1	61	2.9	65	3.2
New Zealand	16	0.8	32	1.5	32	1.6
Thailand	8	0.4	18	0.8	23	1.1
Spain	19	1.0	31	1.5	19	0.9
France	21	1.0	13	0.6	13	0.6
United Kingdom	13	0.7	16	0.8	8	0.4
Germany	8	0.4	7	0.3	8	0.4
Other	331	17.0	285	13.4	326	15.8
<b>Total</b>	<b>1 964</b>	<b>100.0</b>	<b>2 127</b>	<b>100.0</b>	<b>2 052</b>	<b>100.0</b>

(a) Includes non-edible products (e.g. marine fats and oils, fishmeal, pearls and ornamental fish). Excludes sea products landed abroad directly from the high seas.

Source: ABS data available on request, International Trade Special Data Service.

In 2001–02, South Australia earned \$475m (29% of the total Australian value) from the export of seafood (i.e. edible fisheries products) half of which came from the sale of fresh, chilled or frozen fish (\$263m). Western Australia, the next largest earner from the seafood export trade, moved shipments worth \$428m with three-quarters of this sum coming from exports of rock lobster (\$330m). Prawns earned Queensland \$190m out of a total \$378m worth of seafood exported from that state.

The total value of Australian imports of fisheries products increased by 3% in 2001–02, to an estimated \$1.2b (table 15.11), although Australia remained a net exporter of fisheries products. The major item of value imported in 2001–02 was pearls at \$217m (although most of these are previous exports returning unsold). Other significant fisheries imports, in value terms, were frozen fillets (\$207m), canned fish (\$177m) and prawns (\$167m). The two main sources of these imported fisheries products were Thailand and New Zealand.

## Fisheries resources

The Australian Fishing Zone (AFZ) covers offshore waters between three miles and two hundred nautical miles seaward of the territorial sea baseline of Australia and its external territories. This area of 8.9 million square kilometres makes it an expanse 16% larger than the Australian landmass, and the third largest fishing zone in the world. However, the catch is insignificant by world standards as the waters of the AFZ lack nutrient rich currents, causing low productivity. Map 15.12 shows the status of Australia's Commonwealth managed or jointly managed fisheries resources.

While some species are considered to be over-harvested, some fish resources such as albacore and Southern whiting are not being used optimally. There are some 3,000 known species of fish, and at least an equal number of crustaceans and mollusc species inhabiting Australian waters, but only about 600 are commercially fished.

The level of fishing activity has increased over the last decade to the point where almost all the major known fish, crustacean and mollusc resources are fully used. Some major species such as Southern bluefin tuna, gemfish and shark have suffered serious biological depletion.

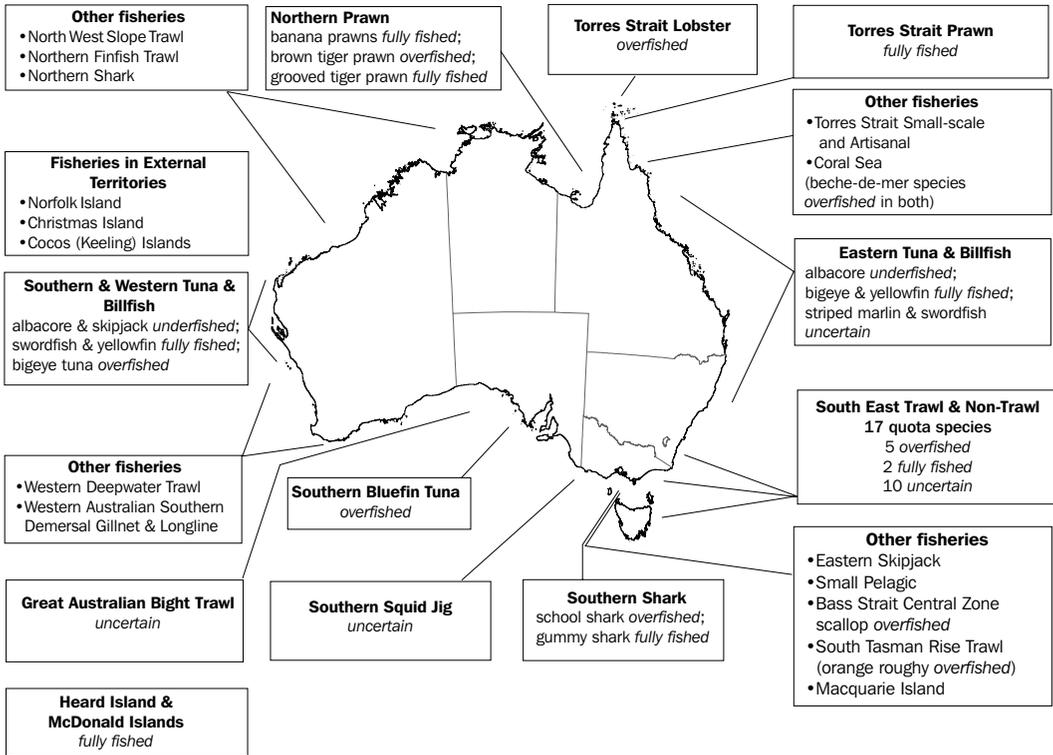
### 15.11 SOURCE OF IMPORTS OF FISHERIES PRODUCTS(a)

Country	1999–2000		2000–01		2001–02	
	\$m	%	\$m	%	\$m	%
Thailand	241	22.1	244	21.2	233	19.6
New Zealand	156	14.3	164	14.2	174	14.7
United States of America	75	6.9	75	6.5	61	5.2
Vietnam	32	2.9	44	3.8	48	4.0
Japan	34	3.1	23	2.0	43	3.6
India	15	1.4	35	3.0	42	3.5
Indonesia	25	2.3	40	3.5	40	3.4
South Africa	34	3.1	37	3.2	39	3.3
Malaysia	32	2.9	36	3.1	35	2.9
China (excl. SARs & Taiwan Prov.)	14	1.3	22	1.9	30	2.5
Chile	23	2.1	21	1.8	29	2.5
Taiwan	22	2.0	26	2.3	24	2.0
Other	388	35.6	385	33.5	389	32.8
<b>Total</b>	<b>1 091</b>	<b>100.0</b>	<b>1 152</b>	<b>100.0</b>	<b>1 187</b>	<b>100.0</b>

(a) Includes non-edible products (e.g. marine fats and oils, fishmeal, pearls and ornamental fish).

Source: ABS data available on request, International Trade Special Data Service.

## 15.12 STATUS OF COMMONWEALTH MANAGED OR JOINTLY MANAGED FISHERIES RESOURCES



Source: Bureau of Rural Sciences.

### Management of fisheries

The Commonwealth has jurisdiction over the AFZ. Conversely, the states and the Northern Territory have jurisdiction over inland fisheries and marine waters up to three nautical miles seaward of the territorial sea baseline. To aid the management of Australian fisheries, arrangements known as Offshore Constitutional Settlements have been entered into, which transfer jurisdiction from the Commonwealth to the state or territory.

The *Fisheries Management Act 1991* (Cwlth) is the main fisheries legislation, and applies to commercial fishing for swimming and sedentary species in the AFZ. The establishment of the AFZ in 1979 brought portions of oceanic tuna stocks,

and demersal and pelagic fish stocks previously accessed by foreign fishing vessels, under Australian control.

The *Fisheries Administration Act 1991* (Cwlth) establishes the Australian Fisheries Management Authority (AFMA) and specifies its functions. These include a duty to engage in appropriate consultation and to devise and implement management plans, adjustment programs and exploratory/feasibility fishing programs. AFMA establishes priorities for management-related research and arranges for such research to be undertaken. Details of these and other government legislation relating to the management of fisheries can be obtained from the AFMA web site, <<http://www.afma.gov.au>>.

## Aquaculture

Aquaculture is an alternative to harvesting the naturally occurring fish stocks, and has considerable potential as a means of ensuring sustainability of harvesting yields. Australia's first experience with aquaculture was the farming of the Sydney rock oyster. More recently, operations to produce tuna, cultured pearls, salmon and prawns have become well established.

Aquaculture operations occur in diverse environmental areas including tropical, subtropical and temperate sectors. The location of aquaculture is dependent on seasonal factors, the type of species being cultivated, the stage of aquatic organisms in their life-cycle and proximity to marine parks. The industry directly employs about 5,000 people, provides regional development opportunities in rural Australia and contributes to export growth.

There are many types of systems used in aquaculture employing a variety of management techniques. The main emphasis of the industry is on producing high value species in near-shore or land-based sites within the coastal zone; only about 10% of total production value is from freshwater species. Systems can be open or closed depending on the water flow. Open systems allow water to move through the cages such as in open seas or flowing rivers. In closed systems, the water flow is contained as in a lake or an aquarium.

In 2001–02, the gross value of Australian aquaculture production was \$733m, an increase of 4% on that for 2000–01 (table 15.13). This increase was mainly due to a \$24.6m (16%) rise in the value of pearl oyster production, a \$14.9m (30%) increase in the value of prawns and a \$12.9m (13%) increase in the value of salmon produced.

Table 15.14 shows the volume of Australian aquaculture production for the three years 1999–2000 to 2001–02, with the latest year

showing an 8% increase in total. In 2001–02, production of salmon (14,356 tonnes, a 13% increase on the previous year) accounted for the largest share of aquaculture production while the next biggest contributors to the total were edible oysters and tuna. Prawn production increased by 31% to 3,696 tonnes in 2001–02.

### 15.13 AQUACULTURE PRODUCTION, Gross value(a)

	1999–2000	2000–01	2001–02
	\$m	\$m	\$m
<b>Fish</b>			
Salmon	84.8	99.2	112.1
Tuna	202.0	263.8	260.5
Trout	13.0	12.8	12.9
Other(b)	17.4	19.6	21.0
<b>Total</b>	<b>317.3</b>	<b>395.4</b>	<b>406.5</b>
<b>Crustaceans</b>			
Prawn	51.3	49.5	64.4
Yabbies	3.7	3.4	2.1
Other(c)	2.1	2.5	2.4
<b>Total</b>	<b>57.0</b>	<b>55.4</b>	<b>68.9</b>
<b>Molluscs</b>			
Pearl oysters	190.5	150.5	175.1
Edible oysters	53.3	55.1	56.9
Other(d)	7.3	9.0	10.6
<b>Total</b>	<b>251.1</b>	<b>214.6</b>	<b>242.6</b>
<b>Other fisheries production(e)</b>	<b>59.5</b>	<b>42.1</b>	<b>14.6</b>
<b>Total</b>	<b>684.9</b>	<b>707.5</b>	<b>732.6</b>

(a) Excludes hatcheries production, crocodiles, microalgae and aquarium worms. (b) Includes eels, aquarium fish and other native fish. (c) Includes marron and redclaw. (d) Includes mussels, scallops, giant clams and abalone. (e) Includes all NT; includes value of species unable to be assigned to a specific category.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Fisheries Statistics, 2002'.

### 15.14 AQUACULTURE PRODUCTION, Quantity(a)

	1999–2000	2000–01	2001–02
	tonnes	tonnes	tonnes
<b>Fish</b>			
Salmon	10 907	12 724	14 356
Trout	1 887	1 950	1 864
Tuna	7 780	9 051	9 245
Other(b)	1 274	1 470	1 861
<i>Total</i>	<i>21 848</i>	<i>25 195</i>	<i>27 326</i>
<b>Crustaceans</b>			
Prawn	2 909	2 819	3 696
Yabbies	284	276	173
Other(c)	125	147	134
<i>Total</i>	<i>3 318</i>	<i>3 242</i>	<i>4 002</i>
<b>Molluscs</b>			
Edible oysters	9 654	9 560	9 644
Other(d)	2 057	2 566	3 083
<i>Total</i>	<i>11 711</i>	<i>12 126</i>	<i>12 727</i>
<b>Other fisheries production(e)</b>	<b>337</b>	<b>480</b>	<b>270</b>
<b>Total</b>	<b>37 214</b>	<b>41 044</b>	<b>44 325</b>

(a) Excludes NT; excludes hatcheries production, crocodiles, microalgae and aquarium worms. (b) Includes eels, aquarium fish and other native fish. (c) Includes marron and redclaw. (d) Includes mussels, scallops, giant clams and abalone. (e) Includes production of species unable to be assigned to a specific category.

Source: Australian Bureau of Agricultural and Resource Economics, 'Australian Fisheries Statistics, 2002'.

### Recreational fishing

Results of a national survey of recreational fishing conducted over a 12-month period during 2000–01 showed that 3.4 million Australians (2.3 million males and 1.1 million females) over the age of five years went fishing at least once in the period (AFFA, National Recreational and Indigenous Fishing Survey). In addition, nearly 4% of international tourists visiting Australia were estimated to have engaged in recreational fishing.

In the 12-month period, fishers caught and retained a total of 136 million aquatic animals, weighing in excess of 32,000 tonnes.

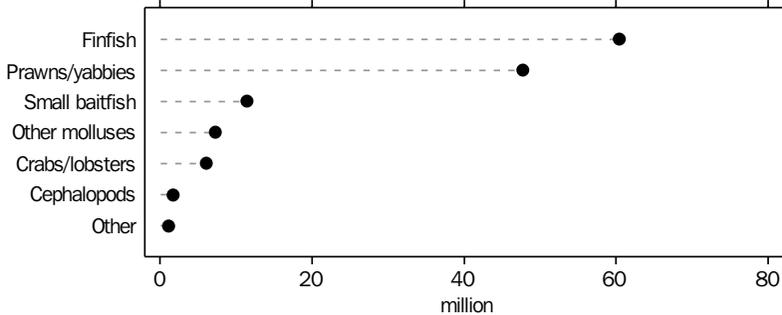
Just over a third of Australia's recreational fishers reported they went fishing mainly to 'relax and unwind' (37%). Another 18% fished 'for sport' and 15% 'to be with family'. Only 8% of recreational fishers considered catching fish for food as their prime motivation and only 4% were members of fishing clubs.

Most recreational fishing occurred in saltwater with coastal (41%), estuarine (35%) and offshore waters (4%) attracting over three-quarters of the fishing effort. The shore was the preferred location for 57% of fishers and line fishing (85%) easily the most popular fishing method.

Finfish (60.4 million) comprised the largest group of the catch retained by recreational fishers, with the main species being whiting, flathead, herring and salmon. It is also estimated that the 'bagged' catch of recreational fishers, included 47.7 million prawns and yabbies, 11.5 million baitfish, and 6.1 million crabs and lobsters (graph 15.15). A total of 60 million aquatic animals were caught and released, with Murray cod, barramundi, wrasse, snapper and mud crab the most likely to be returned to the water.

In 2000–01, Australian recreational fishers spent an estimated \$1.8b on fishing related items, or an average of \$552 per person. Fishers reported more than 45 different expenditure items with expenditure on boats and trailers (\$940m) the biggest individual expense. Travel associated with fishing (\$395m) and fishing gear (\$182m) followed in importance. More than 511,000 boats with a capital value of \$3.3b were used for recreational fishing.

### 15.15 RECREATIONAL FISHING HARVEST(a) — 2000–01



(a) Aquatic animals taken by Australian recreational fishers aged five years or older.

Source: Department of Agriculture, Fisheries and Forestry - Australia, National Recreational and Indigenous Fishing Survey.

## Indigenous fishing activity in northern Australian waters

For many Indigenous people, fishing is an important source of food and nutrition. It is also an invaluable component of their cultural lifestyle and is connected to the traditional responsibilities of land management and kinship.

A survey of Indigenous fishing activity was conducted in 2000–01 as part of the broader Department of Agriculture, Fisheries and Forestry National Recreational and Indigenous Fishing Survey. The survey covered Indigenous persons, aged five years and older and living in 44 coastal communities across northern Australia from Broome (Western Australia) to Cairns (Queensland). An estimated 37,000 Indigenous persons from these communities fished at least once in a period of 12 months between June 2000 and November 2001. This was a participation rate of almost 92%. They harvested aquatic animals from a range of environments, but inshore waters accounted for more than half the fishing effort. Indigenous fishers used line fishing (53% of the time), hand collection (26%), nets (12%) and spears (9%) as their primary fishing methods.

Indigenous fishers from the coastal communities surveyed fished harvested a broader range of species and employed non-line fishing techniques to a greater level than recreational fishers did nationally. Recreational and

Indigenous fishers harvested the full range of common finfish species inhabiting northern Australian waters. However, Indigenous fishers harvested a greater range of non-fish species (crabs, shellfish) than the recreational fishers and these non-fish species formed a greater proportion of the Indigenous catch. Recreational and Indigenous fishers used similar fishing methods but a higher proportion of the Indigenous catch was taken with spears and hand collection methods.

Using all methods, Indigenous fishers harvested more than 3.3 million aquatic animals from the waters of northern Australia. The harvest included approximately 910,000 finfish, 1,100,000 shellfish, 655,000 prawns and yabbies, 181,000 crabs and lobsters, and 98,000 small baitfish. The most prominent finfish species in the Indigenous catch were mullet, catfish, sea perch/snappers, bream and barramundi. Most prominent non-fish species in the Indigenous catch were mussels, cherabin, other bivalves, prawns, oysters and mud crabs. As well, Indigenous fishers harvested a number of species groups that had protected status for non-Indigenous people, including crocodiles, turtles and dugong. A small proportion of the Indigenous catch (1.7%) was returned to the water.

### Reference

Department of Agriculture, Fisheries and Forestry, <<http://www.affa.gov.au/recfishsurvey>>.

## Bibliography

### ABS publications

There are no ABS publications devoted to forestry and fishery statistics for Australia as a whole. Forestry and fishery statistics are available in ABS data which can be obtained on request, or in publications on broader subjects:

*Manufacturing Industry, Australia* (8221.0)

*Manufacturing Production, Australia* (8301.0)

### Other publications

Australian Bureau of Agricultural and Resource Economics

*Australian Fisheries Statistics, 2002*

*Australian Forest Products Statistics* (September and December quarters 2002)

Bureau of Rural Sciences

*Australia's State of the Forests Report, 2003*

*National Forest Inventory, 2003*

*National Plantation Inventory, Annual Update, March 2003*

*NPI Tabular Reports*, various

### Web sites

Australian Government Department of Agriculture, Fisheries and Forestry <<http://www.affa.gov.au>> and <<http://www.affa.gov.au/recfishsurvey>>

Australian Fisheries Management Authority, <<http://www.afma.gov.au>>

Bureau of Rural Sciences, <<http://www.affa.gov.au/ruralscience/html>>

Commonwealth Scientific and Industrial Research Organisation, Forestry and Forest Products, <<http://www.ffp.csiro.au>>

Environment Australia, <<http://www.ea.gov.au>>

FISHBASE, <<http://www.fishbase.org>>



## 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. 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, are included. 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.

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 2001, it had the world's largest economic demonstrated resources of bauxite, lead, mineral sands (ilmenite, rutile and zircon), nickel, silver, tantalum, uranium and zinc. Australia is the largest producer of mineral sands in the world. It is also one of the largest producers of nickel, uranium and zinc, contributing respectively 11%, 27% and 17% of world production in 2001.

The contribution of the mining industry to Australia's gross domestic product has remained around 5% over the last 10 years. From an industry of origin perspective the mining industry is the nation's second largest export earner (after manufacturing), accounting for 27% of the total value of exports in 2002–03, principally from the coal, and oil and gas extraction industries.

The chapter includes an article *Expenditure on land access for mineral exploration, 2001–02*.

## Economic contribution of the mining industry

Production can be measured on a net basis, that is the value of goods and services produced less the value of inputs (e.g. labour, capital) used in production. In national accounting terms, the contribution of an industry to the overall production of goods and services in an economy is measured by industry gross value added (GVA). Industry GVA sums the gross value added by each producer in the industry.

Total production of the mining industry (measured by industry GVA in chain volume terms i.e. 'real' output unaffected by price change) increased by more than two and half times between 1982–83 and 2001–02 (graph 16.1).

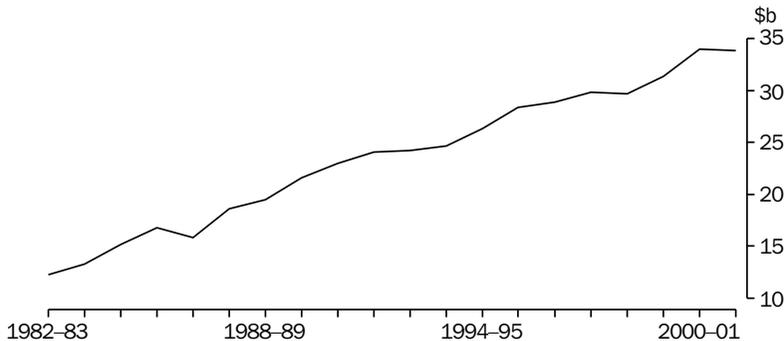
Over the 20-year period, the largest annual decrease (5.6%) in production was in 1986–87 while the largest annual increase (18%) was in

1987–88. By comparison, total economic production in Australia, as measured by gross domestic product (GDP) was relatively steady with annual change varying from a decrease of 3.4% in 1982–83 to an increase of 6.4% in 1987–88.

Overall, the mining industry production more than kept pace with the growth in other industries, resulting in an increase in its contribution to GDP from 3.9% in 1982–83 to 5.3% in 2001–02 (table 16.2). The industry performed better than the manufacturing industry, whose contribution to GDP fell from 16% in 1982–83 to 12% in 2001–02.

Production in the services to mining industry accounts for a small proportion (less than 5%) of total mining production (table 16.2). 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.

**16.1 MINING PRODUCTION(a)**



(a) Industry gross value added. Chain volume measures, reference year is 2000–01.

Source: Australian System of National Accounts, 2001–02 (5204.0).

**16.2 GROSS VALUE ADDED AND CONTRIBUTION TO GDP, Chain volume measures(a)**

	Units	1997–98	1998–99	1999–2000	2000–01	2001–02	Percentage change from 1997–98 to 2001–02
Industry gross value added							
Mining (excl. services to mining)	\$m	28 223	28 407	30 521	32 486	32 492	15.1
Services to mining	\$m	1 483	1 322	1 150	1 489	1 373	-7.4
Total	\$m	29 810	29 686	31 383	33 975	33 865	13.6
Contribution to GDP	%	5.5	5.2	5.2	5.6	5.3	..

(a) Reference year for chain volume measures is 2000–01.

Source: Australian System of National Accounts, 2001–02 (5204.0).

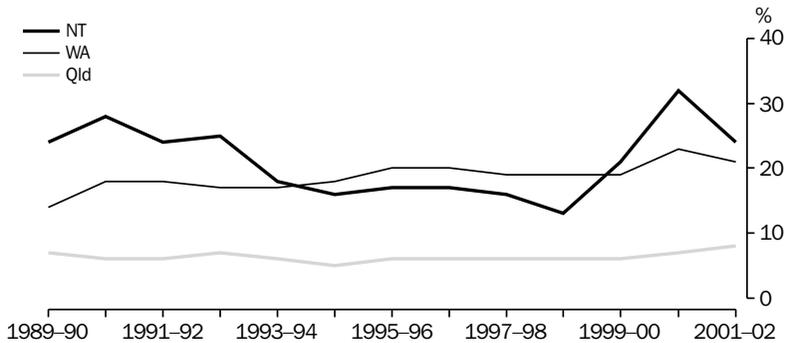
The importance of the mining industry in terms of production as measured by total factor income varies across the states and territories. (Total factor income is a measure of state production. It is the total payments received by labour and owners of capital used in the production of the goods and services.) Mining production was the largest component of total 2001–02 production in Western Australia and the Northern Territory. It was the third largest in Queensland. In other states, manufacturing, and property and business services industries were much larger than mining, and mining was ranked seventh or lower in terms of production.

The Northern Territory experienced significant changes in the contribution of the mining industry to total state production, varying from 13% in 1998–99 to 32% in 2000–01 (graph 16.3). In all years except 1998–99, the mining industry’s share of total state production was at least 40% larger than the contribution of the next largest industry. In 2001–02, the mining industry accounted for 24% of total production in the Northern Territory with increasing mining activity in the offshore areas in the Timor Sea. The main mining industry is crude oil production which contributed 48% (\$1,518m) of the value of production in the territory in 2001–02 (see the Department of Business Industry and Resource Development, Northern Territory, <<http://www.dme.nt.gov.au>> ,

table ‘Northern Territory Mining Production Production 2001–02’ last viewed 31 October 2003).

In Western Australia, the contribution of the mining industry had steadily increased from 14% in 1989–90 to 23% in 2000–01, before falling to 21% in 2001–02 (graph 16.3). In this period, it was significantly higher than the production shares of manufacturing, or property and business services industries, the next largest industries. The oil and gas industry was the major contributor to mining production. In 2001–02, the combined value of production for oil and gas accounted for 36% (\$9,532m) of the total value of production (\$26,272m) in the state including some manufactured and semi-manufactured products like aluminium (see the Western Australia Department of Industry and Resources <<http://www.doir.wa.gov.au/statistics>> , publication Western Australia Mineral and Petroleum Statistics Digest, 2001–02 last viewed 31 October 2003). Most crude oil and condensate and liquefied natural gas (LNG) are produced in the Carnarvon basin where the North West Shelf Project is located. In 2002, Western Australia contributed 55% of the crude oil and condensate and 100% of LNG in terms of quantity produced in Australia. The state also produced 97% of the iron ore and 70% of the diamonds produced in Australia.

**16.3 MINING’S 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).

Over the period 1989–90 to 2001–02, the mining industry's share of total state production was 5% to 8% for Queensland (graph 16.3). This was two to six percentage points lower than manufacturing industry's share of total state production. The mining industry had the third largest share (8%) of production in Queensland in 2001–02, after manufacturing (12%) and property and business services (9%). Figures released by the Queensland Department of Natural Resources and Mines indicate the value of production of fuel minerals was estimated to be \$6,859m in 2001–02 with black coal accounting for 91% (\$6,234m) of this value (see <<http://www.nrm.qld.gov.au/mines>>, table 'Queensland Production Statistics', last viewed 31 October 2003). The state is the largest producer of black coal in the country. The production of copper, lead and zinc valued at \$2,951m accounted for 27% of the total value of production of metallic, fuel and industrial minerals (\$10,913m).

## Exports

An indication of the proportion of exports contributed by the mining industry is presented in table 16.4. This is based on exports by industry of origin.

Between 1992–93 and 2002–03, the value of exports from the mining industry has grown by 102%, or 27 percentage points more than the

growth for the manufacturing industry and 11 percentage points more than for all industries. As a consequence, mining's contribution to total goods exported from Australia increased from 26% in 1992–93 to 27% in 2002–03, while manufacturing's share fell from 62% to 57%.

## Mineral royalties

Royalties paid by mining businesses are collected by state and Northern Territory governments for mining onshore and up to three nautical miles offshore, and by the Australian Government outside that area. The basis of the mineral royalties varies between states. Some royalties are based on the value of production at mine site, others on sales value, gross proceeds or profit. The rates imposed also vary between commodities.

Onshore and within coastal waters, royalties are levied on mineral and petroleum production. State petroleum royalties and Commonwealth crude oil excise apply onshore and in coastal waters. Petroleum produced in offshore areas of Australia (but not including the North West Shelf) is generally subject to an offshore Petroleum Resource Rent Tax levied by the Australian Government. Petroleum royalties and crude oil excise apply to the North West Shelf project.

### 16.4 VALUE OF EXPORTS(a), By industry of origin

	Mining \$m	Manufacturing \$m	All industries \$m	Share of total exports	
				Mining %	Manufacturing %
1992–93	15 456	37 551	60 702	25.5	61.9
1993–94	14 554	41 478	64 548	22.5	64.3
1994–95	14 922	43 795	67 052	22.3	65.3
1995–96	16 476	48 787	76 005	21.7	64.2
1996–97	17 937	48 494	78 932	22.7	61.4
1997–98	21 458	53 301	87 768	24.4	60.7
1998–99	20 171	52 073	85 991	23.5	60.6
1999–2000	23 578	57 982	97 286	24.2	59.6
2000–01	31 912	69 128	112 539	26.7	57.8
2001–02	32 507	69 111	121 108	26.8	57.1
2002–03	31 267	65 668	115 445	27.1	56.9

(a) On a 'free-on-board' basis.

Source: ABS data on available request, *International Trade*.

Table 16.5 shows royalties expenses incurred by businesses in the coal, oil and gas extraction, and metal ore mining industries during the period 1991–92 to 2000–01. Royalties paid by businesses in other mining industries are relatively insignificant. Between 1991–92 and 2000–01, businesses engaged in oil and gas extraction consistently accounted for most of these expenses with proportions varying from 51% in 1998–99 to 74% in 1993–94. Royalty payments by businesses engaged in oil and gas extraction increased by 70% over the 10-year period and payments by businesses in the coal mining industry doubled.

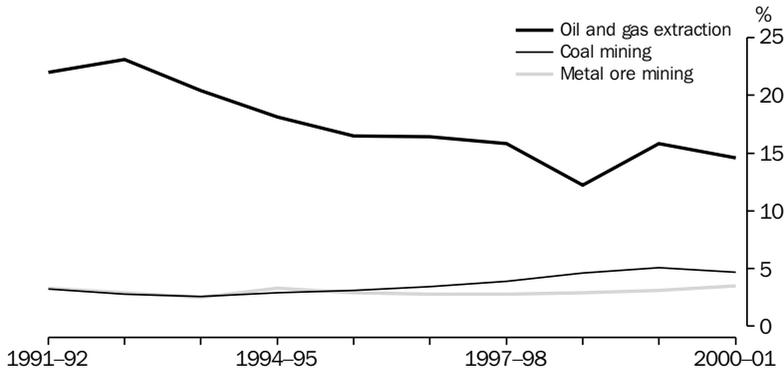
Graph 16.6 shows the amount paid in royalties by mining industries as a proportion of the income received from sales of goods and services. Over the period 1991–92 to 2000–01, businesses in the oil and gas extraction industry paid a considerably higher proportion of royalties compared to those in coal or metal ore mining industries, although the difference had reduced from 19 percentage points in 1991–92 to around 10 percentage points in 2000–01.

**16.5 ROYALTY EXPENSES, By selected industries**

	Units	Coal mining	Oil and gas extraction	Metal ore mining	Total
1991–92	\$m	270.3	1 626.5	374.4	2 271.2
1992–93	\$m	246.6	1 787.8	325.8	2 360.1
1993–94	\$m	236.1	1 508.0	302.8	2 046.9
1994–95	\$m	262.5	1 277.1	410.8	1 950.4
1995–96	\$m	314.0	1 264.2	422.8	2 001.0
1996–97	\$m	358.1	1 504.1	406.1	2 268.3
1997–98	\$m	461.7	1 514.4	452.6	2 428.7
1998–99	\$m	529.3	1 049.5	479.8	2 058.6
1999–2000	\$m	542.6	1 760.6	485.2	2 788.4
2000–01	\$m	551.2	2 760.7	654.8	3 966.7
Change from 1991–92 to 2000–01	%	103.9	69.7	74.9	74.7

Source: Australian Mining Industry (8414.0); Mining Operations, Australia (8415.0).

**16.6 PROPORTION OF ROYALTIES EXPENSES TO SALES OF GOODS AND SERVICES**



Source: Australian Mining Industry (8414.0); Mining Operations, Australia (8415.0).

## Mineral and petroleum resources

The statistics of available mineral resources provided in table 16.7 are obtained from the annual publication *Australia's Identified Mineral Resources* 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.

Australia has the world's largest EDR of bauxite, lead, mineral sands (ilmenite, rutile and zircon), nickel, silver, tantalum, uranium and zinc and ranks second in the world for recoverable brown coal with a share of 20%. In addition, Australia's EDR for copper, industrial diamonds and gold are also rated the third largest in the world. Table 16.7 shows the importance, in a global sense, of the main mineral resources in Australia.

**16.7 ECONOMIC DEMONSTRATED RESOURCES OF MAJOR MINERALS — December 2001**

Mineral	Quantity	Australia	World	Australia as proportion of World EDR	Australia's ranking in World holdings of EDR
Bauxite	Gt	4.6	24	19	1st
Black coal					
In situ	Gt	60.0	n.a.	n.a.	n.a.
Recoverable	Gt	40.8	788	5	6th
Brown coal					
In situ	Gt	41.9	n.a.	n.a.	n.a.
Recoverable	Gt	37.7	188	20	2nd
Copper(b)	Mt Cu	24.2	355	7	3rd
Diamonds					
Gem and near gem	Mc	79.2	n.a.	n.a.	n.a.
Industrial	Mc	82.4	580	14	3rd
Gold(b)	t Au	5 156	50 156	10	3rd
Iron ore	Gt	12.4	133.6	9	4th
Lead(b)	Mt Pb	17.3	64	27	1st
Lithium(b)	kt Li	152	3 403	4	(a)
Manganese ore	Mt	125	1 878	7	4th
Mineral sands					
Ilmenite	Mt	202	639	32	1st
Rutile	Mt	22	49.8	44	1st
Zircon	Mt	30	71	42	1st
Nickel(b)	Mt Ni	21.9	59.9	37	1st
Silver(b)	kt Ag	41.4	280	15	1st
Tantalum(b)	kt Ta	40.8	43.8	93	1st
Uranium(b)	kt U	648	1 564	41	1st
Vanadium(b)	kt V	267	10 000	3	n.a.
Zinc(b)	Mt Zn	35.1	190	18	1st

(a) According to United States Geological Survey estimates, Chile holds about 88% of the world's lithium resources, followed by Canada with just over 5% and Australia with just under 5%. However, resource data are not available for some important producing countries including Argentina, China and Russia. Lithium brine resources, now the dominant feedstock for lithium carbonate production, are produced dominantly by Chile. Canada and Australia have the most significant resources of lithium minerals.

(b) Quantity measured in contained metal.

Source: Geoscience Australia, 'Australia's Identified Mineral Resources, 2002'.

During the 12-month period ended December 2001, significant increases in Australia's EDR were recorded for vanadium (42%), tantalum (41%), silver (29%), lead (19%) and nickel (10%) (table 16.8). The following factors contribute to these increases:

- Despite increased production a doubling of the resource base at Wodgina in Western Australia from 13,507 tonnes (t) to 27,216 t of tantalum pentoxide consolidated Australia's position as the world's largest holder of tantalum resources.
- The increase in total EDR for vanadium is due to the reassessment of the resources in the Windimurra deposit in Western Australia. This deposit contains 97% of Australia's EDR.
- The EDR for silver increased due primarily to an increase in Queensland's EDR from 20.7 megatonnes (Mt) to 28.7 Mt. Queensland's share of total EDR increased from 64% in 2000 to 69% in 2001.
- All states with EDR for lead recorded increased holdings in 2001 except Tasmania and Western Australia. Queensland retained its premier ranking with 8.8 Mt (51% of EDR) due to increased resource definition at Cannington and Mt Isa.
- The increase of EDR for nickel was due primarily to industry reassessment of resources at existing deposits.

Over this same period, the EDR for diamonds fell by 14% due mainly to production from the Argyle mine. There was also a decline in EDR for iron ore. This decrease was due to a company's reassessment of Robe River deposits.

Australia's petroleum resources encompass crude oil, condensate, naturally occurring liquefied petroleum gas (LPG) and natural gas. EDR for petroleum are resources which 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 foreseeable future.

The information presented in table 16.9 is obtained from the annual publication, *Oil and Gas Resources of Australia*, produced by Geoscience Australia. The table shows the change in petroleum reserves over the period 1998 to 2001. EDR for crude oil reserves were declining (down 32%) while reserves for sales gas had increased significantly (EDR increased 51%, SDR increased 25%) due mainly to discoveries of major gas resources off north western Australia. Discoveries of crude oil reserves had not been sufficient to offset the reduction in crude oil reserves through production. Unlike crude oil, discoveries have increased the EDR for condensate by 44% and its SDR by 23%.

## 16.8 ECONOMIC DEMONSTRATED RESOURCES OF SELECTED MINERALS

Mineral	Quantity	Australia			World		
		2000	2001	% change	2000	2001	% change
Bauxite	Gt	4.4	4.6	4.5	25	24	-4.0
Coal	Gt	80.3	78.5	-2.2	959	976	1.8
Copper(a)	Mt Cu	24.1	24.2	0.4	340	355	4.4
Diamonds	Mc	188.7	161.6	-14.4	580	580	—
Gold(a)	t Au	4 959	5 156	4.0	48 959	50 156	2.4
Iron ore	Gt	13.6	12.4	-8.8	135.6	133.6	-1.5
Lead(a)	Mt Pb	14.6	17.3	18.5	64	64	—
Lithium(a)	kt Li	157	152	-3.2	3 400	3 403	0.1
Manganese ore	Mt	128	125	-2.3	1 871	1 878	0.4
Mineral sands	Mt	246	254	3.3	789.6	759.8	-3.8
Nickel(a)	Mt Ni	20.0	21.9	9.5	58.2	59.9	2.9
Silver(a)	kt Ag	32.1	41.4	29.0	280	280	—
Tantalum(a)	kt Ta	29	40.8	40.7	32.3	43.8	35.6
Uranium(a)	kt U	654	648	-0.9	1 570	1 564	-0.4
Vanadium(a)	kt V	188	267	42.0	10 000	10 000	—
Zinc(a)	Mt Zn	33	35.1	6.4	190	190	—

(a) Quantity measured in contained metal.

Source: Geoscience Australia, 'Australia's Identified Mineral Resources', 2001 and 2002 issues.

## 16.9 PETROLEUM RESOURCES

	Crude oil		Condensate		LPG		Sales gas	
	gigalitres	million barrels	gigalitres	million barrels	gigalitres	million barrels	billion cubic feet	trillion cubic feet
<b>Economic demonstrated resources</b>								
1 January 1998	266	1 674	192	1 209	184	1 157	1 494	53
1 January 1999	243	1 528	273	1 715	243	1 527	1 989	70
1 January 2000	219	1 378	283	1 780	274	1 726	2 105	74
1 January 2001	180	1 129	276	1 735	274	1 725	2 256	80
<b>Subeconomic demonstrated resources</b>								
1 January 1998	15	97	87	549	129	808	1 285	45
1 January 1999	31	196	54	338	71	447	869	31
1 January 2000	55	345	61	384	75	471	1 173	41
1 January 2001	61	386	107	673	73	460	1 610	57

Source: Geoscience Australia, 'Oil and Gas Resources of Australia', 1999, 2000 and 2001 issues.

## Expenditure on mineral and petroleum exploration

Exploration involves the search for new ore occurrences or undiscovered oil or gas, and/or appraisal intended to delineate or greatly extend the limits of known deposits of minerals or oil or gas reservoirs by geological, geophysical, geochemical, drilling or other methods. This includes construction of shafts and adits primarily for exploration purposes, but excludes activity of a developmental or production nature.

Expenditure in Australia during the last five years on mineral exploration other than for petroleum and water is summarised in table 16.10.

Mineral exploration expenditure in 2001–02 was \$641m. This was \$426m (40%) lower than in 1997–98, and \$43m (1%) lower than in 2000–01 reflecting a worldwide decline in exploration expenditure. Western Australia, Queensland and New South Wales, with expenditure lower by

\$279m (42%), \$41m (31%) and \$40m (45%) respectively, were the main contributors to the fall between 1997–98 and 2001–02. Western Australia continued to account for the majority (60–62%) of the exploration expenditure over this period, followed by Queensland (11–15%).

Most of the expenditure between 1997–98 and 2001–02 was related to exploration for gold, as shown in table 16.11. In this period, gold exploration expenditure accounted for 52–63% of total mineral exploration expenditure. Its decline from \$648m to \$331m (down 49%) was the main contributing factor to the fall in mineral exploration expenditure. The long-term decline in gold prices was the principal reason for the decrease in gold exploration expenditure. Expenditure on selected base metals also fell by \$94m (42%) while expenditure on uranium fell by 61%, the largest fall recorded for this period. Exploration expenditure for mineral sands increased by 137%, growing steadily over the period.

## 16.10 MINERAL EXPLORATION EXPENDITURE, By state and territory

	1997–98	1998–99	1999–2000	2000–01	2001–02	Change from 1997–98 to 2001–02
	\$m	\$m	\$m	\$m	\$m	%
New South Wales	88.2	65.6	56.1	57.2	48.2	-45.4
Victoria	43.1	37.0	33.8	32.7	33.9	-21.3
Queensland	133.2	93.8	82.6	83.1	92.6	-30.5
South Australia	45.0	41.9	22.6	29.6	32.1	-28.7
Western Australia	660.4	523.1	415.0	424.1	381.1	-42.3
Tasmania	20.7	11.9	8.8	9.2	4.0	-80.7
Northern Territory	75.9	64.5	57.5	47.5	48.5	-36.1
<b>Australia</b>	<b>1 066.8</b>	<b>837.8</b>	<b>676.3</b>	<b>683.3</b>	<b>640.6</b>	<b>-40.1</b>

Source: Mineral and Petroleum Exploration, Australia (8412.0).

### 16.11 MINERAL EXPLORATION EXPENDITURE, By mineral sought

	1997-98	1998-99	1999-2000	2000-01	2001-02	Change from 1997-98 to 2001-02
	\$m	\$m	\$m	\$m	\$m	%
Selected base metals	227.1	176.9	156.8	165.4	132.8	-41.5
Copper	n.a.	n.a.	28.4	32.8	41.5	..
Silver, lead-zinc	n.a.	n.a.	55.4	59.8	37.7	..
Nickel, cobalt	n.a.	n.a.	73.0	72.8	53.7	..
Gold	648.4	486.1	374.8	370.2	331.3	-48.9
Iron ore	30.0	41.5	29.7	23.4	25.2	-16.0
Mineral sands	14.0	19.0	21.5	23.6	33.2	137.1
Uranium	22.2	15.4	11.7	8.4	8.7	-60.8
Coal	64.8	39.9	35.4	41.3	50.4	-22.2
Diamonds	42.8	40.9	29.8	31.8	35.4	-17.3
Other(a)	17.5	18.0	16.7	19.3	23.5	34.3
<b>Australia</b>	<b>1 066.8</b>	<b>837.8</b>	<b>676.3</b>	<b>683.3</b>	<b>640.6</b>	<b>-40.0</b>

(a) Includes tin, tungsten, scheelite, wolfram and construction materials.

Source: *Mineral and Petroleum Exploration, Australia (8412.0)*.

Table 16.12 shows the overseas exploration expenditure reported in the Minerals Industry Surveys undertaken by the Minerals Council of Australia (MCA) for 1997-98 to 2001-02. The surveys cover Australian mining companies, and some overseas controlled companies. Findings from these surveys indicate total overseas exploration expenditure by Australian businesses had been falling after reaching its peak in 1996-97 when \$506m was spent. Between 1997-98 and 2001-02, expenditure fell by 71%. This mainly reflected the fall in exploration expenditure for gold and platinum which accounted for most of the overseas exploration expenditure in the earlier years. By 2001-02, expenditure overseas on gold

and platinum exploration, was only 19% of the level achieved in 1997-98. Gold and platinum's share of total overseas exploration expenditure declined from 53% in 1997-98 to 34% in 2001-02, below base metals' share of 39%.

Over the period 1997-98 to 2001-02, expenditure on petroleum exploration fell by 3.9% (\$36m) in spite of a sharp upsurge of 46% (\$324m) in 2000-01 (table 16.13). This overall decline was due to a decrease in onshore expenditure of 29% (\$68m). With offshore exploration expenditure increasing by 4.7%, onshore exploration's share of total expenditure fell from 25% in 1997-98 to 19% in 2001-02.

### 16.12 OVERSEAS MINERAL EXPLORATION EXPENDITURE, By mineral sought

	1997-98	1998-99	1999-2000	2000-01	2001-02	Change from 1997-98 to 2001-02
	\$m	\$m	\$m	\$m	\$m	%
Gold and platinum	239.4	177.8	117.3	77.2	45.3	-81.1
Base metals	131.1	154.0	82.8	61.8	51.5	-60.7
Mineral sands	10.5	3.1	1.8	2.4	2.4	-77.1
Diamonds	26.5	33.8	26.3	33.1	31.1	17.4
Coal	5.6	1.0	11.8	0.0	0.0	-100.0
Other	37.2	48.2	10.0	6.1	3.0	-91.9
<b>Australia</b>	<b>450.2</b>	<b>417.9</b>	<b>250.0</b>	<b>180.7</b>	<b>132.4</b>	<b>-70.6</b>

Source: *Minerals Council of Australia, 'Minerals Industry Survey Reports of 1998-99 to 2001-02'*.

### 16.13 PETROLEUM EXPLORATION EXPENDITURE

	1997-98	1998-99	1999-2000	2000-01	2001-02	Change from 1997-98 to 2001-02
	\$m	\$m	\$m	\$m	\$m	%
Onshore	232.3	182.4	110.1	176.9	164.6	-29.1
Offshore	685.9	669.4	590.6	847.9	718.1	4.7
<b>Total</b>	<b>918.2</b>	<b>851.8</b>	<b>700.7</b>	<b>1 024.8</b>	<b>882.7</b>	<b>-3.9</b>

Source: Mineral and Petroleum Exploration, Australia (8412.0).

## Expenditure on land access for mineral exploration — 2001-02

In recent years the level of mineral exploration activity in Australia has decreased significantly. A number of factors have been suggested for this, including increasing costs associated with access to land for exploration purposes. There are concerns that expenses associated with legislative requirements on native title, environment protection and cultural heritage are adding to the other costs of land access incurred in mineral exploration. For this reason, the issue of the costs of land access has been identified by government and the industry as being an important area for which statistical information is needed.

In 2002, the Ministerial Council on Mineral and Petroleum Resources (MCMPR) through the Department of Industry, Tourism and Resources (DITR) commissioned the Australian Bureau of Statistics (ABS) to undertake a survey to collect land access expenditure for mineral exploration. The initiative was made possible by a DITR Regional Minerals Program (RMP) grant. The RMP sponsors projects that encourage a coordinated approach by industry and government to facilitate regional mining and mineral processing activities.

The survey was supported by the Minerals Council of Australia (MCA) and the Association of Mining and Exploration Companies (Inc.) (AMEC).

Information gained from the survey, which was conducted in respect of 2001-02, will serve to inform the DITR Mineral Exploration Action Agenda process and could support a broader role for the MCMPR in addressing issues associated with land access for mineral exploration.

It should be noted, however, that the survey did not provide any information on how land access expenditure in 2001-02 compared to those in

earlier years, so care should be used in relating the results from the survey to changes in total mineral exploration expenditure over time.

The survey was based on a feasibility study completed in October 2001 which investigated the types of land access expenditure that mineral explorers incurred in accessing land for exploration purposes. It also determined the availability of such information in the exploration industry.

In the 2001-02 land access expenditure survey, about 700 private sector businesses were approached with a mailed questionnaire. These businesses were predominantly sourced from the ABS quarterly Mineral Exploration Survey with supplementation from the MCA, AMEC, Geoscience Australia and the Australian Stock Exchange's new and recent listings. The land access expenditure survey was, in effect, a complete census of mineral exploration undertaken in Australia during 2001-02.

### Definition of land access expenditure

Land access expenditure includes all 2001-02 financial year expenses incurred in obtaining (or attempting to obtain) access to land for mineral exploration purposes. Expenses may include payments made at the commencement of the exploration cycle (such as exploration licence application fees) through to notification, negotiation, and other processes up to the point where access to land is obtained to physically commence the mineral exploration or attempts to access land have been abandoned. Land access expenditure also includes any on-going payments made in 2001-02 for land access (for mineral exploration purposes) for which an agreement had been made prior to 1 July 2001.

## Relationship with Mineral Exploration Survey

The ABS conducts a quarterly Survey of Mineral Exploration. Two of the items collected in this survey are mineral exploration expenditure undertaken on 'production leases' and on 'all other areas'. Production leases are areas where production is underway (mine sites) or where development is taking place. All other areas include exploration leases, and in this article they are referred to as 'non-production leases'. Land access expenditure was collected in the 2001–02 survey in respect of exploration in the areas under non-production leases. The comparisons below are therefore related to mineral exploration expenditure in non-production leases as reported in the quarterly Survey of Mineral Exploration.

When determining the contribution of exploration businesses by size, exploration expenditure collected in the Mineral Exploration Survey was used as a proxy measure of business size.

Exploration businesses in the survey were classified into three size groupings according to their 2001–02 mineral exploration expenditure in non-production leases. These groupings are:

- large businesses with expenditure of \$5m and over
- medium size businesses with expenditure of \$1m to less than \$5m

- small businesses with expenditure of less than \$1m.

## Magnitude of land access expenditure

Mineral exploration land access expenditure amounted to \$38.1m in 2001–02. This represented 7.5% of the total mineral exploration expenditure on Australia's non-production leases in 2001–02. On a regional basis, land access expenditure as a proportion of mineral exploration expenditure was highest in Queensland (9.9%), followed by Northern Territory (8.2%), Western Australia (7.8%), South Australia (7.2%), New South Wales and Tasmania (both 4.3%) and Victoria (2.3%) (table 16.14).

Western Australia contributed the largest share of Australia's land access expenditure at 62.4% (\$23.8m), followed by Queensland with 17.1% (\$6.5m). The shares contributed by the remaining states and territory were significantly lower: Northern Territory (8.4%), South Australia (5.7%), New South Wales (4.5%), Victoria (1.6%) and Tasmania (0.3%).

## Types of land access expenditure

Mineral exploration businesses spent a third (\$12.6m) of their land access expenditure on native title requirements. Most of this (\$8.0m or 63.0%) was incurred on notification, consultation and negotiation expenses (table 16.15).

### 16.14 LAND ACCESS AND MINERAL EXPLORATION EXPENDITURE, Non-production leases — 2001–02

	Land access expenditure	Mineral exploration expenditure	Land access expenditure as a proportion of mineral exploration expenditure
	\$'000	\$'000	%
New South Wales	1 716	40 088	4.3
Victoria	602	26 328	2.3
Queensland	6 515	65 708	9.9
South Australia	2 157	29 943	7.2
Western Australia	23 771	305 233	7.8
Tasmania	120	2 770	4.3
Northern Territory	3 191	39 040	8.2
<b>Australia</b>	<b>38 072</b>	<b>509 110</b>	<b>7.5</b>

Source: Mineral and Petroleum Exploration, Australia, March quarter 2003 (8412.0).

### 16.15 LAND ACCESS EXPENDITURE, By nature of expenditure — 2001–02

	Internal to the business		Outsourced to a third party		Total	
	\$'000	%	\$'000	%	\$'000	%
Native title requirements						
Notification, consultation and negotiation expenses	4 836	12.7	3 124	8.2	7 960	20.9
Compensation expenses	2 456	6.5	..	..	2 456	6.5
Community relations expenses	n.p.	n.p.	n.p.	n.p.	2 177	5.7
Other expenses	n.p.	n.p.	n.p.	n.p.	39	0.1
<i>Total</i>	<b>8 647</b>	<b>22.7</b>	<b>3 985</b>	<b>10.5</b>	<b>12 632</b>	<b>33.2</b>
Other land-holder consultation and negotiation expenses	1 310	3.4	326	0.9	1 636	4.3
Government charges for tenements where exploration access not yet obtained	10 816	28.4	357	0.9	11 173	29.3
Cultural heritage expenses	2 543	6.7	2 496	6.6	5 039	13.2
Tenement management expenses for tenements where exploration access not yet obtained	2 383	6.3	1 722	4.5	4 105	10.8
Environment and rehabilitation bonds expenses	1 460	3.8	861	2.3	2 321	6.1
Other land access expenses	782	2.1	384	1.0	1 166	3.1
<b>Total</b>	<b>27 941</b>	<b>73.4</b>	<b>10 131</b>	<b>26.6</b>	<b>38 072</b>	<b>100.0</b>

Source: Mineral and Petroleum Exploration, Australia, March quarter 2003 (8412.0).

The second largest land access expense item was government charges (\$11.2m or 29.3%). Government charges include application fees, rents and rates incurred by explorers on mineral tenements where access to explore was being negotiated during the 2001–02 financial year.

Cultural heritage expenditure amounted to \$5.0m, which was 13.2% of total land access expenditure.

Mineral exploration businesses spent 26.6% of their land access expenditure on tasks outsourced to third parties (other businesses) during 2001–02. The largest expenditure on outsourced tasks was for native title requirements (\$4.0m), cultural heritage expenses (\$2.5m) and tenement management expenses (\$1.7m).

These three items were also significant in terms of expenditure undertaken by the exploration businesses themselves (internal to the business) with expenditure on native title requirements at \$8.6m, cultural heritage expenses (\$2.5m) and tenement management expenses (\$2.4m). However, these internal expenses were each less than expenses for government charges at \$10.8m.

### Land access expenditure by business size

Large businesses contributed most (39.3%) of the land access expenditure, followed by small businesses (37.0%) and medium size businesses (23.8%) (table 16.16).

In analysing the types of land access expenditure by size of business, the results indicate the larger the business, the more capable it appeared to be in pursuing land access without assistance from other businesses. Outsourcing accounted for 23.6% of land access expenditure for large businesses, 26.3% for medium size businesses and 30.1% for small businesses.

The data also suggest larger businesses were more likely to access land subject to native title. For large businesses, expenditure on native title requirements was 47.3% of their total land access expenditure, while for medium size businesses the figure was 29.8% and for small businesses it was 20.3%. Similarly, cultural heritage expenses amounted to 19.7% of total land access expenditure for large businesses, 7.8% for medium size businesses and 9.8% for small businesses.

Government charges were a large proportion of total land access expenditure for small and medium size businesses (38.5% and 37.7% respectively) while for large businesses they represented 15.7% of total land access expenditure.

**16.16 LAND ACCESS EXPENDITURE, By size of business and nature of expenditure — 2001–02**

	Internal to the business \$'000	Outsourced to a third party \$'000	Total \$'000
<b>SMALL BUSINESSES(a)</b>			
Native title requirements			
Notification, consultation and negotiation expenses	1 145	1 114	2 259
Compensation expenses	481	..	481
Community relations expenses	n.p.	n.p.	98
Other expenses	n.p.	n.p.	25
Total	1 740	1 123	2 863
Other land-holder consultation and negotiation expenses	517	238	755
Government charges for tenements where exploration access not yet obtained	5 104	310	5 414
Cultural heritage expenses	464	920	1 384
Tenement management expenses for tenements where exploration access not yet obtained	1 324	1 137	2 461
Environment and rehabilitation bonds expenses	315	293	608
Other land access expenses	384	210	594
Total	9 848	4 231	14 079
<b>MEDIUM BUSINESSES(b)</b>			
Native title requirements			
Notification, consultation and negotiation expenses	845	970	1 815
Compensation expenses	664	..	664
Community relations expenses	n.p.	n.p.	n.p.
Other expenses	n.p.	n.p.	n.p.
Total	1 698	1 002	2 700
Other land-holder consultation and negotiation expenses	n.p.	n.p.	454
Government charges for tenements where exploration access not yet obtained	n.p.	n.p.	3 412
Cultural heritage expenses	251	454	705
Tenement management expenses for tenements where exploration access not yet obtained	469	482	951
Environment and rehabilitation bonds expenses	290	198	488
Other land access expenses	183	156	339
Total	6 669	2 380	9 049
<b>LARGE BUSINESSES(c)</b>			
Native title requirements			
Notification, consultation and negotiation expenses	2 846	1 040	3 886
Compensation expenses	1 311	..	1 311
Community relations expenses	n.p.	n.p.	n.p.
Other expenses	n.p.	n.p.	n.p.
Total	5 209	1 860	7 069
Other land-holder consultation and negotiation expenses	n.p.	n.p.	427
Government charges for tenements where exploration access not yet obtained	n.p.	n.p.	2 347
Cultural heritage expenses	1 828	1 122	2 950
Tenement management expenses for tenements where exploration access not yet obtained	590	103	693
Environment and rehabilitation bonds expenses	855	370	1 225
Other land access expenses	215	18	233
Total	11 424	3 520	14 944

For footnotes see end of table.

...continued

**16.16 LAND ACCESS EXPENDITURE, By size of business and nature of expenditure — 2001–02**  
— *continued*

	Internal to the business \$'000	Outsourced to a third party \$'000	Total \$'000
<b>ALL BUSINESSES</b>			
Native title requirements			
Notification, consultation and negotiation expenses	4 836	3 124	7 960
Compensation expenses	2 456	..	2 456
Community relations expenses	n.p.	n.p.	2 177
Other expenses	n.p.	n.p.	39
Total	8 647	3 985	12 632
Other land-holder consultation and negotiation expenses	1 310	326	1 636
Government charges for tenements where exploration access not yet obtained	10 816	357	11 173
Cultural heritage expenses	2 543	2 496	5 039
Tenement management expenses for tenements where exploration access not yet obtained	2 383	1 722	4 105
Environment and rehabilitation bonds expenses	1 460	861	2 321
Other land access expenses	782	384	1 166
<b>Total</b>	<b>27 941</b>	<b>10 131</b>	<b>38 072</b>

(a) Small businesses are those with exploration expenditure less than \$1m. (b) Medium size businesses are those with exploration expenditure of \$1m but less than \$5m. (c) Large businesses are those with exploration expenditure of \$5m or more.

Source: *Mineral and Petroleum Exploration, Australia, March quarter 2003 (8412.0)*.

## Structure and performance of the mining industry

The source for the statistics used in this section is the annual Economic Activity Survey of employing businesses conducted by the ABS. This collection is a combination of censuses and sample surveys encompassing the mining industry as well as other industries in the economy. Businesses in this collection are classified on the basis of their predominant activity, using the 1993 version of the Australian and New Zealand Standard Industrial Classification (ANZSIC). The industry 'Other mining' refers to construction material mining and mining n.e.c. as described in ANZSIC.

At 30 June 2001, mining businesses (including those that provide services to mining) employed 66,700 persons. During 2000–01, those businesses paid \$5,229m in wages and salaries, generated \$54,032m in sales and service income and \$33,958m industry value added.

In 2000–01, the oil and gas extraction industry's share of total mining production, measured in industry value added terms, was the largest of the mining industries. Industry value added

represents the value added by an industry to the intermediate inputs used by the industry. Oil and gas extraction businesses accounted for 50% of total production (table 16.17); other industry contributors were metal ore mining (28%), coal mining (17%), and other mining and services to mining (5.4% combined).

Metal ore mining industries accounted for 35% of total mining employment. Coal mining was the next largest industry with 26%. Services to mining was also significant in terms of employment with 21% of total mining employment. The oil and gas extraction industry accounted for 10% of total employment in 2000–01.

Capital expenditure in 2000–01 was largest in the metal ore mining industry (\$1,937m). Most of this was spent on plant, machinery and other equipment (56%) while a significant amount was also spent on dwellings, and other buildings and structures (42%). The oil and gas extraction industry had the largest expenditure on dwellings, and other buildings and structures (\$1,118m) (table 16.18).

## 16.17 SUMMARY OF OPERATIONS — 2000-01

Industry	Employment at 30 June(a) no.	Wages and salaries(b) \$m	Sales of goods and services \$m	Operating profit before tax \$m	Inventories		Purchases and selected expenses \$m	Industry value added \$m	Net worth \$m
					Open \$m	Close \$m			
Coal mining	17 256	1 640.7	11 654.2	1 839.7	873.2	689.4	6 151.7	5 624.9	7 755.9
Oil and gas extraction	6 714	709.9	18 886.6	10 787.6	353.4	365.1	2 695.8	16 907.4	21 372.3
<b>Metal ore mining(c)</b>									
Iron ore mining	4 525	412.2	4 791.1	1 847.1	454.8	309.8	1 621.6	3 211.6	4 989.6
Copper ore mining	3 864	289.5	3 295.1	665.0	421.6	444.6	1 908.3	1 526.2	1 643.8
Gold ore mining	8 096	481.1	4 652.5	278.1	554.6	397.8	3 090.3	1 833.2	3 852.4
Mineral sand mining	1 679	76.7	1 031.5	379.3	218.1	214.5	445.2	599.8	832.7
Silver-lead-zinc ore mining	2 265	215.7	2 144.0	45.9	165.1	151.8	1 272.5	911.8	691.5
Other(d)	2 628	221.6	2 931.3	722.0	458.3	462.8	1 481.7	1 518.1	-376.3
<b>Total</b>	<b>23 057</b>	<b>1 696.8</b>	<b>18 845.5</b>	<b>3 937.4</b>	<b>2 272.5</b>	<b>1 981.3</b>	<b>9 819.6</b>	<b>9 600.7</b>	<b>11 633.7</b>
Other mining	5 827	296.2	1 836.9	228.1	248.6	222.3	978.2	891.0	1 344.1
Services to mining	13 823	885.3	2 808.3	-671.9	260.6	237.5	2 180.4	934.2	1 602.3
<b>Total mining</b>	<b>66 677</b>	<b>5 228.9</b>	<b>54 031.5</b>	<b>16 120.9</b>	<b>4 008.3</b>	<b>3 495.6</b>	<b>21 825.7</b>	<b>33 958.2</b>	<b>43 708.7</b>
Total mining 1999-2000	64 061	4 807.9	41 755.9	7 851.9	3 897.3	4 145.6	19 579.2	24 412.0	38 770.3

(a) Includes working proprietors. (b) Excludes the drawings of working proprietors. (c) Excludes bauxite. Data for bauxite mining are not available as this activity is an integral part of businesses producing alumina. The majority of the bauxite mined in Australia is used to produce alumina. Alumina production is classified to manufacturing ANZSIC Class 2721. (d) Includes ANZSIC Classes 1316 (Nickel ore mining) and 1319 (Metal ore mining n.e.c.).

Source: *Mining Operations, Australia, 2000-01 (8415.0)*.

## 16.18 FIXED CAPITAL EXPENDITURE AND DISPOSALS — 2000-01

Industry	Capital expenditure on						Net capital expenditure \$m
	Land \$m	Dwelling, other buildings and structures \$m	Plant, machinery and equipment \$m	Total acquisitions \$m	Disposal of assets \$m		
Coal mining	129.4	178.9	758.9	1 067.2	278.2		788.9
Oil and gas extraction	0.6	1 117.8	591.3	1 709.6	334.1		1 375.6
<b>Metal ore mining(a)</b>							
Iron ore mining	14.4	109.4	149.6	273.4	28.6		244.8
Copper ore mining	0.8	168.3	235.6	404.7	12.0		392.7
Gold ore mining	21.0	298.1	312.3	631.4	126.7		504.7
Mineral sand mining	5.7	15.5	189.3	210.5	13.2		197.3
Silver-lead-zinc ore mining	0.9	160.5	129.6	291.1	8.5		282.5
Other(b)	1.4	54.0	70.2	125.7	25.3		100.4
<b>Total</b>	<b>44.2</b>	<b>805.8</b>	<b>1 086.6</b>	<b>1 936.8</b>	<b>214.3</b>		<b>1 722.4</b>
Other mining	2.7	18.8	141.9	163.4	12.6		150.8
Services to mining	13.6	43.7	235.6	292.9	150.8		142.1
<b>Total mining</b>	<b>190.5</b>	<b>2 165.0</b>	<b>2 814.3</b>	<b>5 169.9</b>	<b>990.0</b>		<b>4 179.8</b>
Total mining 1999-2000	112.3	3 126.6	4 167.0	7 405.6	997.7		6 408.2

(a) Excludes bauxite. Data for bauxite mining are not available as this activity is an integral part of businesses producing alumina. The majority of the bauxite mined in Australia is used to produce alumina. Alumina production is classified to manufacturing ANZSIC Class 2721. (b) Includes ANZSIC Classes 1316 (Nickel ore mining) and 1319 (Metal ore mining n.e.c.).

Source: *Mining Operations, Australia, 2000-01 (8415.0)*.

Table 16.19 provides the average value of selected labour costs per person employed in each of the coal mining, oil and gas extraction and metal ore mining industries. Selected labour costs are the sum of wages and salaries, superannuation and worker's compensation costs.

In 2000–01, selected labour costs per person employed was the highest for the oil and gas extraction industry (\$111,500) when compared to other mining industries. Between 1995–96 and 2000–01, the metal ore mining industry had the greatest percentage increase in selected labour costs per person employed of the three mining industries shown in the table; however it maintained its position as the lowest of the three in regard to selected labour costs per person employed.

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).

Over the period 1997–98 to 2000–01, OPBT for the mining industry increased by 137% (up \$9,332m). The oil and gas extraction industry

was the main contributor to this rise (up 150% or \$6,472m). The metal ore mining industry (up 107% or \$2,039m) and the coal mining industry (up 111% or \$970m) also recorded significant increases over the same period (table 16.20).

The most significant growth in the mining industry occurred in 2000–01 when OPBT increased 105% to \$16,121m. This increase was mainly due to the oil and gas extraction industry where profit increased by 150%. Profit for metal ore mining and coal mining also increased significantly (105% and 46% respectively).

## Research and development expenditure (R&D)

The mining industry has been spending increasing amounts of R&D expenditure. Over the period 1992–93 to 2001–02, expenditure has increased by 203% from \$176m in 1992–93 to \$534m in 2001–02. At the end of this period, mining accounted for 9.6% of total R&D expenditure by all industries in comparison to 6.2% in 1992–93. The manufacturing industry's share of total R&D expenditure continued to be the highest, accounting for 43% in 2001–02.

### 16.19 SELECTED LABOUR COSTS PER PERSON EMPLOYED

Industry	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	Change from 1995–96 to 2000–01
	\$'000/ person employed	\$'000/ person employed	\$'000/ person employed	\$'000/ person employed	\$'000/ person employed	\$'000/ person employed	%
Coal mining	87.7	89.5	109.3	105.3	103.7	107.2	22.2
Oil and gas extraction	92.9	101.8	96.8	102.0	108.7	111.5	20.0
Metal ore mining	64.1	67.4	73.0	75.7	76.1	80.6	25.7

Source: Australian Mining Industry (8414.0); Mining Operations, Australia (8415.0).

### 16.20 OPERATING PROFIT BEFORE TAX

Industry	1997–98	1998–99	1999–2000	2000–01	Change from 1997–98 to 2000–01
	\$m	\$m	\$m	\$m	%
Coal mining	870	1 885	1 260	1 840	111
Oil and gas extraction	4 316	2 722	4 320	10 788	150
Metal ore mining	1 900	2 496	1 918	3 937	107
Other mining and services to mining	-297	187	355	-444	-49
<b>Total</b>	<b>6 789</b>	<b>7 290</b>	<b>7 852</b>	<b>16 121</b>	<b>137</b>

Source: Australian Mining Industry (8414.0); Mining Operations, Australia (8415.0).

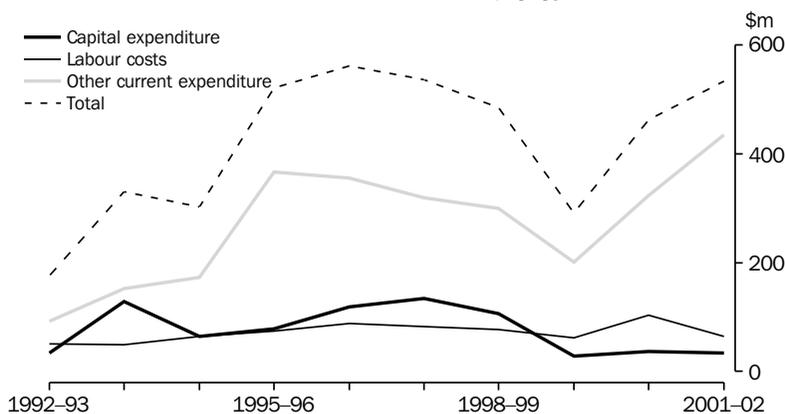
Graph 16.21 shows the type of R&D expenditure by the mining industry. For the period 1992–93 to 2001–02, current expenditure other than labour costs is the major component of R&D expenditure for the mining industry, accounting for 82% of mining R&D expenditure in 2001–02. This category includes expenses on materials, fuels, rent and hiring, repairs and maintenance and data processing etc. and the proportion of expenses on general services and overheads attributable to R&D activity. In the mining industry, these expenses increased by \$343m (373%) from \$92m in 1992–93 to \$435m in 2001–02, while the amount spent on labour and capital fell. As a result, labour cost and capital expenditure as a proportion of total R&D expenditure fell to 12% and 6.4% respectively in 2001–02. For all

industries, other current expenditure of \$2,737m accounted for 49% of total expenditure (\$5,546m) in 2001–02, while labour costs contributed 43% (\$2,398m) and capital expenditure 7.4% (\$410m).

In 2001–02, Queensland accounted for the largest R&D expenditure in the mining industry (41%), followed by Western Australia (23%) and New South Wales (16%). This compares with previous years when Western Australia had the largest expenditure by a wide margin.

The mining industry accounted for a significant proportion of R&D expenditure in Western Australia (30%) and Queensland (30%) compared to 10% nationally, consistent with the importance of the industry to these states.

**16.21 EXPENDITURE ON R&D, By type**



Source: Research and Experimental Development, Businesses, Australia (8104.0).

**16.22 EXPENDITURE ON R&D, By selected locations(a)**

	1997-98		1998-99		1999-2000		2000-01		2001-02	
	Mining '000	All industries '000								
NSW	115 489	1 432 711	91 349	1 391 692	37 265	1 440 297	57 095	1 737 401	84 623	2 070 607
Vic.	32 067	1 444 499	37 940	1 445 212	36 964	1 495 106	31 499	1 718 379	36 176	1 792 740
Qld	123 149	486 278	71 736	437 246	72 642	441 523	116 628	523 953	216 613	722 889
SA	n.p.	241 429	35 072	248 516	20 559	247 342	25 452	295 175	n.p.	364 216
WA	195 735	465 544	214 932	440 177	102 699	336 538	213 426	479 043	122 570	403 628
Other(b)	30 375	122 495	22 368	89 341	17 260	110 832	14 135	99 619	25 206	115 044
Overseas	n.p.	28 105	11 345	42 517	3 882	40 722	4 188	63 788	n.p.	76 411
<b>Total</b>	<b>536 646</b>	<b>4 221 061</b>	<b>484 742</b>	<b>4 094 701</b>	<b>291 271</b>	<b>4 112 360</b>	<b>462 423</b>	<b>4 917 357</b>	<b>533 948</b>	<b>5 545 534</b>

(a) Excludes businesses in Agriculture, forestry and fishing (i.e. in ANZSIC Division A). (b) Other states and territories.

Source: Research and Experimental Development, Businesses, Australia (8104.0).

In 2001–02, the mining industry funded most of its R&D expenditure with \$520m (97%) sourced from money owned by the mining business (own funds). The remaining expenditure is funded from the Australian Government and businesses in other industries. This compares with the total for all industries of which \$4,782m (86%) was sourced from own funds, \$268m (4.8%) from the Australian Government, \$309m (5.6%) from overseas, \$136m (2.5%) from other businesses, and the remainder from state and local government and other Australian (including higher education and private non-profit sectors) sources.

## Environment management

Table 16.23 presents information on the proportion of businesses in each mining industry that reported some type of environment management activity in 2000–01. In that year, 65% of all businesses in the mining industry reported they had some current environment protection expenditure. Metal ore mining was the industry with the highest proportion (72%) of businesses with current environment protection expenditure. Capital environment protection expenditure was reported by 28% of mining businesses, with metal ore mining again recording the greatest proportion (40%). Environment plans were in use by 57% of all mining businesses.

The Minerals Industry Survey report released annually by the MCA includes figures on rehabilitation expenditure, an aspect of environment management carried out after exploration is completed or the mine site has been shut down. These figures represent the amount treated as an expense for the year by the business but not the actual amount paid out for rehabilitation. They cover only part of the industry's total environmental expenditure. Substantial expenditures are often incurred in research, pollution monitoring and control, clean

up and in capital expenditures designed to minimise the environmental impact of mining and minerals processing plant and equipment.

As shown in graph 16.24, expenditure on rehabilitation by the minerals industry declined sharply in 2000–01 after peaking in 1998–99. In 2001–02, rehabilitation expenditure was 17% below peak levels reflecting, to some extent, increasingly targeted, cost effective and efficient rehabilitation methods employed by mining businesses. In 2001–02, this expenditure accounted for 0.7% of total expenses of mining businesses compared to 1.0% in 1998–99.

## Major commodities

### Mineral production

Tables 16.25 and 16.26 show the quantity and value produced for selected minerals. Over the period 1997–98 to 2001–02 the most significant increases in production were for nickel in mine products (55%), copper ore and concentrates (54%), zinc ore and concentrates (38%) and uranium (38%). The sharp increase in nickel production in 2000–01 was driven by increased production in Western Australia which accounts for all Australian production. Increased production was the result of expanded operations and capacity of existing producers, and the start up of new projects.

Diamonds and ilmenite experienced significant production decreases, falling by 29% and 23% respectively between 1997–98 and 2001–02. The production of gold in mine products also fell from 317 t to 264 t (down 17%). In Western Australia, which accounts for about 70% of Australia's gold production, continued rationalisation and amalgamation of gold companies to reduce costs, and closure of projects due to depletion of reserves and/or high operating costs, contributed to the fall in gold production.

**16.23 MINING BUSINESSES WITH ENVIRONMENT MANAGEMENT ACTIVITY — 2000–01**

	Coal mining	Oil and gas extraction	Metal ore mining	Other mining	Total mining
Proportion of businesses in industry subdivision with:	%	%	%	%	%
Current environment protection expenditure	46.5	43.0	72.2	69.1	65.2
Capital environment protection expenditure	24.8	25.4	40.1	24.8	27.8
Environment protection income	11.3	1.9	8.9	8.6	8.6
Environment plans	52.7	52.7	66.4	55.0	56.7
Eco-efficiency savings	32.8	17.4	40.3	23.1	27.3

Source: *Environment Protection, Mining and Manufacturing Industries, Australia, 2000–01 (4603.0)*.

## 16.24 REHABILITATION EXPENDITURE



Source: Minerals Council of Australia, 'Minerals Industry Survey Report, 2000, 2001 and 2002 issues'.

## 16.25 VOLUME OF MINERAL PRODUCTION, Selected minerals

	Units	1997-98	1998-99	1999-2000	2000-01	2001-02	Percentage change from 1997-98 to 2001-02
<b>Metallic minerals</b>							
Bauxite	Mt	44	46	51	55	54	22.7
Copper ore and concentrates	'000 t	1 677	1 864	2 340	2 577	2 590	54.4
Gold in mine products(a)	t	317	303	299	296	264	-16.7
Iron ore and concentrates	Mt	161	153	160	176	185	14.9
Lead ore and concentrates	'000 t	838	963	988	1 000	1 020	21.7
Manganese ore and concentrates	'000 t	1 647	1 630	1 755	1 948	1 779	8.0
Nickel in mine products(a)	'000 t	134	127	141	197	207	54.5
Ilmenite	'000 t	2 392	2 156	2 134	2 092	1 843	-23.0
Rutile	'000 t	247	214	185	209	207	-16.2
Synthetic rutile	'000 t	662	569	566	650	612	-7.6
Titanium dioxide pigment	'000 t	162	164	168	181	186	14.8
Uranium	t	5 788	6 387	8 217	9 549	7 964	37.6
Zinc ore and concentrates	'000 t	1 973	2 139	2 343	2 697	2 715	37.6
Zircon concentrate	'000 t	409	385	372	377	389	-4.9
<b>Coal</b>							
Black coal (saleable)	Mt	222	225	239	258	273	23.0
Brown coal	Mt	64	66	66	65	65	1.6
<b>Oil and gas</b>							
Crude oil and condensate	ML	33 961	27 897	37 447	38 705	36 100	6.3
Natural gas and ethane	Gm3	31	32	33	34	36	16.1
LPG (naturally occurring)	ML	4 901	4 368	4 832	4 558	4 647	-5.2
<b>Other minerals</b>							
Diamonds	'000 ct	43 046	35 948	29 672	22 475	30 676	-28.7
Salt	'000 t	9 035	9 203	9 610	9 492	9 213	2.0

(a) 'in mine products' relates to the metal content of the mineral.

Source: ABARE, 'Australian Mineral Statistics' for figures on copper ore and concentrates, lead ore and concentrates and zinc ore and concentrates; ABARE, 'Australian Commodity Statistics, 2002', for other figures.

Changes in the value of production for selected minerals over the period 1997–98 to 2000–01 are given in table 16.26. The largest increases in the value of production are for zinc ore and concentrate (113%) and lead ore and concentrate (111%), followed by uranium (88%), and copper ore and concentrate (67%). The increases in the value of production for zinc ore and concentrate, and lead ore and concentrate were more than three times the increases in the quantity produced, reflecting the price increases of these minerals over the period.

## Mineral processing and treatment

As few minerals can be directly used in the form in which they are mined, most minerals undergo processing and treatment before use. Most processing and treatment occurs away from the mine site.

Table 16.27 shows the production of the main manufactured products of mineral origin.

**16.26 VALUE OF MINERAL PRODUCTION, Selected minerals(a)**

	1997–98	1998–99	1999–2000	2000–01	Change from 1997–98 to 2000–01
	\$m	\$m	\$m	\$m	%
<b>Metallic minerals</b>					
Copper ore and concentrates	1 376	1 397	1 503	2 303	67.4
Gold bullion	4 972	4 532	3 851	1 189	-76.1
Iron ore and concentrates	3 922	4 307	3 605	4 938	25.9
Lead ore and concentrates	402	525	469	849	111.2
Ilmenite(b)	189	212	288	169	-10.6
Nickel ore and concentrates	n.a.	n.a.	n.a.	1 865	n.a.
Rutile	186	182	184	117	-37.1
Uranium	225	266	325	423	88.0
Zinc ore and concentrates	695	739	934	1 483	113.4
Zircon concentrate	218	179	284	202	-7.3
<b>Coal</b>					
Black coal	9 609	11 611	10 228	11 621	20.9
Brown coal	385	328	n.a.	520	35.1
<b>Petroleum(c)</b>	9 523	8 118	11 295	12 127	27.3
<b>Diamonds</b>	n.a.	n.a.	n.a.	634	n.a.

(a) Gross value ex mine. (b) Excludes value of ilmenite use for beneficiated ilmenite. (c) Includes crude oil and condensate, LPG (naturally occurring), natural gas and ethane.

Source: ABARE, 'Australian Commodity Statistics, 2002'.

## 16.27 PRODUCTION OF PRINCIPAL MANUFACTURED PRODUCTS OF MINERAL ORIGIN

	Units	1997–98	1998–99	1999–2000	2000–01	2001–02
<b>METALS</b>						
<b>Non-ferrous</b>						
Alumina	'000 t	13 581	14 207	15 037	16 098	16 417
Refined aluminium	'000 t	1 589	1 686	1 742	1 788	1 809
Refined copper	'000 t	283	306	477	517	563
Lead bullion	'000 t	171	157	165	153	201
Refined lead	'000 t	185	199	235	215	276
Refined zinc	'000 t	304	323	405	534	572
Refined tin	t	650	595	602	1 039	829
<b>Ferrous</b>						
Raw steel	'000 t	9 143	8 549	8 053	8 003	8 311
<b>Precious</b>						
Refined gold	t	349	419	382	360	347
Refined silver	t	227	410	543	532	616
<b>FUELS</b>						
<b>Petroleum products</b>						
Diesel automotive oil	ML	13 183	12 968	12 737	13 212	13 064
Industrial and marine fuel	ML	48	32	60	98	105
Fuel oil	ML	1 673	1 635	1 839	1 951	1 684
Petrol	ML	18 592	18 705	18 652	17 887	18 000
<b>BUILDING MATERIALS</b>						
Clay bricks	m	1 532	1 594	1 735	1 448	1 514
Portland cement	'000 t	7 236	7 704	7 937	6 821	7 236
<b>CHEMICALS</b>						
Superphosphates	'000 t	1 819	1 464	1 429	1 379	1 585

Source: *Manufacturing Production, Australia (8301.0)*; ABARE, 'Australian Mineral Statistics', various issues.

### Exports of major minerals

Export earnings of minerals from the Australian resources sector fell to \$54.7b in 2001–02, a decrease of \$0.9b on the previous year. The resources sector (which includes minerals and energy resources) includes some products which are refined outside the mining industry (as defined by ANZSIC).

As shown in table 16.28, black coal (including coking and steaming) was the greatest export earner, earning \$13.6b in 2001–02, followed by crude oil and other refinery feedstock (\$6.4b), iron ore and pellets (\$5.2b), refined gold (\$5.0b) and alumina (\$4.1b).

### 16.28 EXPORTS OF MAJOR MINERALS, Value and quantity

	Units		1998-99		1999-2000		2000-01		2001-02	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Alumina	kt	\$m	11 059	2 910	11 654	3 471	12 721	4 507	13 091	4 114
Aluminium (ingot metal)	kt	\$m	1 365	2 840	1 364	3 302	1 471	4 229	1 490	3 965
Coal, black										
Coking	Mt	\$m	85	5 472	97	5 184	106	6 597	106	8 308
Steaming	Mt	\$m	84	3 767	79	3 114	88	4 204	92	5 294
Copper	kt	\$m	529	1 366	582	1 616	694	2 286	749	2 160
Diamonds	'000ct	\$m	51 244	598	51 095	601	25 313	634	25 242	555
Gold, refined	t	\$m	421	6 317	330	4 803	302	4 887	280	4 950
Iron and steel										
Iron ore and pellets	Mt	\$m	135	3 844	149	3 779	157	4 903	156	5 160
Iron and steel	kt	\$m	3 332	1 316	2 941	1 268	2 931	1 543	3 147	1 381
Lead	kt	\$m	620	537	727	607	672	637	731	729
Magnesia	t	\$m	122 777	46	174 854	45	161 236	53	151 760	56
Manganese ore and concentrate	kt	\$m	1 125	165	1 301	185	1 522	261	1 589	290
Petroleum										
Crude oil and other refinery feedstock	ML	\$m	14 291	1 881	20 877	5 292	24 044	8 137	23 936	6 390
LNG	Mt	\$m	8	1 425	8	1 949	8	2 671	8	2 613
LPG	ML	\$m	2 486	297	2 857	648	2 785	830	3 211	721
Salt	kt	\$m	8 710	222	8 389	221	8 636	253	8 912	267
Tin	t	\$m	10 002	73	9 934	70	9 660	76	8 026	49
Titanium minerals										
Ilmenite concentrate	kt	\$m	1 216	142	1 133	151	1 012	154	914	138
Rutile concentrate	kt	\$m	188	148	179	131	190	161	190	167
Uranium oxide	t	\$m	5 989	288	8 025	367	9 722	497	7 367	361
Zinc	kt	\$m	1 126	1 133	1 120	1 233	1 456	1 882	1 488	1 529
Zircon concentrate	kt	\$m	364	187	374	180	375	228	388	274

Source: ABARE, 'Australian Commodity Statistics, 2002'.

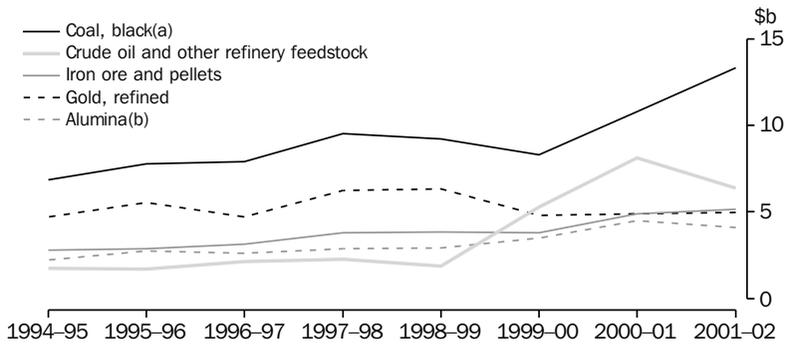
Graph 16.29 shows the value of Australia's five largest mineral exports during the period 1994-95 to 2001-02. The value of crude oil and other refinery feedstock exported increased four-fold between 1998-99 and 2000-01 due to a 68% increase in the volume exported combined with an increase in the world trade weighted average crude oil price from US\$12.31 to US\$26.82 per barrel.

The value of black coal exports rose significantly in both 2000-01 and 2001-02. The increases for coking coal were 26% in 2000-01 and 27% in 2001-02, while steaming coal rose 35% in 2000-01 and 26% in 2001-02. These increases were mainly due to increases in the unit values of exports particularly in 2001-02. In this year, the unit value of coking coal rose by 26% from \$62 to \$78 per Mt with the volume exported remaining at 106 Mt. The unit value of steaming coal also rose by 20% from \$48 to \$58 per Mt.

The major markets for Australian mineral exports are Japan, Singapore, United States of America, Taiwan and the Republic of (South) Korea (graph 16.30). Asia is the most significant region for exports of Australian mineral resources, accounting for 68% (\$32b) of all Australian mineral exports in 2000–01. Of the countries in this region, Japan is the main destination for Australian minerals, with \$15b of export earnings entering the Australian economy in 2000–01. Its share of total exports of minerals was 27%. After Japan, the Republic of (South) Korea, Taiwan and Singapore are the main export destinations. The other significant market is the United States of America, which purchased \$2.1b worth of Australian minerals (4% of the total) in 2000–01.

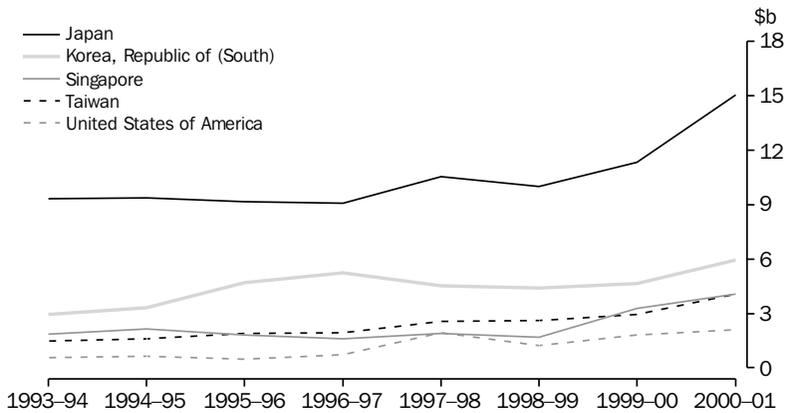
The main mineral exported to Japan is coal. In 2000–01, 50 Mt of steaming coal and 43 Mt of coking coal were sent to Japan (57% and 41% respectively of total Australian exports for these commodities). Japan also imported considerable quantities of crude oil and other refinery feedstock (4,068 megalitres (ML)), LPG (2,241 ML) and iron ore and pellets (67,834 kilotonne (kt)) from Australia. The volumes of LPG, and iron ore and pellets exported to this country were respectively 80% and 43% of Australia's total exports for these commodities.

**16.29 EXPORTS OF SELECTED MINERALS**



(a) Includes coking and steaming coal. (b) Includes aluminium hydroxide.  
Source: ABARE, 'Australian Commodity Statistics, 2002'.

**16.30 EXPORTS OF MINERALS, By country of destination**



Source: ABARE, 'Australian Commodity Statistics, 2002'.

The Republic of (South) Korea and Taiwan were also important markets for Australia's black coal. The steaming coal sent to these destinations amounted to 13 Mt (12% of total exported steaming coal) and 9 Mt (8%) respectively in 2000–01. The Republic of (South) Korea's imports of iron ore and pellets, and crude oil and other refinery feedstock accounted respectively for 14% (22,626 kt) and 18% (4,358 ML) of Australia's exports.

Singapore was one of the major destinations for Australian gold, buying 94 t of Australian gold in 2000–01. This amount was 31% of Australia's gold exports. Singapore was a major market for Australian crude oil and other refinery stock, importing 6,079 ML from Australia in 2000–01, 25% of the total volume exported.

In 2000–01, the United States of America imported a number of minerals from Australia including refined zinc metal (132 kt) and crude oil and other

refinery feedstock (2,962 ML). Imports of zinc metal, and crude oil and other refinery feedstock respectively accounted for 29% and 12% of Australia's exports (in quantity terms) for these commodities.

### Imports of major minerals

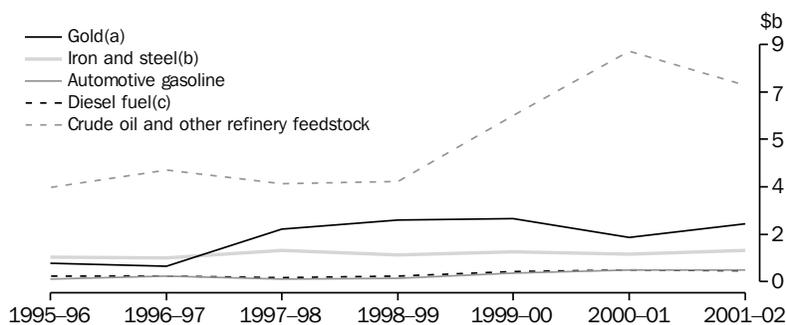
Many imported mineral commodities have had a certain amount of manufacturing applied to their raw forms. Table 16.31 provides details of the major commodities imported over the past five years. In terms of value, the largest imports for 2001–02 were for crude oil and other refinery feedstock (\$7b) followed by gold (\$2b). The major sources of Australian imports of crude oil and other refinery feedstock were Indonesia and Vietnam with a combined value of \$3b (or 45% of the total import value for this commodity).

**16.31 IMPORTS OF MAJOR COMMODITIES, Value and quantity**

	Units		1997–98		1998–99		1999–2000		2000–01		2001–02	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Diamonds	'000 ct	\$m	2 777	170	2 827	162	2 528	210	2 598	249	2 431	255
Gold	n.a.	\$m	n.a.	1 991	n.a.	2 351	n.a.	2 390	n.a.	1 686	n.a.	2 207
Iron and steel												
Iron ore and pellets	kt	\$m	5 351	127	4 429	85	4 460	107	4 658	122	3 880	104
Iron and steel	kt	\$m	1 134	1 061	1 127	940	1 128	1 034	896	923	1 354	1 099
Petroleum												
Crude oil and other refinery feedstock	ML	\$m	25 017	3 707	29 729	3 794	26 936	6 313	26 343	8 753	27 308	7 458
LPG	ML	\$m	511	68	496	64	519	108	633	160	588	116
Automotive gasoline	ML	\$m	483	93	890	134	1 065	321	1 189	432	1 436	448
Diesel fuel	ML	\$m	918	149	1 561	225	2 574	377	1 363	438	823	414
Other refinery products	ML	\$m	1 128	393	581	312	648	325	902	463	n.a.	953
Phosphate rock	kt	\$m	452	30	884	64	756	54	823	62	933	72
Platinum and platinum group metals	kg	\$m	3 536	61	8 329	148	3 199	55	2 158	30	1 652	42

Source: ABARE, 'Australian Commodity Statistics, 2002'.

### 16.32 IMPORTS OF SELECTED MINERAL MINERALS



(a) Refined and unrefined bullion. (b) Includes Iron ore and pellets, and Iron and steel.  
(c) Includes automotive diesel oil, and industrial and marine fuel.

Source: ABARE, *Australian Commodity Statistics*, 2002.

Graph 16.32 shows imports of selected major minerals during the period 1995–96 to 2001–02. A significant amount was spent on crude oil and other refinery feedstock compared to other imported commodities particularly from 1999–2000 to 2001–02. In 2000–01, the import value of crude oil and other refinery feedstock was \$8.8b while the value of the next largest import, gold, was \$1.7b.

While the volumes of imports of crude oil and other refinery feedstock fluctuated over the period 1997–98 to 2001–02, the large changes in the value of imports between 1998–99 and 2001–02 were mainly due to significant unit value rises in 1999–2000 (up 84%) and 2000–01 (up 42%), and a decline in unit value in 2001–02 (down 18%).

### Profile of major commodities

The information in this section has been largely drawn from the publication *Australia's Identified Mineral Resources, 2002* published by Geoscience Australia.

#### Bauxite and alumina

Bauxite is a heterogeneous naturally occurring material from which alumina and aluminium are produced. The principal minerals in bauxite are gibbsite, boehmite and diasporite (which has the same composition as boehmite but is denser and harder).

Australia is the world's largest producer of bauxite and alumina. When exports of bauxite, alumina and aluminium are taken into account, the

aluminium industry is Australia's second largest commodity exporter behind coal, with export earnings approaching \$8.9 b in 2000–01. The industry consists of five bauxite mines, six alumina refineries, six primary aluminium smelters, twelve extrusion mills and two rolled product (sheet, plate and foil) mills.

#### Coal

Black coal is 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 food processing.

Australia has 5% of the world's recoverable black coal EDR, and ranks sixth behind the United States of America (27%), Russia (19%), China (12%), India (10%) and South Africa (6%). Australia produced about 7% of the world's black coal in 2001, ranking it the fourth largest producer after China (27%), United States of America (26%) and India (8%).

Queensland and New South Wales have substantial resources of high quality black coal, which underpin a major export industry. Small but locally significant resources occur in Western Australia, South Australia and Tasmania.

In 2001–02, Australia produced 273.2 Mt of black coal. Of this amount, 197.9 Mt were exported at a value of \$13.3b. Exports of coking coal and steaming coal were 105.5 Mt and 92 Mt respectively. In 2001–02, Australia consumed 66.2 Mt of coal, with the majority of consumption by power stations.

The main brown coal deposits are in Victoria, which is the only state that mines brown coal, mainly for the generation of electricity. In 2001–02, the La Trobe Valley produced 98.5% of Australia's total brown coal production of 66.7 Mt. Smaller deposits occur in South Australia, Western Australia and Tasmania. Briquettes are also produced for industrial and domestic heating in Australia and overseas.

Australia has about 20% of the world's recoverable brown coal EDR, and ranks second behind Germany (23%). It produced 8% of the world's brown coal in 2000, placing it third after Germany (20%) and the United States of America (10%).

## Copper

Australia's major copper mining and smelting operations are at Olympic Dam (South Australia) and Mount Isa (Queensland). Other significant copper producing mines are at Northparkes and Cadia Hill (New South Wales), Ernest Henry, Osborne and Mt Gordon (Queensland), and Golden Grove and Nifty (Western Australia).

Australia has the world's third largest EDR of copper (7%), after Chile (25%) and United States of America (13%). As a copper producer, Australia ranks fourth in the world (after Chile 35%, United States of America 10% and Indonesia 8%), with 6% of world production.

## Diamonds

Diamonds are composed of carbon, and are the hardest known substances. They occur naturally but are extremely rare compared to other minerals. Diamonds are formed deep in the earth and are carried to the surface or near surface by volcanic rocks in narrow cylinder-like bodies called 'pipes'. A large proportion of industrial diamonds are manufactured, and it is also possible to produce synthetic diamonds of gem quality. Uses for diamonds include jewellery, computer chip manufacture, drill bit facing, and stone cutting and polishing.

Australia's EDR of industrial diamond ranks third (14%), after the Democratic Republic of the Congo (Kinshasa) (26%) and Botswana (23%). Detailed data are not available on world resources of gem/near gem diamonds, but Australia has one of the largest stocks for this category.

Australia's diamond production is the largest in the world for natural industrial diamonds and second largest (after Botswana) for gem/near gem diamonds. The majority of Australia's production

comes from the Argyle diamond mine located in the East Kimberley region in Western Australia. This mine is the world's largest diamond mine by volume, with the bulk of output being near gem or industrial diamonds. It is the world's largest supplier of diamonds producing approximately 30 million carats each year, accounting for approximately one-quarter of the world's natural diamond production. The Kimberley Diamond Company, currently Australia's second diamond producer, commenced mining at Ellendale in Western Australia in May 2002.

## 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.

Australia's gold resources occur, and are mined, in all states and the Northern Territory. Based on figures published by the United States Geological Survey (USGS), and modified to incorporate the Australian resources estimates for 2001, Australia has the third largest EDR (10%) after South Africa (38%) and the United States of America (11%).

Western Australia continued to be the dominant producer accounting for 70% of Australian production in 2002. Queensland remained the second largest producer followed by the Northern Territory and New South Wales. Gold is also produced in smaller quantities in Tasmania, Victoria and South Australia.

## Iron ore

Iron ore is the source of primary iron for the world's steel industries. It occurs in all states and the Northern Territory, with about 86% of identified resources in Western Australia, most occurring in the Pilbara region of that state.

Australia has some 9% of world EDR of iron ore and is ranked fourth after China (19%), Russia (19%) and Ukraine (16%). In terms of contained iron, Australia has about 11% of the world's EDR and is ranked fourth behind Russia (21%), Ukraine (18%) and China (11%). Australia produces around 18% of the world's iron ore, and is ranked third behind China (22%) and Brazil (20%).

In 2002, Western Australia produced 97% of the national total. Smaller quantities were produced by South Australia and Tasmania.

## Mineral sands

The principal components of mineral sands are zircon and the titanium minerals rutile and ilmenite. Rutile and ilmenite are used mainly in the production of titanium dioxide pigment. A small portion, less than 4% of total titanium mineral production and typically rutile, is used in making titanium sponge metal. Zircon is an opacifier for glazes on ceramic tiles, and is used in refractories and the foundry industry.

According to data from Geoscience Australia and USGS, Australia has the world's largest EDR of ilmenite, rutile and zircon with 32%, 44% and 42% respectively. In 2001, world production of ilmenite decreased by 2% to 7.29 Mt, rutile by 1% to 379 kt, while zircon increased by 5.6% to 1.07 Mt. Australia produced about 28%, 55% and 37% each of world production of ilmenite, rutile and zircon respectively, and is the leading producer of all three minerals as well as the largest exporter.

EDR of ilmenite continued its increasing trend in 2001, up from 196.0 Mt in 2000 to 201.6 Mt, an increase of 2.8%. Successful exploration on the Douglas Project and Ouyen Project tripled the ilmenite resources of Victoria (almost 4% of the Australian EDR).

EDR of rutile (which includes leucoxene in Western Australia) increased by nearly 3% from 21.9 Mt in 2000 to 22.5 Mt in 2001. All of the increase occurred in the Murray Basin in Victoria (up 34%), New South Wales (up 8%), and South Australia (a thirty-fold increase). Queensland and Western Australia, which together hold 77% of Australia's EDR of rutile, had slight decreases in 2001, due to production.

EDR of zircon rose by nearly 6% from 27.9 Mt in 2000 to 29.6 Mt in 2001. All of the increase was in the Murray Basin particularly in South Australia (a ninety-fold increase), Victoria (85%) and New South Wales (19%).

The bulk of Australia's rutile and zircon production is exported, compared to about 45% of ilmenite. The remaining ilmenite is upgraded to synthetic rutile, which contains 92–93% titanium dioxide.

## Zinc, lead, silver

Zinc is the 23rd most abundant element in the earth's crust. The construction and appliance manufacturing industries use large amounts of zinc, mainly as coatings on steel beams, sheet steel and vehicle panels in the automotive industry.

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, PbS) is usually associated with zinc, silver and sometimes copper, and is extracted as a co-product of these metals. More than half of the lead used today comes from recycling, rather than mining. The largest use is in batteries for vehicles and communications.

The relative scarcity, attractive appearance and malleability of silver has made it suitable for use in jewellery, ornaments and silverware since before Roman times. Its extensive use in coins throughout history has declined over the last 40 years. Silver is mined and produced mainly as a co-product of copper, lead, zinc, and to a lesser extent, gold. Today, photographic paper and film, followed by the electronics and jewellery/tableware industries are the most important users of silver.

Australia has the world's largest EDR of lead (27%), zinc (18%) and silver (15%). As a producer, Australia ranks first in the world for lead, second for zinc (after China) and third for silver after Mexico and Peru.

Australia's total identified resources of zinc (80.8 Mt), lead (50.7 Mt of contained lead) and silver (87.3 kt) all increased slightly in 2001, by 1.4%, 1.3% and 2.2% respectively. In the same period, EDR of zinc (35.1 Mt), lead (17.3 Mt) and silver (41.4 kt) experienced strong growth (7.1%, 18% and 29% increases respectively). These increases were the result of increased resources, reclassification of resources, increased resource definition and growth of existing resources.

In 2001, production of zinc, lead and silver was mainly from mines at Cannington, Century, George Fisher, Hilton and Mount Isa in Queensland; McArthur River in the Northern Territory; Broken Hill and Elura in New South Wales; Rosebery in Tasmania; and Scuddles, Gossan Hill and the Lennard Shelf deposits in Western Australia. Australia's gold mines are significant contributors to silver production.

## Crude oil and condensate

In 2001–02, production of total crude oil and condensate from the North West Shelf and the Gippsland Basin respectively accounted for 38% and 24% of total Australian crude oil and condensate production. The North West Shelf was the major producer of condensate during 2001–02 with 73% of total Australian production sourced from that region.

## **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 2001–02, the major producers were the North West Shelf and the Gippsland Basin accounting for 44% and 39% of total production respectively.

## **Liquefied natural gas (LNG)**

All Australian LNG production comes from the North West Shelf Venture and all is exported. LNG production in 2001–02 was 7.6 Mt, increasing by 5.8% to 8.1 Mt in 2002–03. Export earnings from LNG in 2001–02 remained at \$2.6b.

## **Uranium**

Australia's uranium mining operations are at Ranger (Northern Territory) and Olympic Dam and Beverley (South Australia).

Australia has the world's largest low cost recoverable uranium resources and currently ranks as the world's second largest producer behind Canada. The mineral is exported as uranium concentrates (yellowcake) and is used to generate electricity in nuclear power stations. There are stringent safeguard arrangements in place to ensure the uranium is not diverted from peaceful uses.

## **Tantalum**

Tantalum had been subject to escalating demand during the past decade due to the increased use of tantalum capacitors in mobile phones, computers and video cameras, and tantalum ingots to produce land and air-based turbine alloys.

Australia has the world's largest commercial tantalum resources. Sons of Gwalia Ltd is currently the world's major producer in the form of tantalum concentrates which are exported for further processing to produce tantalum metal powder. The company's Greenbushes and Wodgina (Western Australia) deposits are the largest of their type commercially mined.

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## 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.

Australia has an abundance of fossil fuel and mineral energy resources, and the trends of energy production reflect this abundance. In addition to being one of the world's largest exporters of coal and uranium, Australia's per capita energy consumption is one of the highest in the world, with a heavy reliance on fossil fuels. This reliance is also a major source of greenhouse gases.

The supply and use of energy in Australia is summarised in the following section. Subsequent sections describe Australia's energy resources, the production of these resources, and Australia's trade in energy products. Then follows an analysis of Australian energy consumption, together with a section comparing various aspects of Australia's consumption with that in a number of other Organisation for Economic Co-operation and Development countries. The section, *Energy and the environment*, examines in relationship between energy use and greenhouse gas emissions, focussing on how household consumption indirectly affects the amounts of greenhouse gases emitted.

The chapter concludes with an article *How much energy is used to make a plastic bag?*

## Energy supply and use

Diagram 17.1 presents an overview of energy supply and use in Australia for 2000–01. Australia's total energy supply comprises primary energy production, plus imports of energy, plus stock changes. In 2000–01, Australia produced 15,216 petajoules (PJ) of primary energy products, and imported 1,188 PJ of energy products, mainly crude oil.

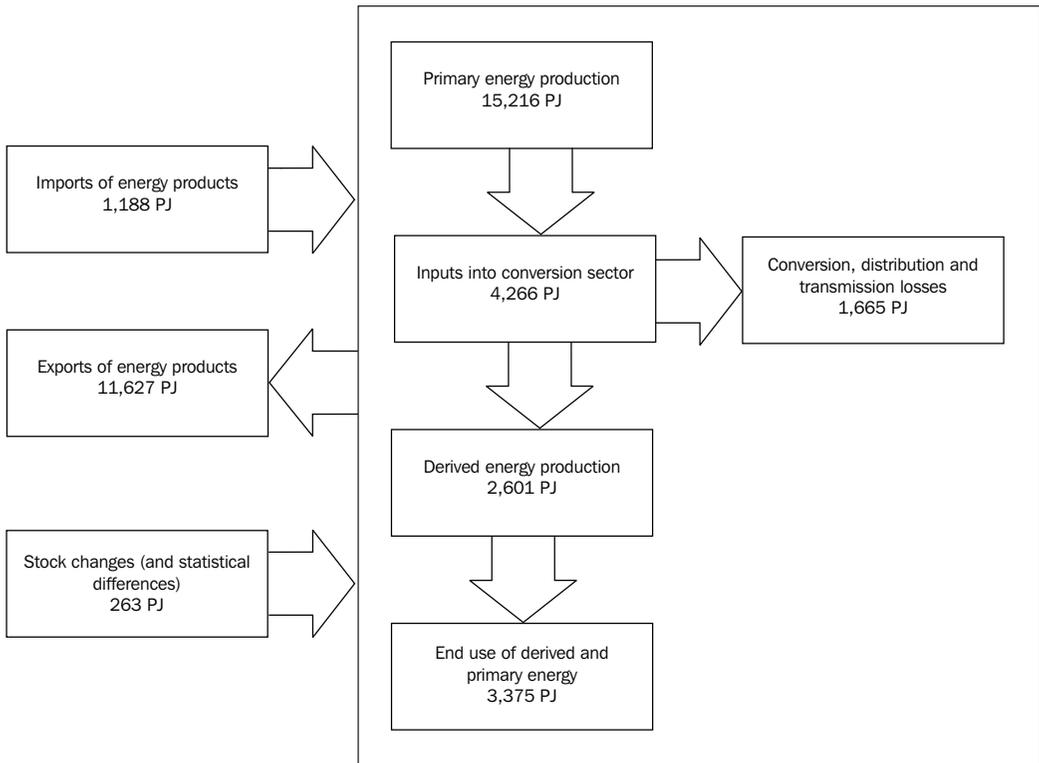
Australia's supply of primary energy products can be exported, converted into other energy products, used by Australian households and industry, or stockpiled for future consumption. Most of the energy produced in Australia is exported (11,627 PJ in 2000–01), the bulk of which is black coal and uranium. In 2000–01, 4,266 PJ of primary energy was transformed into 2,601 PJ of

derived energy products. Conversion, distribution and transmission losses accounted for 1,665 PJ of energy use. Households and industry used 3,375 PJ of energy, about one-fifth of the total energy supply.

## Energy resources

Australia has large identified resources of fossil fuels and uranium. It is ranked in the top six countries in the world for economic demonstrated resources (EDR) of black and brown coal, and has the world's largest EDR of uranium. Australia also has significant reserves of natural gas and crude oil. For a more detailed outline on Australia's energy and mineral resources, see *Chapter 16, Mining*.

### 17.1 ENERGY MODEL — 2000–01



Source: ABARE, electronic datasets, Table H.

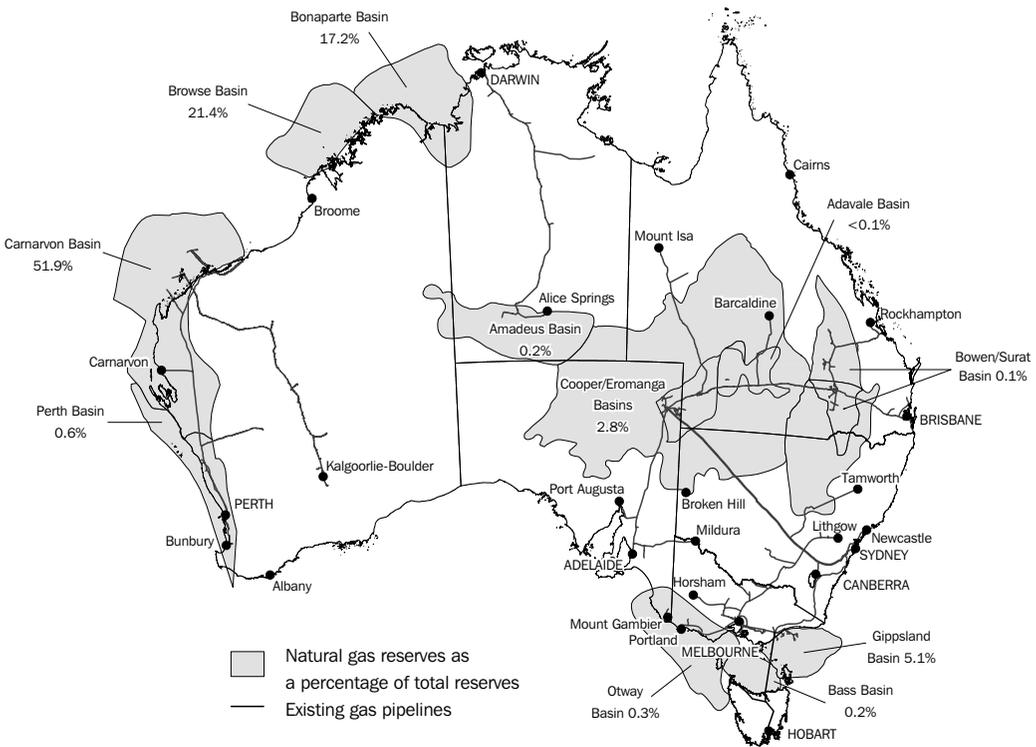
Australia has substantial resources of high quality black coal. Most of these resources are located in New South Wales and Queensland. Small but locally important coal resources occur in Western Australia, South Australia and Tasmania. Brown coal occurs mainly in Victoria with other known resources in Western Australia, South Australia and Tasmania (Geoscience Australia 2002a).

Map 17.2 shows the extent of access to gas resources and major transmission pipelines in Australia. At June 2002, EDR of natural gas totalled 2,219 billion cubic metres, with the Carnarvon Basin accounting for over 50% of total reserves. The total length of Australia's transmission

pipeline system has increased from 9,000 kilometres (km) in 1989 to over 20,000 km in 2001 (APIA 2001).

EDR of non-renewable energy assets were estimated at 1.9 million PJ in 2001 (table 17.3). Black coal accounted for 59%, followed by brown coal (19%) and uranium (16%). Australia has the world's largest resources of uranium in the low cost (EDR) category, with 29% of the world's total EDR (recoverable at <US\$80/kg U). Other countries with significant EDR of uranium include: Kazakhstan (19%), Canada (14%), South Africa (10%), Brazil (7%), Namibia (6%), the Russian Federation (6%) and the United States of America (5%).

### 17.2 GAS RESOURCES — 2002



Source: The Australian Gas Association.

### 17.3 ECONOMIC DEMONSTRATED RESOURCES OF PRIMARY ENERGY PRODUCTS(a)

Fuel	1991	2001	Change
	'000 PJ	'000 PJ	%
Black coal	1 387.8	1 152.8	-16.9
Brown coal	404.5	365.7	-9.6
Crude oil	9.5	8.4	-11.6
Condensate	4.4	10.4	136.4
LPG	3.4	6.9	102.9
Natural gas	26.9	86.5	221.6
Uranium	222.8	307.4	38.0
<b>Total</b>	<b>2 059.3</b>	<b>1 938.1</b>	<b>-5.9</b>

(a) Non-renewable resources only.

Source: ABS data available on request, Australian System of National Accounts.

Changes in EDRs can be due to various factors, one of which is production activity. Others include discoveries and reclassification of resources due to reassessments (such as with black and brown coal in 1999, when some resources previously considered economic were reclassified as subeconomic).

Table 17.4 shows the net present value (NPV) of demonstrated energy assets within Australia. The NPV is the expected value of the resource based on current market value, with some modifications based on depletion and economic forces. At June 2002 total subsoil assets had an NPV of \$245b, of which 74% was attributed to the NPV of energy assets (over \$181b). The two most significant energy assets were black coal and natural gas which accounted for 32% and 36%, respectively. The increase in the value of energy resources between 1992 and 2002 was primarily due to increases in the NPV of black coal and natural gas over this period — the NPV of black coal alone increased seventeen-fold.

### 17.4 NET PRESENT VALUE OF PRIMARY ENERGY PRODUCTS

Fuel	30 June 1992	30 June 2002	Change	
	\$m	\$m		%
Black coal	3 282	57 915	1 665	
Brown coal	169	706	318	
Crude oil	13 385	26 416	97	
Condensate	2 575	20 511	696	
LPG(a)	1 253	6 806	443	
Natural gas	14 770	64 713	338	
Uranium	2 187	4 237	94	
<b>Total</b>	<b>37 621</b>	<b>181 304</b>	<b>382</b>	

(a) Naturally occurring.

Source: ABS data available on request, Australian System of National Accounts.

## Energy production

In examining Australia's energy production, it is important to distinguish between primary and derived (or secondary) energy. Primary energy products are forms of energy obtained directly from nature, including non-renewable fuels such as coal, natural gas and crude oil, and renewable fuels such as wood, hydro-electricity and solar energy. Derived energy products are fuels produced from another fuel, commonly a primary energy product. Derived energy products include electricity, petroleum products such as petrol and diesel, and coke (Bush et al. 1999).

### Primary energy production

In 2000–01, Australia produced 15,237 PJ of primary energy (table 17.5). Black coal continues to dominate the pattern of energy production (as it has done for at least the last 20 years), accounting for nearly half of total energy production in 2000–01. Uranium accounted for 30% of total production, followed by crude oil and natural gas, both of which accounted for 9% of total production. Renewable energy production accounted for 267 PJ of total production.

Graph 17.6 shows the production of non-renewable and renewable energy sources between 1973 and 2001. Over this period, the production of non-renewable fuels has shown an upward trend. In contrast, there has been little growth in the combined production of renewable energy sources (wood, bagasse, hydro-electricity and solar). Although production of renewable energy products increased from 197 PJ in 1973–74 to 267 PJ in 2000–01, its share of total primary energy production fell from around 7% to less than 2% over this period (graph 17.7).

### Derived energy production

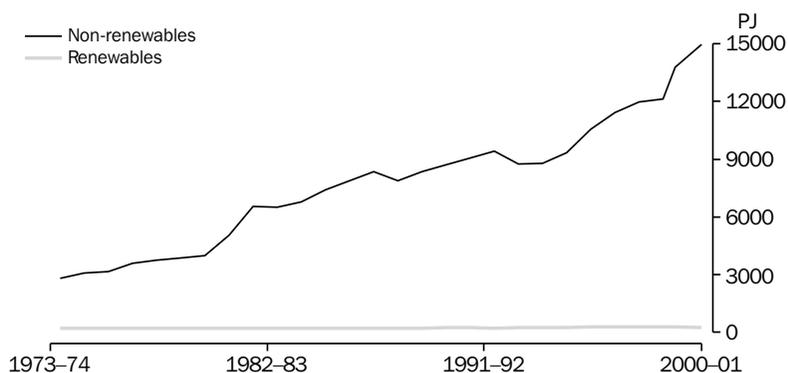
Australia produces a variety of derived (or secondary) energy products. In 2000–01, the nation produced over 2,463 PJ of derived energy, comprising 1,573 PJ (or 64% of total production) of petroleum products, 721 PJ (29%) of electricity, and 164 PJ of coal-based products (table 17.8). Production of derived energy has increased by almost 25% since 1989–90, mainly due to significant increases in the production of electricity and aviation turbine fuel.

## 17.5 PRODUCTION OF PRIMARY ENERGY

Fuel	1990-91	1995-96	2000-01	Change from 1990-91 to 2000-01
	PJ	PJ	PJ	%
Black coal	4 396.0	5 232.0	6 859.7	56.0
Brown coal	484.1	514.4	664.7	37.3
Crude oil and LNG	1 182.3	1 119.3	1 432.1	21.1
LPG	94.0	96.7	107.5	14.4
Natural gas	840.4	1 204.1	1 405.9	67.3
Uranium	2 062.8	2 399.4	4 500.4	118.2
Wood	100.1	109.1	108.4	8.3
Bagasse	78.2	101.5	93.8	19.9
Hydro-electricity	58.0	57.8	60.4	4.1
Solar	2.4	3.5	4.4	83.3
<b>Total</b>	<b>9 298.3</b>	<b>10 837.8</b>	<b>15 237.3</b>	<b>63.9</b>

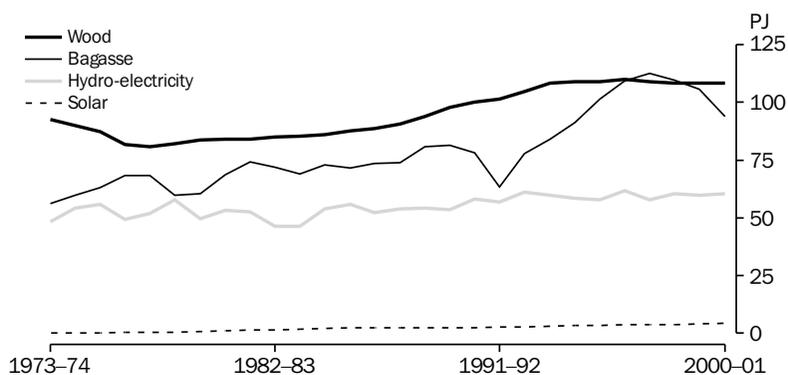
Source: ABARE, electronic datasets, Table N and Table H.

## 17.6 PRODUCTION OF PRIMARY FUELS



Source: ABARE, electronic datasets, Table H, Table N.

## 17.7 PRODUCTION OF RENEWABLE FUELS



Source: ABARE, electronic datasets, Table H.

In 2000–01, Australian petroleum refineries used 44,708 megalitre (ML) of crude oil and other refinery feedstock to produce 43,490 ML of petroleum products (DITR, *Australian Petroleum Statistics*). Total refinery output has increased since 1989–90, due to increases in the production of transport-related petroleum products, including automotive petrol (up 17%), diesel (up 34%) and aviation turbine fuel (up 90%). In contrast, fuel oil production has decreased by 37% since 1989–90 — this is partly due to a reduction in the use of fuel oil in electricity generation (table 17.8).

In Australia, the generation of electricity overwhelmingly uses non-renewable primary energy products as inputs (graph 17.9). Black coal accounted for over 50% of total inputs used to generate electricity in 2000–01. Brown coal, used almost exclusively to generate electricity in

Australia, accounts for 31% of total inputs. The use of natural gas by Australian electricity generators has grown strongly, increasing from 4.5% of total inputs in 1974–75 to 10.6% in 2000–01. Coal and natural gas have been increasingly used to generate electricity since 1974, and have gradually replaced the use of fuel oil.

Electricity generation from renewable sources, on the other hand, has not increased significantly over this time period. Excluding hydro-electricity (which by energy accounting definitions is considered a primary fuel), the main renewable energy used to generate electricity is biomass — mainly bagasse (sugar cane residue) and wood. Biomass accounted for only 1.4 PJ of electricity generated in 2000–01 (ABARE electronic datasets; ESAA 2002).

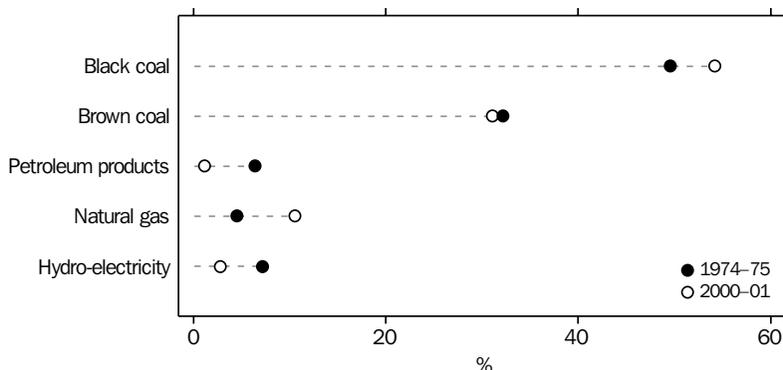
### 17.8 PRODUCTION OF DERIVED ENERGY

Fuel	1989–90 PJ	1995–96 PJ	2000–01 PJ	Change from 1989–90 to 2000–01 %
<b>Coal products</b>				
Coke	121.4	123.8	94.4	-22.2
Coal by-products	75.9	80.8	62.2	-18.1
Briquettes	15.6	10.1	7.5	-51.9
<b>Petroleum products</b>				
Automotive gasoline(a)	556.5	624.2	651.6	17.1
Aviation gasoline	7.5	5.6	6.9	-8.0
Aviation turbine fuel	121.4	180.1	230.5	89.9
Kerosene	3.4	6.5	5.4	58.8
Fuel oil(b)	108.6	89.3	68.5	-36.9
Diesel(c)	402.5	474.2	540.1	34.2
Other petroleum products(d)	50.7	65.5	69.9	37.9
Electricity	502.5	581.2	721.0	43.5
Town gas	8.5	5.6	5.1	-40.0
<b>Total</b>	<b>1 974.5</b>	<b>2 246.9</b>	<b>2 463.1</b>	<b>24.7</b>

(a) Includes unleaded and leaded. (b) Includes heating oil. (c) Includes automotive diesel oil and industrial and marine diesel fuel. (d) Includes solvents, lubricants and bitumen.

Source: ABARE, electronic datasets, Table B1.

### 17.9 FUEL SHARES IN ELECTRICITY GENERATION



Source: ABARE, electronic datasets, Table H.

The electricity supply industry has undergone substantial structural change over the last decade. The 1991 decision to introduce a national electricity market has resulted in the replacement of the traditional State-owned vertically integrated monopolies with businesses that compete within the same marketplace. Employment, sales and turnover continue to be affected by the changes caused by industry restructuring (table 17.10). Employment increased by 551 persons (2%) to 33,435 persons in 2000–01. Turnover in the electricity supply industry increased nationally by \$2.0b (8%) to \$27.4b. The majority of this increase was accounted for by a growth in the value of sales of goods and services of \$1.5b (6%) to \$25.4b although much of the increase was due to the statistical effects of industry restructuring rather than real growth.

#### 17.10 SUMMARY OF OPERATIONS, ELECTRICITY INDUSTRY

	Units	1998-99	1999-2000	2000-01
Employment at 30 June	no.	33 022	32 884	33 435
Sales of goods and services	\$m	23 029.6	23 919.2	25 438.5
Turnover	\$m	24 426.9	25 476.5	27 448.3

Source: *Electricity, Gas, Water and Sewerage Operations, Australia* (8226.0).

### International trade in energy products

Australia is a net exporter of coal, LPG, natural gas and uranium. In 2000–01, a total of 11,627 PJ of Australian energy products were exported, comprising 11 458 PJ of primary energy and 170 PJ of derived energy (table 17.11). In terms of energy content, the largest contributors were black coal (47% of total energy exports) and uranium (39%). Crude oil and natural gas contributed 8% and 4%, respectively. Total energy exports (primary plus derived) increased by 121% between 1989–90 and 2000–01. Over this period, exports of primary energy products grew rapidly, particularly uranium (up 161%) and black coal (up 86%). The major derived energy products exported in 2000–01 were aviation turbine fuel (27.8 PJ), diesel (49 PJ) and automotive gasoline (44 PJ).

In contrast, imports of energy products are small (1,190 PJ in 2000–01). Australia is a net importer of crude oil, importing over 1,000 PJ in 2000–01, up 126% since 1989–90. Graph 17.12 shows the sharp contrast between exports of energy products from and imports of these products into Australia over more than 25 years.

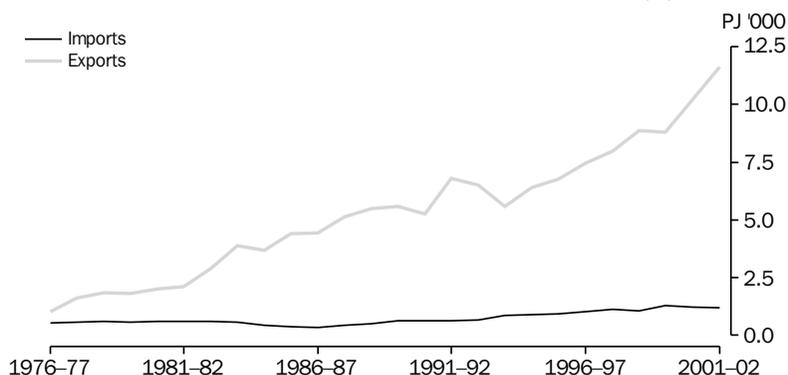
### 17.11 ENERGY PRODUCTS, Volume of exports and imports

	Exports			Imports		
	1989-90	1995-96	2000-01	1989-90	1995-96	2000-01
	PJ	PJ	PJ	PJ	PJ	PJ
<b>Primary energy products</b>						
Black coal	2 965.6	3 947.7	5 517.6	—	—	—
Crude oil and ORF(a)	266.5	403.3	889.6	449.0	917.3	1 019.5
LPG	52.6	38.9	71.6	2.2	10.5	16.3
Natural gas	109.3	407.0	409.6	—	—	—
Uranium	1 749.8	2 484.4	4 569.3	—	—	—
<i>Total</i>	<i>5 143.8</i>	<i>7 281.3</i>	<i>11 457.7</i>	<i>451.2</i>	<i>927.8</i>	<i>1 035.8</i>
<b>Derived energy products</b>						
Automotive gasoline	7.2	38.6	44.1	54.5	14.4	40.7
Aviation gasoline	2.8	2.3	0.9	0.3	0.0	0.0
Aviation turbine fuel	19.9	20.3	27.8	8.6	11.1	14.3
ADO and IDF(b)	29.3	46.4	49.3	39.8	42.9	43.6
Fuel oil and kerosene	18.8	25.9	29.1	46.9	28.6	33.2
Other petroleum products(c)	19.5	26.3	18.0	24.3	18.9	22.4
Briquettes	0.7	2.2	0.0	—	—	—
Coke	15.5	11.4	0.5	—	—	—
<i>Total</i>	<i>113.7</i>	<i>173.4</i>	<i>169.7</i>	<i>174.4</i>	<i>115.9</i>	<i>154.2</i>
<b>Total</b>	<b>5 257.5</b>	<b>7 454.7</b>	<b>11 627.4</b>	<b>625.6</b>	<b>1 043.7</b>	<b>1 190.0</b>

(a) Other refinery feedstock. (b) Automotive diesel oil and industrial diesel fuel. (c) Also includes lubricants and greases, bitumen and other bituminous products, solvents, waste oils and diesel.

Source: ABARE, electronic datasets 2001, Table N.

### 17.12 EXPORTS AND IMPORTS OF ENERGY PRODUCTS (PJ)



Source: ABARE, electronic datasets, Table N.

Table 17.13 shows that the large volumes of exported energy products contributed significantly to Australia's export earnings. The export of energy products contributed about 21% towards Australia's total export earnings in 2001-02, up from 18% in 1993-94. Black coal accounts for by far the largest share of the total value of energy exports (52.2%), followed by crude oil (25.2%) and liquid natural gas (10.3%). Uranium contributes only 1.4% of the total value of energy exports. Imports of energy products

(mainly crude oil) made up only 7.5% of the total value of imports in 2001-02. It is important to emphasise that although the quantity of energy exports (by energy yield) has increased by 65% from 1993-94 to 2001-02, the value of energy exports increased by 126%, a key factor of which is the decline of the Australian dollar relative to the US dollar in that period, decreasing by 28% from US\$0.73 in 1993-94 to US\$0.52 by 2001-02.

### 17.13 ENERGY PRODUCTS, Value of exports and imports

	Exports			Imports		
	1993–94	1997–98	2001–02	1993–94	1997–98	2001–02
	\$m	\$m	\$m	\$m	\$m	\$m
Fuel						
Black coal(a)	7 161	9 531	13 323	—	—	—
Crude oil and ORF(b)	1 424	2 251	6 422	2 803	3 697	7 454
LPG	138	367	720	19	68	117
LNG	1 047	1 599	2 636	—	—	—
Uranium	193	288	361	—	—	—
Automotive gasoline	172	304	405	750	93	450
Diesel fuel(c)	210	270	315	153	149	413
Other refinery products	964	1 079	1 321	392	431	596
<b>Total</b>	<b>11 309</b>	<b>15 689</b>	<b>25 503</b>	<b>4 117</b>	<b>4 437</b>	<b>9 030</b>
Total trade in goods and services	64 548	87 768	121 176	64 470	90 684	119 681

(a) Coking plus steaming. (b) Other refinery feedstock. (c) Includes automotive diesel oil and industrial and marine diesel fuel.

Source: *International Merchandise Trade, Australia (5422.0)*.

## Energy use

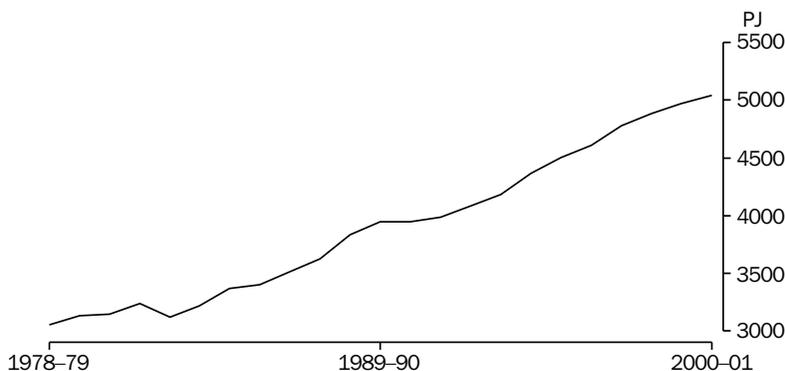
### Total energy use

Total energy use, comprising both primary and derived energy, was 5,040 PJ in 2000–01, of which around two-thirds (3,375 PJ) was delivered to end-users and one-third (1,665 PJ) was lost in conversion, transmission and distribution. Graph 17.14 shows the growth in Australian energy use since 1978–79.

Growth in primary energy products commonly reflects the demand for derived fuels (graph 17.15). As such, an increased demand for

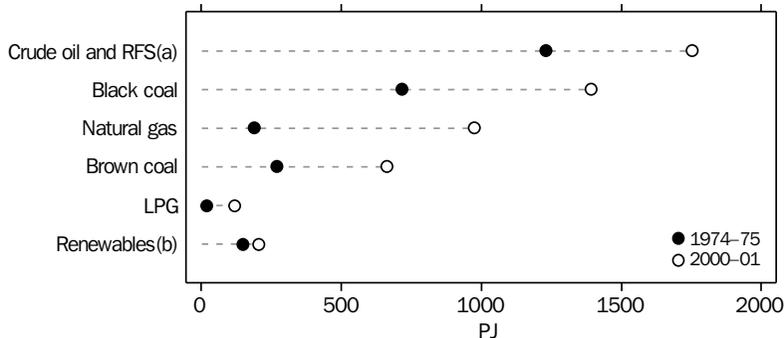
electricity since 1974 has led to significant growth in black and brown coal use. Similarly, growth in the use of crude oil over the last 25 years is due primarily to an increased demand for petroleum products by the transport industry. Natural gas use has demonstrated the fastest growth since 1974, due to increased demand from the electricity generation, mining, manufacturing and commercial sectors (Bush et al. 1999). The use of renewable energy sources increased marginally over this time period.

### 17.14 ENERGY CONSUMPTION



Source: ABARE, *electronic datasets, Table H*.

### 17.15 PRIMARY ENERGY PRODUCTS USED



(a) Refinery feedstock. (b) Includes wood, bagasse and solar.

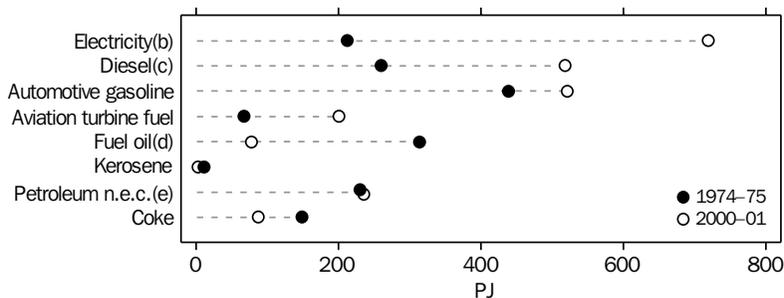
Source: ABARE, electronic datasets, Table B1.

Of the derived fuels, use of electricity, diesel and aviation turbine fuel demonstrated significant growth since 1974, whereas coke and fuel oil use has decreased (graph 17.16). Electricity use, which has more than tripled over this period, was 780 PJ in 2000–01. Growth in diesel use, which has increased from 260 PJ in 1974–75 to 518 PJ in 2000–01, is driven by a strong increase in demand for automotive diesel oil by the transport industry. In contrast, the use of fuel oil, a heavy fuel used for industrial purposes, has decreased over this period. In 2000–01, Australia used 79 PJ of fuel oil.

### Energy inputs into the energy conversion sectors

The energy conversion sectors represent an intermediate stage in the energy supply chain. These sectors transform primary energy products into more useful, higher value-added secondary (derived) energy products. Petroleum refiners, for example, transform crude oil into petroleum products such as petrol and diesel.

### 17.16 DERIVED ENERGY PRODUCTS USED(a)



(a) Selected fuels only. (b) Excludes hydro-electricity. (c) Includes automotive diesel oil and industrial and marine diesel fuel. (d) Includes heating oil. (e) Includes aviation gasoline, bitumen, solvents, lubricants and greases.

Source: ABARE, Electronic datasets, Table B1.

The main energy conversion sectors, comprising electricity generators, gas manufacturers, petroleum refiners, and operators of coke ovens and blast furnaces, are significant users of primary energy products. Of the conversion sectors, the petroleum refining and electricity generation sectors are the two main users of energy (table 17.17).

In 2000–01, the electricity generation sector used 2,123 PJ of energy (up 39% since 1989) and the petroleum refining sector used 1,700 PJ (up 21%). The strong growth in energy consumption in the electricity sector is attributed to increased electrification in all end use sectors; rapid growth in a number of industries in which electricity is the prime fuel source, such as the commercial and non-ferrous metal sectors; and technological innovation encouraging the use of new electrical appliances in all sectors (ANZMEC 2001). In contrast, coke oven operation, briquetting and gas manufacturing used less energy in 2000–01 than in 1989–90 (table 17.17). For example, coke oven operation used 132 PJ in 2000–01, down 26% since 1989.

The conversion of one form of energy to another leads to significant losses of energy. Additionally, losses are incurred during the transmission of distribution of secondary energy to end-users. In 2000–01, conversion losses to transform fuels, including transmission and distribution losses, totalled 1,665 PJ.

### Energy end use by sector

In 2000–01, Australia's end users of energy, comprising household and industry (excluding the conversion sectors), used 3,375 PJ of energy (table 17.18). The transport and manufacturing sectors accounted for 68% of the total use.

The transport sector (including household transport) is the largest end user of energy, using 1,264 PJ in 2000–01. In 2000–01, road transport accounted for 77% (975 PJ) of the sector's energy use, of which over 40% can be attributed to household activity. Air transport energy use has increased by 87% since 1989, to 204 PJ in 2000–01.

While manufacturing remains a large end user of energy, using 1,018 PJ of energy in 2000–01, growth over the last decade has been modest relative to other sectors (table 17.18). This is mostly due to a smaller but more energy efficient iron and steel manufacturing industry. Energy use by the iron and steel industry, which is the main contributor to total manufacturing energy use, has grown by only 3 PJ in more than a decade (from 100 PJ in 1989–90 to 103 PJ in 2000–01).

Growth in the mining sector reflects the rise in energy consumption in oil and gas mining, and in particular the development of a liquid natural gas industry in the late-1980s; the expanding demand for natural gas and for increased production of crude oil, condensate and liquid petroleum gas; and strong energy demand in other mining activities (Bush et al. 1999).

Energy use in the commercial sector has grown by 50% since 1989. This growth reflects the significant economic growth of the sector, the increased use of electrical equipment, particularly electronic data processing equipment, and the deregulation of working hours (Bush et al. 1999).

In addition to transport, households used 400 PJ of energy in 2000–01 (table 17.18), primarily electricity, gas and wood for home heating and lighting. In 2000–01, households used 179 PJ of electricity, 122 PJ of natural gas and 80 PJ of wood (ABARE electronic datasets).

**17.17 ENERGY USED IN CONVERSION, By sector**

	1989–90	1995–96	2000–01	Change from
	PJ	PJ	PJ	1989–90 to 2000–01 %
Coke oven operation	178.8	168.2	132.0	-26.2
Briquetting	15.9	11.8	8.4	-47.4
Petroleum refining	1 400.2	1 638.0	1 700.0	21.4
Electricity generation	1 529.2	1 747.9	2 123.0	38.8
Gas Manufacturing	3.9	2.0	1.8	-53.8
Other conversion(a)	114.0	104.0	83.3	-26.9
Fuel used in conversion	181.0	198.5	217.9	20.4
<b>Total</b>	<b>3 423.0</b>	<b>3 870.4</b>	<b>4 266.3</b>	<b>24.6</b>

(a) Includes: return streams to refineries from the petrochemical industry; consumption of coke in blast furnaces; blast furnace gas manufacture; electricity produced through cogeneration; brown coal tar produced in tar manufacture.

Source: ABARE, electronic datasets, Table H.

### 17.18 ENERGY CONSUMPTION BY END USER, By sector

	1989-90	1995-96	2000-01	Change from 1989-90 to 2000-01
	PJ	PJ	PJ	%
Agriculture	57.1	64.6	71.2	24.7
Mining	162.2	238.6	283.5	74.8
Manufacturing	874.2	951.9	1 018.8	16.5
Construction	41.0	43.8	51.0	24.4
Transport(a)	1 007.6	1 173.9	1 264.5	25.4
Commercial(b)	151.0	189.7	225.9	49.6
Residential(c)	322.5	369.4	400.0	24.0
Other(d)	52.7	59.1	59.6	13.1
<b>Total</b>	<b>2 668.4</b>	<b>3 091.0</b>	<b>3 374.7</b>	<b>26.5</b>

(a) Includes all transport use, including household motor vehicle use. (b) Includes wholesale and retail trade, communications, finance and insurance, property and business services, government administration and defence, education, health and community services, cultural and recreational services, and personal and other services, along with water, sewerage and drainage.

(c) Transport use by households is included in transport. (d) Includes lubricants and greases, bitumen and solvents, as well as energy consumption in the gas production and distribution industries.

Source: ABARE, electronic datasets, Table B1.

Australia has a very high level of motorisation, and a high level of total personal travel. Other than the North Americans, only Italians are more motorised than Australians (OECD/IEA 2001). Per capita road transport fuel use in Australia increased 10% from 1990-91 to 1998-99 (table 17.21). Table 17.19 shows that the number of persons driving to work or study in Australia increased by 9% between 1996 and 2000. Some 76% of adults aged 18 years and above drove to work or study in 2000.

The 1970s and 1980s saw significant increase in the level of indoor comfort and amenities in Australian homes for space comfort, water heating

and electric appliances. Natural gas and electricity are the key sources of space heating (table 17.20). In 2002, natural gas was the main heating source for 34% of residences (up from 31% in 1994); electricity provided 31% and wood 14%. Over 19% of households did not have space heating. As comfort standards have increased, whole house heating rather than 'spot' heating increased and pipeline gas became more widely available (OECD/IEA 2001). Electricity is the major source of energy for both heating water (about 61% in 2002) and cooking (about 57% in 2002).

### 17.19 TYPE OF TRANSPORT TAKEN TO WORK/STUDY, Number of persons travelling

	1996	2000	Change
	'000	'000	%
Train	654.5	623.6	-4.7
Bus	545.7	359.7	-34.1
Tram/light rail	(a)	50.1	..
Ferry/boat	(a)	15.7	..
Taxi	(a)	9.1	..
Car/truck/van as driver	5 991.9	6 539.8	9.1
Car/truck/van as passenger	552.8	457.9	-17.2
Motorbike or motor scooter	99.4	66.0	-33.6
Bicycle	215.2	98.4	-54.3
Walk	487.4	378.7	-22.3
Other	153.1	24.2	..
<b>Total</b>	<b>8 700.0</b>	<b>8 623.1</b>	<b>11.7</b>

(a) Included in Other.

Source: Environmental Issues: People's Views and Practices (4602.0).

### 17.20 PRINCIPAL FUEL TYPES USED IN DWELLINGS, Number of dwellings by purpose

	Room heating			Water heating			Cooking(a)	
	1994 '000	1999 '000	2002 '000	1994 '000	1999 '000	2002 '000	1999 '000	2002 '000
Electricity	1 906.4	1 997.3	2 309.2	3 999.3	4 253.8	4 588.0	4 181.1	4 270.0
Gas	2 044.3	2 349.6	2 555.0	2 153.8	2 526.7	2 810.1	2 887.0	3 169.1
Wood	1 130.4	1 118.3	1 024.2	(b)	73.9	44.9	51.4	34.6
Solar	3.8	*0.8	*1.0	317.1	344.7	322.4	—	—
Oil	200.0	156.3	92.6	(b)	2.2	*1.9	0.9	—
Coal/coke	(b)	*2.7	*1.3	(b)	—	*0.6	—	—
Other	90.6	44.5	31.6	141.9	12.4	15.3	14.8	—
Don't know	(b)	*7.5	—	(b)	36.9	117.6	—	—
None	1 039.1	1 458.1	1 458.7	—	—	—	—	—
<b>Total</b>	<b>6 414.5</b>	<b>7 135.2</b>	<b>7 473.7</b>	<b>6 612.1</b>	<b>7 250.6</b>	<b>7 473.7</b>	<b>7 135.2</b>	<b>7 473.7</b>

(a) Not collected in 1994. (b) Included in Other.

Source: *Environmental Issues: People's Views and Practices (4602.0)*.

### Indicators of energy use in Australia

Between 1992–93 and 1998–99, Australia's total energy consumption increased by 19%, or 2.7% per year. Over the same period the population increased by 7%, or 1% per year, and GDP by over 29% (in chain volume terms), or 4.2% per year. Aggregate energy intensity (energy consumed per unit of output) of the economy declined by around 8% from 1992–93 to 1998–99. Despite electricity generation on a per capita basis, growing by an average of 2.9% over the seven year

period, total energy consumption grew at a slower rate than GDP, particularly over the more recent years shown (table 17.21).

An indicator of aggregate energy intensity, such as the ratio of energy use to GDP, does not account for the effects of changes in the structure of energy use over time. Aggregate energy intensity is a very basic indicator and does not provide an adequate picture of the underlying trends in energy intensity within the economy. The next section *International comparisons of energy performance* provides more detail on the composition of this aggregate indicator.

### 17.21 SELECTED ENERGY INDICATORS

	Energy consumption(a)	Electricity generated(b)	Energy use by road transport	Population	GDP(c)	Per capita energy use	Per capita electricity generation	Energy use/GDP(a)	Road transport use per capita
	PJ	PJ	PJ	'000	\$m	GJ/capita	GJ/capita	GJ/\$m	GJ/capita
1992–93	4 081.8	528.1	829.1	17 667.1	457 735	231.0	29.9	8 917.4	46.9
1993–94	4 181.9	542.9	853.5	17 854.7	476 556	234.2	30.4	8 775.3	47.8
1994–95	4 365.3	565.8	878.0	18 071.8	498 113	241.6	31.3	8 763.7	48.6
1995–96	4 505.5	581.2	904.3	18 310.7	520 669	246.1	31.7	8 653.3	49.4
1996–97	4 611.0	599.1	921.3	18 524.2	540 379	248.9	32.3	8 532.9	49.7
1997–98	4 777.6	647.2	936.4	18 730.4	565 881	255.1	34.6	8 442.8	50.0
1998–99	4 858.3	674.9	960.7	18 937.2	591 546	256.5	35.6	8 212.9	50.7

(a) Primary plus derived energy. (b) Thermal electricity. (c) Chain volume measures reference year is 1997–98.

Source: *Australian Demographic Statistics (3101.0)*; *Australian System of National Accounts (5204.0)*; *ABARE*, electronic datasets, Table H.

## International comparisons of energy performance

This section outlines the main concepts underlying measures of energy performance, and the difficulties they present for measurement. It provides some international comparisons of energy performance and discusses Australia's performance against various indicators relative to that of other OECD countries.

Given that countries exhibit a range of climate, industrial structures, geographical features and economic development, changes in the aggregate energy intensity ratio (energy consumed per unit of output) are an inadequate basis for measuring and comparing energy efficiency among countries. Using only the ratio of energy use to GDP as an energy performance indicator for international or cross-country comparison would be misleading. However, aggregate energy intensity can be broken down to identify the factors which have

contributed to the net aggregate effect. These factors may be due to the level of economic activity (the production effect); the sectoral composition of the economy (the structural effect); and energy intensities of activity within the various energy-using sectors (the real intensity effect).

Overall, Australia's ratio of energy use to GDP and its energy use per capita are higher than the OECD average (table 17.22). Although the ratio of energy use to GDP for Australia declined between 1990 and 2000, this was less of a decline than that experienced in most other OECD countries. This is partly due to a natural evolution of the Australian economy towards more energy use, particularly in the transport, commercial, and residential sectors. In addition, structural changes in the economy towards certain energy-intensive manufacturing industries contributed to increased energy use. Energy savings offset some of this growth, but the overall impact was a growth in energy use (OECD/IEA 2001).

**17.22 ENERGY INDICATORS FOR SELECTED OECD COUNTRIES — 2000**

	Energy production Mtoe(c)	Change from 1990 to 2000		Change from 1990 to 2000		Change from 1990 to 2000		Change from 1990 to 2000	
		TPES(a) Mtoe(c)	%	TPES(a) Mtoe(c)	%	TPES(a)/GDP(b) toe/\$USm	%	TPES(a)/Population toe/capita	%
<b>Australia</b>	<b>232.55</b>	<b>47.5</b>	<b>110.17</b>	<b>25.1</b>	<b>232.8</b>	<b>-11.4</b>	<b>5.8</b>	<b>13.3</b>	
Canada	374.86	37.0	250.97	19.1	306.8	-8.7	8.2	8.8	
Denmark	27.87	170.6	19.46	6.6	141.8	-14.6	3.6	2.6	
Finland	15.13	29.1	33.15	16.5	268.8	-7.1	6.4	10.9	
France	131.38	18.7	257.13	16.3	189.6	-4.5	4.3	10.5	
Germany	134.32	-27.6	339.64	-4.3	177.8	-19.3	4.1	-8.3	
Italy	26.86	9.1	171.57	10.9	135.5	-3.3	3.0	12.4	
Netherlands	57.24	-4.6	75.80	14.1	192.6	-14.3	4.8	8.1	
New Zealand	15.38	25.4	18.63	33.0	261.1	1.0	4.9	17.8	
Norway	224.99	87.4	25.62	19.1	216.9	-14.3	5.7	12.9	
United Kingdom	272.69	31.1	232.64	9.8	184.1	-12.6	3.9	5.7	
United States of America	1 675.77	1.6	2 299.67	19.8	255.9	-13.4	8.3	7.8	
<b>OECD(d)</b>	<b>3 826.49</b>	<b>12.2</b>	<b>5 316.93</b>	<b>30.3</b>	<b>215.9</b>	<b>-8.9</b>	<b>4.7</b>	<b>8.8</b>	

(a) Total primary energy supply (TPES) is made up of production plus imports less exports less international marine bunkers, net of stock changes. (b) Gross domestic product (GDP) in purchasing price parity terms, expressed in 1995 \$US. (c) Million tonnes of oil equivalent. (d) All OECD countries.

Source: OECD/IEA 2002.

Between 1990 and 2000 the end use of energy by Australian industry (manufacturing and mining) increased by a higher percentage than in all but four of the OECD countries included in table 17.23; in two countries (Germany and the United States of America) it fell. Australian manufacturing production involves a high share of energy intensive raw materials. Particularly important is the production of ferrous and non-ferrous metals. Energy use for non-ferrous metals (alumina refining and aluminium smelting) has increased dramatically as Australia has captured an increased share of the global market. Expansion of these industries has pushed up manufacturing energy use. Australia is one of the few countries listed where structural changes have had an upward effect on energy use over the past two decades.

Passenger transport rose strongly all through the 1970s and 1980s, driven by increased car ownership and air travel. In the early-1970s Australia had a relatively low level of per capita motorisation by the United States of America or Canadian standards. However, Australia experienced a higher rate of growth of car ownership, relative to GDP, than most other

countries, and significantly closed the gap with the United States of America. Factors that combined to give Australia high energy use for transport include: high volume of passenger transport; above-average fuel intensity of cars; and high car ownership (OECD/IEA 2001).

The 1970s and 1980s saw an expansion of the area of built space in the commercial sector in Australia that closely followed the rise in commercial sector gross product. Electricity intensity in this sector rose, indicative of greater electrification (e.g. increased electricity use for air conditioning, lighting and computing). This trend appears to be slowing, however, even with the rising commercial sector gross product. Significant growth in residential energy use over the past two decades can be attributed to rapid development of equipment ownership in Australia. Canada, the United States of America and Nordic countries, by contrast, showed little growth in residential energy use for equipment because consumption was already so well developed in the early-1970s.

Table 17.24 shows that Australia has a far greater dependence on coal for the production of electricity than the other OECD countries shown.

### 17.23 ENERGY END USE BY SECTOR, Selected OECD countries — 2000

	Industry(a)			Transport				Other(b)		
	1990 Mtoe(c)	2000 Mtoe(c)	Change %	1990 Mtoe(c)	2000 Mtoe(c)	Change %	1990 Mtoe(c)	2000 Mtoe(c)	Change %	
<b>Australia</b>	<b>21.8</b>	<b>24.5</b>	<b>12.6</b>	<b>22.7</b>	<b>28.1</b>	<b>23.9</b>	<b>12.1</b>	<b>15.7</b>	<b>29.3</b>	
Canada	58.4	70.8	21.2	41.2	53.5	29.9	54.5	62.0	13.8	
Denmark	2.8	2.9	3.6	4.6	4.9	6.5	6.5	6.9	5.8	
Finland	9.9	11.6	16.9	4.4	4.5	3.2	7.5	8.1	8.1	
France	45.7	46.4	1.6	41.5	52.8	27.2	52.5	64.9	23.6	
Germany	88.7	75.8	-14.5	60.0	67.2	11.9	96.8	96.7	-0.1	
Italy	42.9	42.9	—	34.3	42.4	23.6	38.2	42.7	11.7	
Netherlands	20.5	20.6	0.5	10.6	14.2	34.3	19.5	22.7	16.4	
New Zealand	4.0	5.9	47.1	3.6	5.0	40.4	2.3	2.6	11.6	
Norway	7.2	8.2	14.4	4.1	4.6	11.4	5.9	6.7	13.8	
United Kingdom	40.9	41.3	0.9	46.5	52.7	13.4	56.2	63.7	13.4	
United States of America	416.0	359.5	-13.6	484.4	610.3	26.0	406.6	473.1	16.3	

(a) Manufacturing and mining. (b) Includes agriculture, commerce, public services, residential and unspecified other sectors.

(c) Million tonnes of oil equivalent.

Source: OECD/IEA 2002.

## 17.24 FUEL SHARES IN ELECTRICITY GENERATION, Selected OECD countries — 2000

	Coal %	Petroleum %	Natural gas %	Fossil fuels %	Nuclear %	Hydro- electricity %	Geothermal, solar %	Combust. renew. and waste %
<b>Australia</b>	<b>77.2</b>	<b>1.3</b>	<b>12.6</b>	<b>91.1</b>	—	<b>8.1</b>	—	<b>0.8</b>
Canada	19.5	2.5	5.5	27.5	12.0	59.2	—	1.2
Denmark	46.0	12.2	24.3	82.5	—	0.1	12.3	5.1
France	5.8	1.4	2.1	9.3	77.5	12.5	0.1	0.6
Germany	52.7	0.8	9.3	62.8	29.9	3.8	1.7	1.8
Italy	11.3	31.8	37.5	80.7	—	16.4	2.2	0.7
Netherlands	28.4	3.5	57.7	89.6	4.4	0.2	1.2	4.7
New Zealand	2.6	—	23.8	26.4	—	63.1	8.9	1.5
Norway	0.1	—	0.1	0.3	—	99.5	—	0.2
United Kingdom	33.4	1.5	39.4	74.3	22.9	1.4	0.3	1.2
United States of America	52.7	3.1	15.7	71.6	20.0	6.2	0.5	1.7
<b>OECD(a)</b>	<b>38.8</b>	<b>6.2</b>	<b>15.8</b>	<b>60.8</b>	<b>23.3</b>	<b>13.7</b>	<b>0.7</b>	<b>1.5</b>

(a) All OECD countries.

Source: OECD/IEA 2002.

## Energy and the environment

### Greenhouse gas emission

Fossil fuel combustion is the major contributor to Australia's greenhouse gas emissions. Table 17.25 shows that the electricity supply industry accounts for nearly half of total energy-related emissions, and that emissions in this industry grew by 25% between 1992–93 and 1997–98. Direct emissions by households contributed around 13% in

1997–98, with most of these emissions due to motor vehicle use. Other significant direct emitters of greenhouse gases included manufacturing of iron and steel; mining; manufacturing of basic non-ferrous metals and products; air and space transport; and road transport (excluding household motor vehicle use). Combined emissions from this group of industries accounted for nearly 20% of energy-related emissions in 1997–98.

### 17.25 PRODUCTION OF ENERGY-RELATED GREENHOUSE GASES(a), By industry

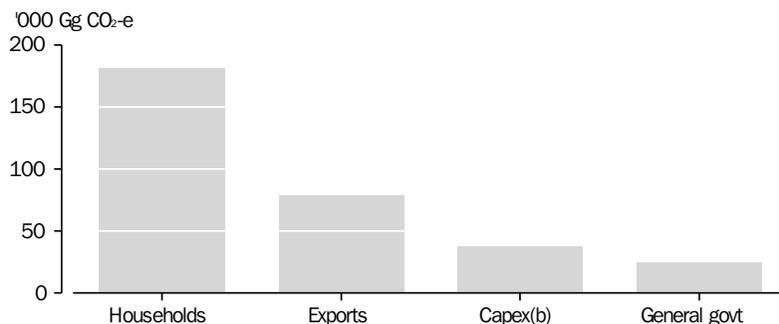
	1992–93 Gg CO <sub>2</sub> -e(b)	1993–94 Gg CO <sub>2</sub> -e(b)	1994–95 Gg CO <sub>2</sub> -e(b)	1995–96 Gg CO <sub>2</sub> -e(b)	1996–97 Gg CO <sub>2</sub> -e(b)	1997–98 Gg CO <sub>2</sub> -e(b)	Change from 1992–93 to 1997–98 %
Agriculture; hunting and trapping; forestry and fishing	6 053	6 252	6 518	6 737	6 988	7 188	18.8
Mining	10 986	11 237	12 295	13 271	14 596	15 136	37.8
Manufacturing	52 431	52 934	55 665	56 603	55 437	57 166	9.0
Electricity and gas	135 987	137 164	142 412	148 256	153 611	169 562	24.7
Construction	4 293	4 419	4 582	4 809	4 819	4 958	15.5
Transport	25 443	26 332	29 111	30 708	31 415	30 939	21.6
Services	7 781	7 997	8 325	8 610	8 823	9 063	16.5
Household production	42 194	42 990	44 051	44 361	45 286	45 587	8.0
<b>Total</b>	<b>285 168</b>	<b>289 325</b>	<b>302 959</b>	<b>313 355</b>	<b>320 975</b>	<b>339 597</b>	<b>19.1</b>

(a) Excludes fugitive emissions. (b) Gigagrams of carbon dioxide equivalents (CO<sub>2</sub>-e).

Note: Due to varying classification systems, definitional differences, and various states of revision of data sources, figures will not necessarily reconcile with other data sources. Statistics of greenhouse gas emissions are also available for 1999 from AGO 2000.

Source: Energy and Greenhouse Gas Emissions Accounts, Australia, 1992–93 to 1997–98 (4604.0).

**17.26 GREENHOUSE GAS EMISSIONS(a), By final use — 1996–97**



(a) Energy-related emissions produced either directly or indirectly, by category of final use.  
 (b) Gross fixed capital formation.

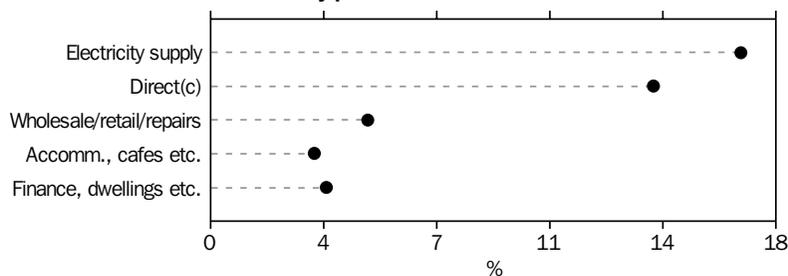
Source: *Energy and Greenhouse Gas Emissions Accounts, Australia, 1992–93 to 1997–98 (4604.0)*.

While table 17.25 presents the direct generation of greenhouse gases by the energy-using industry group or sector, graph 17.26 shows that, in 1996–97, the bulk of Australia’s energy-related greenhouse gases were emitted in the production and consumption of goods and services for the purpose of household final consumption (about 56%). A further 25% of energy-related emissions were generated in the production of goods and services for export. Other final use categories (general government final consumption, and gross fixed capital formation) were responsible for the remaining emissions.

Graphs 17.27, 17.28 and 17.29 show the contributions that the production or consumption of various goods and services make towards Australia’s greenhouse gas emissions. The

consumption of electricity by households indirectly produced the greatest amount of energy-related greenhouse gas emissions (17%). This was followed by direct emissions by households (14%), most of which is due to the consumption of motor vehicle fuels (graph 17.27). The most significant contributor to energy-related greenhouse gas emissions resulting from production of goods and services for export is basic non-ferrous metals and products (6% of total energy-related greenhouse gases) (graph 17.28). A significant proportion of emissions is also attributed to buildings and other construction, such as roads, irrigation systems, oil refineries, and water and gas supply systems, that contain high levels of embodied energy (about 7% of total greenhouse gas emissions) (graph 17.29).

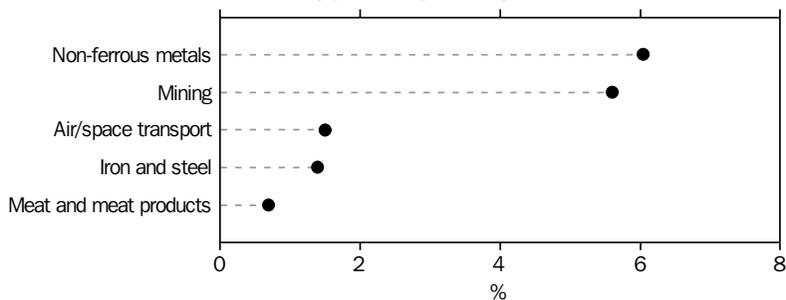
**17.27 GREENHOUSE GASES(a) INDUCED(b) BY HOUSEHOLDS, Contributions by product consumed — 1996–97**



(a) Energy-related greenhouse gases only. (b) Produced either directly or indirectly through the consumption of products. (c) Direct production by households, mainly through motor vehicle use.

Source: *Energy and Greenhouse Gas Emissions Accounts, Australia, 1992–93 to 1997–98 (4604.0)*.

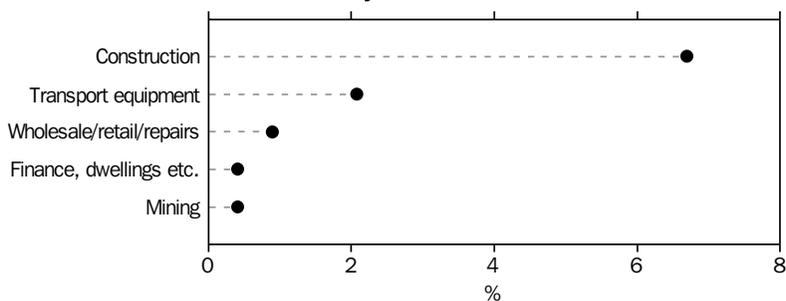
**17.28 GREENHOUSE GASES(a) INDUCED(b) BY EXPORTS,  
Contributions by producing industry — 1996-97**



(a) Energy-related greenhouse gases only. (b) Produced indirectly through the production of goods and services for export.

Source: *Energy and Greenhouse Gas Emissions Accounts, Australia, 1992-93 to 1997-98 (4604.0)*.

**17.29 EMISSIONS(a) INDUCED BY OTHER FINAL USES(b),  
Contributions by final use — 1996-97**



(a) Energy-related greenhouse gases only. (b) Produced indirectly by government final consumption of products or gross capital formation.

Source: *Energy and Greenhouse Gas Emissions Accounts, Australia, 1992-93 to 1997-98 (4604.0)*.

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Australia Gas Association (e.g. *Gas Statistics Australia 2002* contains data on production, supply and use of natural gas)

Australian Industry Group (e.g. *Outcomes of the Australian Industry Group National Energy Market Survey 2001* contains data on the national energy market from a consumer viewpoint)

Australian Institute of Petroleum

Commonwealth Department of Industry, Tourism and Resources (e.g. *Energy Use in Commonwealth Operations 2001–02* contains data on energy use and energy efficiency by Commonwealth Government agencies)

Joint Coal Board

LANDINFO, Sinclair Knight Mertz

## **Web sites**

Australian Greenhouse Office, <<http://www.greenhouse.gov.au>>

Australian Institute of Petroleum, <<http://www.aip.com.au>>

Commonwealth Department of Industry, Tourism and Resources <<http://www.industry.gov.au>>

Electricity Supply Association of Australia, <<http://www.esaa.com.au>>

Geoscience Australia, <<http://www.agso.gov.au>>

International Energy Agency, <<http://www.iea.org>>

Joint Coal Board, <<http://www.jcb.org.au>>

Organisation for Economic Co-operation and Development, <<http://www.oecd.org>>

Sustainable Energy Development Authority (NSW), <<http://www.seda.nsw.gov.au>>

# How much energy is used to make a plastic bag?

The plastic carry bag is an established part of Australian shopping. The nation consumes approximately 6.9 billion plastic bags, or 36,850 tonnes of plastic, each year — this equates to just under one bag per person per day. About 53% of plastic bags are distributed from supermarkets, while 47% come from other retail outlets such as fast food shops, liquor stores, and general merchandising. One of the main methods of managing the use and disposal of plastic bags is the voluntary National Code of Practice for the Management of Plastic Retail Carry Bags (Australian Retailers Association 2002).

Plastic bags are popular with consumers and retailers because they are a functional, lightweight, strong, cheap, and hygienic way of transporting food and goods. Additionally, the manufacture of plastic bags uses little energy. However, research has shown that energy use and greenhouse gas emissions can be reduced by switching from the commonly used bags to larger, reusable bags, by expanding the Code, and introducing a levy. These options are discussed briefly below.

The two main types of plastic bags used in Australia are the 'singlet' bag made of high density polyethylene (HDPE) and the 'boutique' bag made of low density polyethylene (LDPE). The HDPE bags are

mainly used in supermarkets and take-away food shops, whereas the LDPE are commonly used in department and fashion stores. In 2001–02, 66% (or four billion) of all HDPE bags and 25% (or 225 million) of all LDPE bags used in Australia were imported.

Around 0.48 megajoules (MJ) of energy is consumed to make one HDPE singlet bag including the energy content of the bag (the embodied energy). Another way of considering this is that the energy consumed by driving a car one kilometre is the equivalent of manufacturing 8.7 plastic bags (Nolan-ITU 2002).

By comparison, it is estimated that the making of a plastic bag uses up to 70% less energy and produces around half the greenhouse gas emissions than a paper bag (National Plastic Shopping Bags Working Group 2002). However, the amount of energy used and greenhouse gases emitted in the manufacture of plastic bags does not compare favourably to other alternatives, as shown in table S17.1. Over one year, using woven HDPE bags consumes 9% of the energy and produces 10% of the greenhouse gas emissions compared with using standard HDPE bags (Nolan-ITU 2002).

**S17.1 ASSESSMENT OF PLASTIC BAG ALTERNATIVES(a)**

Alternative	Expected life	Bags per year no.	Annual greenhouse gas emissions	Annual primary energy use
	Shopping trips		kg CO <sub>2</sub> -e(b)	MJ
Singlet HDPE	1	520	6.1	210
50% recycled HDPE	1	520	4.8	117
Boutique LDPE	1	650	29.8	957
Calico	52	9	2.5	160
Woven HDPE swag	104	1.65	0.6	19
Kraft paper — handled	1	520	11.8	721

(a) Based on a household carrying about 70 grocery items home from a supermarket each week for 52 weeks. (b) Kilograms of carbon dioxide equivalent (CO<sub>2</sub>-e).

Source: Nolan-ITU 2002.

Further, modelling has shown that significant energy savings are possible with the introduction of a plastic bag levy. Under the current Code, plastic bag manufacturing uses 2,540 gigajoules (GJ) of energy per year. If the Code is expanded and a legislated levy of, say, 15 cents per bag is introduced, energy use

could be cut by 54.9% (to 1,160 GJ a year). If a 25 cent levy was introduced, energy use could be reduced by over 60% (to 940 GJ per year; Nolan-ITU 2002).

## References

Australian Retailers Association 2002, *National Code of Practice for the Management of Plastic Retail Carry Bags — Draft V, December 2002*.

National Plastic Shopping Bags Working Group 2002, *Plastic Shopping Bags in Australia — Report to the National Packaging Covenant Council*, prepared for the National packaging Covenant Council and the Department of Environment and Heritage, Canberra.

Nolan-ITU Pty Ltd 2002, *Plastic Shopping Bags — Analysis of Levies and Environmental Impacts*, prepared for the Department of Environment and Heritage, Canberra.

## 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 around 11% to Australia's gross domestic product in 2001–02. Although the value of the manufacturing industry's gross value added has grown by more than 30% over the past 20 years, the industry's share of the total production of goods and services in the economy has fallen from around 18% to its current level over the period.

In May 2003, there were 1,107,500 people working in the manufacturing industry (including both full-time and part-time workers). This represented approximately 12% of total employed persons. The majority of those employed within the manufacturing industry were full-time (88%) and male (73%), making the manufacturing sector the largest provider of full-time employment of any industry.

The manufacturing industry also dominates Australia's merchandise exports, accounting for 57% of the value of exports by industry of origin in 2002–03.

This chapter presents a range of data about the manufacturing industry as a whole, and about broad subdivisions within the manufacturing industry.

## Economic contribution of the manufacturing industry

Production can be measured on a net basis, the value of goods and services produced less the value of inputs (e.g. labour, capital) used in production. In national accounting terms, the contribution of an industry to the overall production of goods and services in an economy is measured by industry gross value added (GVA). Industry GVA sums the gross value added by each producer in the industry.

Graph 18.1 shows total production of the manufacturing industry measured by industry GVA in chain volume terms (i.e. 'real' output unaffected by price change) increased in most years from 1982–83 to 2001–02. Production levels peaked in 1988–89 before dropping back over the next three years to around the level achieved in 1987–88. Since then manufacturing production has continued to increase at an average rate of 2.5% per year.

Table 18.2 shows the industry GVA of the broad Australian and New Zealand Standard Industrial Classification (ANZSIC) industry subdivisions which make up the manufacturing industry. The table also shows the contribution the manufacturing industry made to Australia's gross domestic product (GDP). During the period 1997–98 to 2001–02, manufacturing industry GVA rose by 8.9%. The overall growth rate of the economy, however, was higher than the rate of

growth of the manufacturing industry, which meant that the contribution manufacturing made to GDP decreased from 11.6% to 10.9% of GDP.

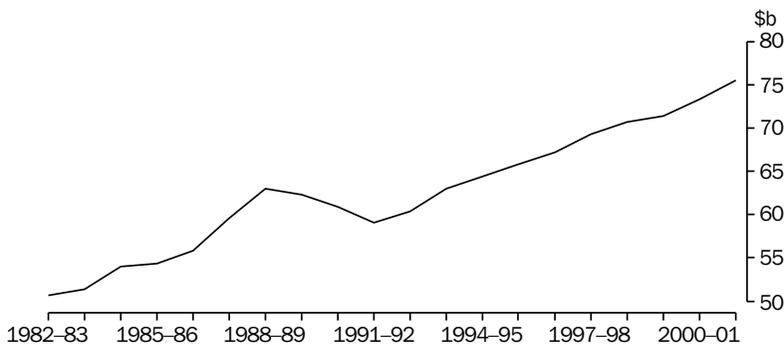
The property and business services industry has been growing at a faster rate than manufacturing, and now accounts for a similar percentage of GDP. According to the Commonwealth Department of Industry Science and Resources:

...much of the growth in property and business services over the past twenty years .... has been due to the increasing tendency in recent years for manufacturing firms to outsource many of their non-core activities (*Structural Change in Australian Industry, 2001*).

The implication being the value of production of some activities traditionally carried out by manufacturing firms themselves, and therefore included as part of the manufacturing industry, has been transferred to the property and business services industry.

Industry GVA rose much more strongly over the period for some manufacturing industry subdivisions than for others. Wood and paper product manufacturing rose by 11% even though there were slight decreases in 1998–99 and 2000–01, while printing, publishing and recorded media increased by 14% and petroleum, coal, chemical and associated product manufacturing rose by 11%. Industry GVA for textiles, clothing, footwear and leather manufacturing decreased by 25% — the only industry subdivision within the sector to record a decrease over the period.

**18.1 MANUFACTURING PRODUCTION(a)**



(a) Industry gross value added. Chain volume measures, reference year is 2000–01.

Source: Australian System of National Accounts, 2001–02 (5204.0).

## 18.2 GROSS VALUE ADDED AND CONTRIBUTION TO GDP, Chain volume measures(a)

Industry subdivision	Units	1997-98	1998-99	1999-2000	2000-01	2001-02	Percentage change from 1997-98 to 2001-02
Industry gross value added							
Food, beverage and tobacco manufacturing	\$m	13 607	14 086	14 288	14 553	14 483	6.4
Textile, clothing, footwear and leather manufacturing	\$m	3 016	3 022	2 942	2 778	2 276	-24.5
Wood and paper product manufacturing	\$m	4 909	4 895	5 279	5 116	5 433	10.7
Printing, publishing and recorded media	\$m	6 321	6 527	6 726	7 087	7 195	13.8
Petroleum, coal, chemical and associated product manufacturing	\$m	9 316	9 447	9 755	10 048	10 348	11.1
Non-metallic mineral product manufacturing	\$m	3 530	3 783	3 995	4 097	3 900	10.5
Metal product manufacturing	\$m	11 945	12 205	11 683	11 639	12 810	7.2
Machinery and equipment manufacturing	\$m	14 154	14 136	14 036	15 341	15 852	12.0
Other manufacturing	\$m	2 619	2 702	2 752	2 695	3 276	25.1
<i>Total</i>	<i>\$m</i>	<i>69 374</i>	<i>70 749</i>	<i>71 429</i>	<i>73 354</i>	<i>75 573</i>	<i>8.9</i>
Contribution to GDP	%	11.6	11.2	10.9	11.0	10.9	..

(a) Reference year for chain volume measures is 2000-01.

Source: Australian System of National Accounts, 2001-02 (5204.0).

### Structure and performance of the manufacturing industry

The major source for the statistics used in this section is the Economic Activity Survey (EAS) of employing businesses conducted by the Australian Bureau of Statistics (ABS). This collection is a combination of sample surveys encompassing the manufacturing industry as well as other industries in the economy. Businesses in this collection are classified on the basis of their 'predominant' activity, using the 1993 version of the Australian and New Zealand Standard Industrial Classification (ANZSIC).

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 through the EAS. The advantage of IVA, however, is the availability of more detailed industry and state estimates.

#### Summary of operations in 2000-01

At 30 June 2001, manufacturing businesses in Australia employed 945,900 persons. This includes full-time and part-time employees, but does not include directors who are not paid a salary or self-employed persons such as contractors, owner

drivers, consultants or persons paid solely by commission without a retainer. During 2000-01, manufacturing businesses paid \$42,920m in labour costs, generated \$251,759m of sales of goods and services income, and \$71,945m of IVA (table 18.3).

The manufacturing industry subdivisions with the most persons employed at 30 June 2001 were: machinery and equipment manufacturing (202,200); food, beverage and tobacco manufacturing (189,600); and metal product manufacturing (147,000). The non-metallic mineral product manufacturing industry was the smallest employer, accounting for only 37,200 (or 3.9%) of persons employed in the manufacturing industry.

Food, beverage and tobacco manufacturing was the largest contributor to total manufacturing sales and service income and total manufacturing IVA. This industry's sales and service income of \$56,626m was 22% of the total for manufacturing, and its IVA of \$14,709m accounted for 20%. Other industry subdivisions making major contributions were: machinery and equipment manufacturing (20% of sales and service income and 19% of IVA); petroleum, coal, chemical and associated product manufacturing (19% and 14%); and metal product manufacturing (16% and 19%).

### 18.3 SUMMARY OF OPERATIONS — 2000-01

Industry subdivision	Employment at	Labour	Sales of	Industry
	30 June	costs(a)	goods and	value
	'000	\$m	services	added
			income	
			\$m	\$m
Food, beverage and tobacco manufacturing	189.6	8 173	56 626	14 709
Textile, clothing, footwear and leather manufacturing	57.8	1 951	9 111	2 583
Wood and paper product manufacturing	65.0	2 751	15 077	4 929
Printing, publishing and recorded media	91.6	4 213	15 929	6 599
Petroleum, coal, chemical and associated product manufacturing	101.3	5 537	47 115	9 960
Non-metallic mineral product manufacturing	37.2	1 903	9 777	3 606
Metal product manufacturing	147.0	6 999	40 517	13 655
Machinery and equipment manufacturing	202.2	9 621	50 645	13 487
Other manufacturing	54.2	1 772	6 963	2 417
<b>Total manufacturing</b>	<b>945.9</b>	<b>42 920</b>	<b>251 759</b>	<b>71 945</b>

(a) Includes wages and salaries, payroll tax, fringe benefits taxes, workers compensation costs and employers contributions to superannuation.

Source: *Manufacturing Industry, Australia, 2000-01* (8221.0).

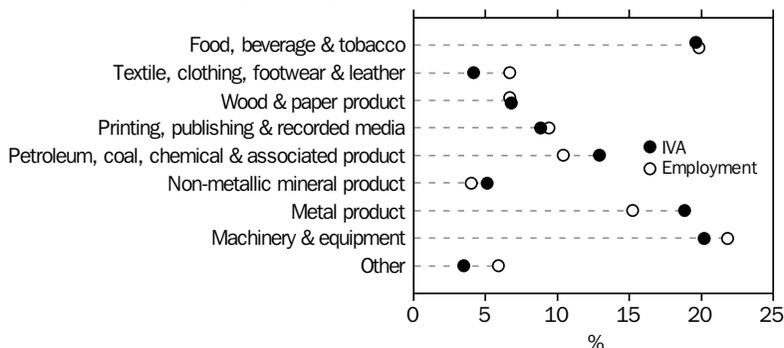
The generally close relationship between share of employment and contribution to IVA is indicated in graph 18.4. The three largest industry subdivisions for both employment and IVA, namely machinery and equipment manufacturing; food, beverage and tobacco manufacturing; and metal product manufacturing, employed 57% of the manufacturing workforce in 2000-01 and contributed 58% of IVA.

#### State distribution of activity

In 2000-01, New South Wales and Victoria continued to be the largest contributors to manufacturing IVA, each accounting for 32% of

total manufacturing IVA (table 18.5). New South Wales contributed 40% of the total IVA of the printing, publishing and recorded media industry and between 26% and 33% of the total IVA of the remaining manufacturing industries. Victoria contributed 50% of the total IVA of the textile, clothing, footwear and leather manufacturing industry, 39% of the total IVA of the machinery and equipment manufacturing industry and between 24% and 37% of the total IVA of the remaining manufacturing industries.

**18.4 INDUSTRY VALUE ADDED AND EMPLOYMENT,  
By industry subdivision — 2000-01**



Source: *Manufacturing Industry, Australia, 2000-01* (8221.0).

Although Queensland accounted for 14% of overall manufacturing IVA, it contributed 17% for both metal product manufacturing and food, beverage and tobacco manufacturing. The contributions of South Australia and Western Australia to total manufacturing IVA were similar at 8.6% and 9.4% respectively, although the structure of the manufacturing industry was very different. Machinery and equipment manufacturing was the largest manufacturing industry in South Australia, accounting for 29% of state production and 13% of the total IVA for the industry. South Australia also contributed between 5.9% and 11% of the total IVA of the remaining manufacturing industries. Western Australia contributed 17% of total IVA for metal product manufacturing and 13% of non-metallic mineral product manufacturing.

Metal product manufacturing was the largest manufacturing industry in the state, accounting for 34% of state production.

Manufacturing was not as significant for the remaining state and territories. Tasmania, which accounted for 2.4% of total manufacturing IVA, contributed 6.6% of total IVA for wood and paper product manufacturing. The share of national production for the Northern Territory and the Australian Capital Territory were each less than 1%.

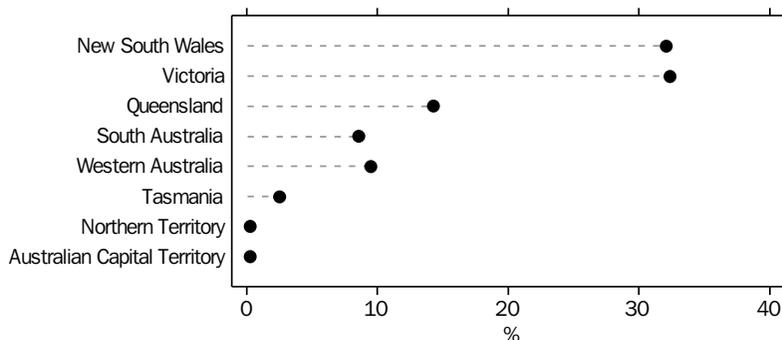
Graph 18.6 shows relative contributions to overall manufacturing production by states and territories in 2000–01. Victoria and New South Wales contributed approximately two-thirds of Australian manufacturing production between them.

### 18.5 MANUFACTURING INDUSTRY VALUE ADDED — 2000–01

Industry subdivision	NSW \$m	Vic. \$m	Qld \$m	SA \$m	WA \$m	Tas. \$m	NT \$m	ACT \$m	Aust. \$m
Food, beverage and tobacco manufacturing	4 681	4 571	2 559	1 492	934	409	34	29	14 709
Textile, clothing, footwear and leather manufacturing	681	1 302	211	177	150	58	n.p.	n.p.	2 583
Wood and paper product manufacturing	1 511	1 405	807	540	324	323	5	15	4 929
Printing, publishing and recorded media	2 668	1 976	799	390	540	76	32	119	6 599
Petroleum, coal, chemical and associated product manufacturing	3 105	3 688	1 199	580	1 237	140	8	3	9 960
Non-metallic mineral product manufacturing	1 176	934	602	291	451	103	27	23	3 606
Metal product manufacturing	4 340	3 273	2 362	764	2 269	470	n.p.	n.p.	13 655
Machinery and equipment manufacturing	4 115	5 311	1 368	1 798	651	162	34	49	13 487
Other manufacturing	791	793	417	162	225	15	n.p.	n.p.	2 418
<b>Total manufacturing</b>	<b>23 067</b>	<b>23 251</b>	<b>10 323</b>	<b>6 192</b>	<b>6 780</b>	<b>1 757</b>	<b>301</b>	<b>274</b>	<b>71 946</b>

Source: *Manufacturing Industry, Australia, 2000–01* (8221.0).

### 18.6 MANUFACTURING PRODUCTION(a) — 2000–01



(a) Production is measured by industry value added.

Source: *Manufacturing Industry, Australia, 2000–01* (8221.0).

Table 18.7 shows the four states in which the manufacturing industry's contribution to state production over time was most significant. The trend for the manufacturing industry's share of the total production in all of these states has been decreasing, even though manufacturing production actually increased over this period. This is because the growth in manufacturing production has been slightly slower than growth in production in other industries in each of these states.

Table 18.8 shows the IVA and employment of the manufacturing industry in each state and territory. Victoria and New South Wales were the major contributors to manufacturing employment, accounting for 32% and 31% respectively of total manufacturing employment in Australia. Together they accounted for almost two-thirds of total manufacturing employment at 30 June 2001. In all manufacturing industries, either New South Wales or Victoria was the largest employing state. The proportions contributed by Victoria to persons employed in the various industries ranged from 26% for metal product manufacturing to 47% for textile, clothing, footwear and leather manufacturing while New South Wales' contributions varied from 26% for textile, clothing, footwear and leather manufacturing to 39% for printing, publishing and recorded media

manufacturing. Machinery and equipment manufacturing accounted for the largest proportion of persons employed in the manufacturing industry in both these states.

The largest industry employers in the other states and territories were food, beverage and tobacco manufacturing in Queensland (27%) and Tasmania (31%); machinery and equipment manufacturing in South Australia (33%); metal product manufacturing in Western Australia (21%) and Northern Territory (36%); and printing, publishing and recorded media in the Australian Capital Territory (39%).

Table 18.8 also shows IVA per person employed. In 2000–01 total manufacturing IVA per person employed ranged from \$67,000 in the Australian Capital Territory and South Australia to \$91,000 in the Northern Territory and Western Australia. This difference could be attributed to the industry mix within each state or territory. For instance, the relatively capital intensive petroleum, coal, chemical and associated product manufacturing, which made up a significant proportion of Western Australia's manufacturing production, had a much higher IVA per person than textile, clothing, footwear and leather manufacturing, which was a relatively small sector in Western Australia.

### 18.7 MANUFACTURING'S CONTRIBUTION TO STATE PRODUCTION(a), Selected states

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
New South Wales	13.9	14.4	14.3	14.1	13.5	13.8	13.3	12.8	12.2	11.9
Victoria	17.1	17.2	17.5	17.4	17.2	17.2	16.1	15.5	15.1	14.5
South Australia	16.6	17.0	16.8	16.7	16.6	17.1	15.5	14.9	14.3	14.3
Tasmania	14.6	14.4	14.8	14.9	14.5	14.7	14.9	14.8	14.6	14.2
Australia	13.5	13.9	13.9	13.8	13.5	13.6	12.9	12.4	12.0	11.7

(a) State production as measured by total factor income at current prices.

Source: Australian National Accounts, State Accounts, 2001–02 (5220.0).

## 18.8 MANUFACTURING INDUSTRY VALUE ADDED AND EMPLOYMENT — 2000-01

	Industry value added	Employment at 30 June	Industry value added per person employed
	\$m	'000	\$'000
New South Wales	23 067	296	78
Victoria	23 251	302	77
Queensland	10 323	153	68
South Australia	6 192	93	67
Western Australia	6 780	74	91
Tasmania	1 757	21	85
Northern Territory	301	3	91
Australian Capital Territory	274	4	67
<b>Australia</b>	<b>71 946</b>	<b>946</b>	<b>76</b>

Source: *Manufacturing Industry, Australia, 2000-01 (8221.0)*.

### Employment

The number of full-time and part-time workers by sex in each manufacturing subdivision is provided in table 18.9. The number of employed persons shown in table 18.9 differs from the employment figures in tables 18.3 and 18.8 mainly because it includes directors who are not paid a salary and self-employed persons such as contractors, owner/drivers, consultants and persons paid solely by commission without a retainer. These categories are excluded from the employment figures in tables 18.3 and 18.8.

In May 2003, the manufacturing industry employed 12% of all persons employed in Australia. Males outnumbered females by a ratio of

almost 3:1 (73% males and 27% females). The vast majority of males employed in the manufacturing industry (94%) were employed full-time. The corresponding proportion for females was considerably lower (71%).

The proportion of people with full-time jobs in manufacturing has fallen slightly over the past 10 years, from 95% for males and 75% for females in May 1993. This is consistent with the decline in the proportion of full-time employment over the same time period for all industries, with male full-time employment falling from 90% to 85% and female full-time employment falling from 58% to 54%.

## 18.9 EMPLOYED PERSONS, Status in employment — May 2003

Industry subdivision	Males			Females			Persons		
	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total
	'000	'000	'000	'000	'000	'000	'000	'000	'000
Food, beverage and tobacco manufacturing	107.8	9.0	116.8	46.6	14.2	60.8	154.4	23.2	177.6
Textile, clothing, footwear and leather manufacturing	27.5	2.1	29.6	29.5	9.3	38.8	57.0	11.4	68.4
Wood and paper product manufacturing	58.9	3.5	62.4	9.5	4.1	13.6	68.4	7.6	76.0
Printing, publishing and recorded media	62.3	7.3	69.6	33.0	17.8	50.8	95.3	25.1	120.4
Petroleum, coal, chemical and associated product manufacturing	75.8	3.2	79.0	24.7	6.3	31.0	100.5	9.4	109.9
Non-metallic mineral product manufacturing	39.2	2.4	41.6	5.8	3.7	9.5	45.0	6.1	51.1
Metal product manufacturing	136.1	5.1	141.2	12.8	10.3	23.1	148.8	15.4	164.2
Machinery and equipment manufacturing	195.8	8.7	204.5	37.8	12.4	50.2	233.6	21.1	254.7
Other manufacturing	61.3	4.5	65.8	12.5	6.7	19.2	73.8	11.2	85.0
<b>Total manufacturing</b>	<b>764.7</b>	<b>45.8</b>	<b>810.5</b>	<b>212.2</b>	<b>84.8</b>	<b>297.0</b>	<b>976.8</b>	<b>130.5</b>	<b>1 107.3</b>

Source: *Labour Force Australia, Detailed — Electronic Delivery (6291.0.55.001)*.

The largest employers of males were machinery and equipment manufacturing (25%) and metal product manufacturing (17%). The largest employers of females were food, beverage and tobacco manufacturing (21%) and printing, publishing and recorded media manufacturing (18%).

Further information on employed wage and salary earners and the characteristics of the manufacturing labour force is provided in *Chapter 6, Labour*.

Table 18.10 presents information on average weekly total earnings (i.e. ordinary time earnings plus overtime earnings) of employees in the manufacturing industry and all industries. Between May 1984 and May 2003, the average earnings of full-time employees increased by 159% in the manufacturing industry, which was slightly higher than the increase of 149% for all industries. The earnings of both male and female full-time employees in manufacturing increased but the increase for female employees was 22 percentage points more than the increase for male employees, although female earnings came from a lower base and are still well below average male earnings.

In the manufacturing industry, the average weekly earnings for male full-time employees at May 2003 was higher by 28% than female full-time

employees. In May 1984, male full-time employees were earning 39% more than female full-time employees. In May 2003, the difference in average earnings between male and female full-time employees was: 31% in food, beverage and tobacco manufacturing (\$902 per week for male employees compared to \$688 for female employees); 25% in metal product manufacturing (\$903 compared to \$702); and 23% in machinery and equipment manufacturing (\$959 compared to \$780). The most highly paid female full-time employees were in the petroleum, coal, chemical and associated product manufacturing and non-metallic mineral product manufacturing with average weekly earnings of \$855 and \$824 respectively.

### Sales and service income

Sales and service income of employing businesses comprises sales of goods whether or not produced by the business (including goods produced for the business on a commission basis) and income from service activities. Service income includes income from work done or sales made on a commission basis, income from repair, maintenance or servicing, advertising income, installation and delivery charges separately invoiced to customers, and management fees/charges received from related and unrelated businesses.

#### 18.10 AVERAGE WEEKLY EARNINGS(a)

			All employees			Full-time
	May 1984	May 2003	Change from May 1984 to May 2003	May 1984	May 2003	Change from May 1984 to May 2003
	\$	\$	%	\$	\$	%
<b>Males</b>						
Manufacturing	376.60	947.70	151.6	395.30	999.90	153.0
All industries	383.80	872.10	127.2	415.70	1 033.80	148.7
<b>Females</b>						
Manufacturing	261.60	613.40	134.4	284.70	783.10	175.1
All industries	257.10	567.20	120.6	324.20	834.00	157.3
<b>Persons</b>						
Manufacturing	347.20	861.30	148.1	368.70	956.50	159.4
All industries	333.40	724.60	117.4	386.30	961.80	148.9

(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 be changes in the overall composition of the wage and salary earner segment of the labour force.

Source: *Average Weekly Earnings, Australia (6302.0)*.

Table 18.11 shows that sales and service income for the manufacturing industry was \$252b in 2000–01. Food, beverage and tobacco manufacturing recorded the largest sales income in each of the last six years, accounting for 23% of all sales income earned in the manufacturing industry in 2000–01.

Over the period 1995–96 to 2000–01, income from sales of goods and services increased by 21% for manufacturing as a whole. Manufacturing subdivisions with the largest increases over the period were: petroleum, coal, chemical and associated product manufacturing (33%); food, beverage and tobacco manufacturing (28%); machinery and equipment manufacturing (24%); and wood and paper products manufacturing (24%).

Sales of goods and services in the textile, clothing, footwear and leather manufacturing subdivision decreased by 10% over the 1995–96 to 2000–01 period.

During 2000–01, sales and service income in the manufacturing industry increased overall by 4.8%. The petroleum, coal, chemical and associated product manufacturing subdivision, recorded the largest increase over the year (18%).

In 2000–01, Victoria (with 32% of national manufacturing sales and service income) and New South Wales (with 31%) continued to be the largest manufacturing states (table 18.13). Victoria contributed 49% of the total sales and service

income of the textile, clothing, footwear and leather manufacturing industry; 37% of the total sales and service income of the machinery and equipment manufacturing industry; and between 23% and 36% of the total sales and service income of the remaining manufacturing industries. New South Wales contributed 43% of the total sales and service income of the printing, publishing and recorded media industry, and between 26% and 35% of the total sales and service income of the remaining manufacturing industries.

The contributions of the remaining states and territories to manufacturing industries were not as great. Queensland contributed the third largest proportion of total manufacturing sales and service income with 16%. It accounted for 22% of total sales and service income for food, beverage and tobacco manufacturing. Its contributions to other industries were smaller, varying from 7.6% to 19%. South Australia contributed the next largest proportion of manufacturing sales with 9.4%, closely followed by Western Australia (8.6%). The contribution of South Australia to total sales and service income for machinery and equipment manufacturing of 20% was the most prominent compared to its contribution to other industries which varied from 3.9% to 9%. Western Australia accounted for 13% of recorded sales and service income for three industries namely: non-metallic mineral product manufacturing; petroleum, coal, chemical and associated product manufacturing; and metal product manufacturing.

**18.11 SALES AND SERVICE INCOME**

Industry subdivision	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01
	\$m	\$m	\$m	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	44 350	45 712	49 200	51 732	54 562	56 626
Textiles, clothing, footwear and leather manufacturing	9 921	10 288	10 601	10 097	9 299	9 111
Wood and paper products manufacturing	11 845	11 890	12 796	14 436	15 490	15 077
Printing, publishing and recorded media	13 685	14 893	15 342	16 053	17 508	15 929
Petroleum, coal, chemical and associated product manufacturing	35 448	37 492	37 913	36 808	39 816	47 115
Non-metallic mineral product manufacturing	9 524	9 832	10 364	10 911	11 075	9 777
Metal product manufacturing	35 325	34 561	34 749	36 304	38 718	40 517
Machinery and equipment manufacturing	41 564	42 398	43 645	46 473	46 825	50 645
Other manufacturing	5 700	6 264	6 528	6 791	6 853	6 963
<b>Total manufacturing</b>	<b>207 363</b>	<b>213 330</b>	<b>221 138</b>	<b>229 603</b>	<b>240 145</b>	<b>251 759</b>

Source: *Summary of Industry Performance, Australia, 2000–01 Data Report, Electronic Delivery (8140.0.55.002); Manufacturing Industry, Australia, 2000–01 (8221.0).*

### 18.12 SALES AND SERVICE INCOME, By state/territory — 2000–01

Industry subdivision	NSW \$m	Vic. \$m	Qld \$m	SA \$m	WA \$m	Tas. \$m	NT \$m	ACT \$m	Aust. \$m
Food, beverage and tobacco manufacturing	17 178	16 898	12 314	4 631	4 190	1 200	119	99	56 626
Textile, clothing, footwear and leather manufacturing	2 526	4 467	687	848	411	159	n.p.	n.p.	9 111
Wood and paper product manufacturing	4 762	4 464	2 491	1 237	846	1 202	17	59	15 077
Printing, publishing and recorded media	6 863	5 045	1 676	870	1 037	156	55	226	15 929
Petroleum, coal, chemical and associated product manufacturing	14 879	16 755	7 288	1 816	5 915	406	45	12	47 115
Non-metallic mineral product manufacturing	3 021	2 391	1 892	823	1 233	243	94	80	9 777
Metal product manufacturing	14 105	9 471	7 282	2 593	5 051	1 332	n.p.	n.p.	40 517
Machinery and equipment manufacturing	13 163	18 681	5 535	10 334	2 325	297	191	118	50 645
Other manufacturing	2 163	2 408	1 129	473	695	49	n.p.	n.p.	6 963
<b>Total manufacturing</b>	<b>78 659</b>	<b>80 580</b>	<b>40 292</b>	<b>23 623</b>	<b>21 702</b>	<b>5 044</b>	<b>1 138</b>	<b>721</b>	<b>251 759</b>

Source: *Manufacturing Industry, Australia, 2000–01* (8221.0).

### Operating profit before tax

Table 18.13 shows the operating profit before tax (OPBT) earned by all manufacturing businesses. Industry subdivisions contributing most to manufacturing industry profits for 2000–01 were: metal product manufacturing (\$3,842m or 25% total manufacturing OPBT); food, beverage and tobacco manufacturing (24%); petroleum, coal, chemical and associated product manufacturing (14%); and machinery and equipment manufacturing (12%).

Profits for five industry subdivisions were higher in 2000–01 than they were for 1995–96, although there were some significant movements in profits in the intervening years. Metal product manufacturing profits were much higher in 2000–01 than in 1995–96, but actually fell in 1996–97 and 1998–99 before recovering strongly in 1999–2000 (up 24%) and then even more strongly in 2000–01 (up 33%). Printing, publishing and recorded media profits, at \$1,387m in 2000–01, were very similar to the \$1,266m profit in 1995–96, but were 32% lower than the \$2,044m profit for the manufacturing subdivision in 1999–2000.

### 18.13 OPERATING PROFIT BEFORE TAX

Industry subdivision	1995–96 \$m	1996–97 \$m	1997–98 \$m	1998–99 \$m	1999–2000 \$m	2000–01 \$m
Food, beverage and tobacco manufacturing	2 321	2 479	2 946	2 966	3 379	3 780
Textiles, clothing, footwear and leather manufacturing	435	404	381	354	409	107
Wood and paper products manufacturing	872	790	845	1 078	1 275	1 031
Printing, publishing and recorded media	1 266	1 174	1 459	1 519	2 044	1 387
Petroleum, coal, chemical and associated product manufacturing	2 179	2 351	2 068	1 865	2 603	2 231
Non-metallic mineral product manufacturing	917	811	829	924	1 123	914
Metal product manufacturing	2 685	2 292	2 515	2 342	2 898	3 842
Machinery and equipment manufacturing	2 621	2 471	2 213	1 832	1 942	1 853
Other manufacturing	397	300	343	266	371	365
<b>Total manufacturing</b>	<b>13 693</b>	<b>13 072</b>	<b>13 601</b>	<b>13 146</b>	<b>16 042</b>	<b>15 509</b>

Source: *Summary of Industry Performance, Australia, Final 2000–01 Data Report, Electronic Delivery* (8140.0.55.002).

## Contribution by size of business

In this section, the performance of manufacturing businesses is examined in relation to the size of those businesses. Employing businesses have been classified as small, medium or large according to the number of people employed by the business at 30 June 2001. Businesses employing fewer than 20 persons have been classified as small, those employing at least 20 but less than 100 persons have been classified as medium and those employing 100 or more persons have been classified as large businesses.

Graph 18.14 shows that large businesses employed more than 50% of the people working in the manufacturing industry, and their share of economic activity, as measured by income, profits and capital outlays, was around 75%. Small businesses employed 24% of the manufacturing work force, but their share of manufacturing activity was much less significant, at around 11%.

## Capital expenditure

The manufacturing industry was responsible for \$11.0b of capital expenditure in 2000–01, which accounted for 14% of capital expenditure by businesses in all industries. Within manufacturing, the subdivisions with largest capital expenditure were: food, beverage and tobacco manufacturing (23% of total manufacturing capital expenditure); petroleum, coal, chemical and associated product

manufacturing (20%); metal product manufacturing (18%); and machinery and equipment manufacturing (15%).

As table 18.15 shows, capital expenditure by the manufacturing industry decreased by 5.4% over the period 1995–96 to 2000–01.

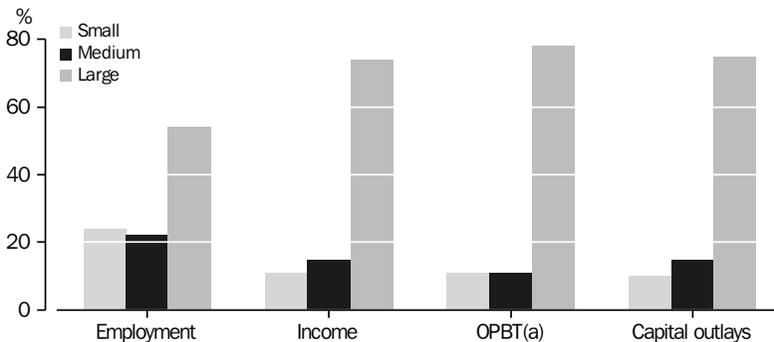
A majority of manufacturing subdivisions recorded increases in capital expenditure over the 1995–96 to 2000–01 period; the largest increase was in printing, publishing and recorded media (up 72% or \$384m). However, the increases were offset by decreases in expenditure mainly in metal product manufacturing (down 33% or \$1.0b), and wood and paper product manufacturing (down 36% or \$324m).

## International trade by industry of origin

### Exports by industry of origin

Table 18.16 shows that the manufacturing sector dominates Australia's value of exports by industry of origin, accounting for 57% of total exports in 2002–03. Over the period 1992–93 to 2002–03, the value of manufacturing exports has increased by 75%. However, the share of total value of exports of the manufacturing industry fluctuated, with the trend being slightly down each year since the high of 65% in 1994–95.

**18.14 SHARE OF MANUFACTURING ACTIVITY, By size of business — 2001**



(a) Operating profit before tax.

Source: ABS data available on request, *Manufacturing Survey, 2000–01*.

### 18.15 CAPITAL EXPENDITURE

Industry subdivision	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	Change from 1995-96 to 2000-01
	\$m	\$m	\$m	\$m	\$m	\$m	%
Food, beverage and tobacco manufacturing	2 402	2 400	2 915	2 822	2 189	2 537	5.6
Textile, clothing, footwear and leather manufacturing	253	421	465	290	257	278	9.9
Wood and paper product manufacturing	907	1 048	734	988	900	583	-35.7
Printing, publishing and recorded media	538	595	859	807	933	925	71.9
Petroleum, coal, chemical and associated product manufacturing	2 010	2 109	1 918	1 943	1 942	2 181	8.5
Non-metallic mineral product manufacturing	677	710	792	573	616	593	-12.4
Metal product manufacturing	3 031	1 575	3 034	3 099	1 949	2 020	-33.4
Machinery and equipment manufacturing	1 656	1 455	2 072	1 589	1 347	1 682	1.6
Other manufacturing	188	200	220	293	245	232	23.4
<b>Total</b>	<b>11 664</b>	<b>10 513</b>	<b>13 007</b>	<b>12 404</b>	<b>10 379</b>	<b>11 031</b>	<b>-5.4</b>

Source: Summary of Industry Performance, Australia, Final 2000-01 Data Report, Electronic Delivery (8140.0.55.002).

### 18.16 VALUE OF EXPORTS, By industry of origin(a)

Year	Manufacturing	All industries	Manufacturing share of total exports
	\$m	\$m	%
1992-93	37 551	60 702	61.9
1993-94	41 478	64 548	64.3
1994-95	43 795	67 052	65.3
1995-96	48 787	76 005	64.2
1996-97	48 494	78 932	61.4
1997-98	53 301	87 768	60.7
1998-99	52 073	85 991	60.6
1999-2000	57 982	97 286	59.6
2000-01	69 128	112 539	57.8
2001-02	69 111	121 108	57.1
2002-03	65 668	115 445	56.9

(a) On a free-on-board (f.o.b.) basis.

Source: ABS data available on request, International Trade.

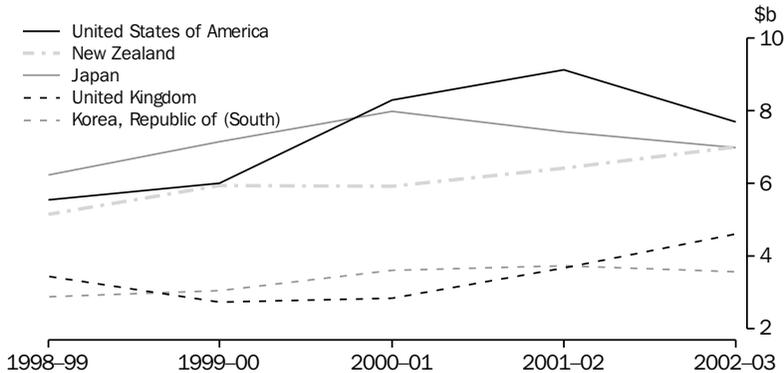
Graph 18.17 shows the top five destinations for manufacturing commodities exported from Australia, during the period 1998–99 to 2002–03. The United States of America was the largest destination of Australian manufacturing exports in terms of value, with \$7.7b worth exported in 2002–03, down from \$9.1b in 2001–02. This was the first decrease in five years for manufacturing exports to the United States of America. Similarly, the value of Australian manufacturing exports to the Republic of (South) Korea decreased by 4.5% to \$3.6b in 2002–03 from \$3.7b in 2001–02. In 2000–01, manufacturing exports to Japan reached a peak for the period of \$8.0b, but the value has since fallen 12% to \$7.0b in 2002–03.

The value of manufacturing exports to New Zealand rose 36%, from \$5.2b in 1998–99 to \$7.0b, in 2002–03. After dropping from \$3.5b in 1998–99 to \$2.7b in 1999–2000, the value of manufacturing exports to the United Kingdom has increased 69% to \$4.6b in 2002–03.

### Imports by industry of origin

Table 18.18 shows that the manufacturing sector accounted for over 90% of Australia's value of imports by industry of origin during the period 1993–94 to 2002–03. Over this period, the value of manufacturing imports has increased by 82% compared to the increase of 86% for all industries. The value of mining imports increased by 182%, which accounts for the slightly higher rate of increase for all industries.

**18.17 MANUFACTURING EXPORTS(a), Main destinations**



(a) Manufacturing exports are all those commodities that are defined under ANZSIC Division C — Manufacturing.

Source: ABS data available on request, *International Trade*.

**18.18 VALUE OF IMPORTS, By industry of origin(a)**

	Manufacturing	All industries	Manufacturing share
	\$m	\$m	of total imports %
1993–94	61 103	64 470	94.8
1994–95	70 733	74 619	94.8
1995–96	73 545	77 792	94.5
1996–97	73 747	78 998	93.4
1997–98	85 746	90 684	94.6
1998–99	92 437	97 611	94.7
1999–2000	92 437	97 611	94.7
2000–01	102 382	110 078	93.0
2001–02	108 331	118 317	91.6
2002–03	111 162	119 649	92.9

(a) Customs value.

Source: ABS data available on request, *International Trade*.

Graph 18.19 shows the top five countries for manufacturing commodities imported to Australia, in the period 1993–94 to 2002–03. In each year of this period, Australia imported more manufactured goods from the United States of America than from any other country. In 2002–03, the value of manufactured imports from the United States of America was \$21.9b, slightly less than the high of \$22.4b imported in 1999–2000. The value of manufacturing imports from the United Kingdom has been relatively stable at around \$5.5b to \$6.2b since 1997–98, after an increase between 1993–94 to 1997–98 of 52%.

The largest growth has been in manufacturing imports from China. In the period 1993–94 to 2002–03, the increase in value of manufacturing imports from China was 343%, compared to a 62% increase in value of imports from the United States of America, a 56% increase from the United Kingdom, and a 29% increase from Japan.

## Leading producers in selected industries

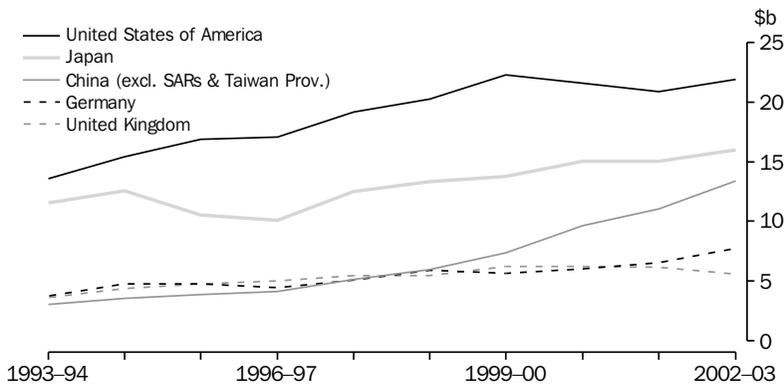
The United Nations Industrial Development Organization (UNIDO) provides a range of statistical indicators to facilitate international comparisons relating to the manufacturing industry.

Table 18.20 lists the world's leading producers, excluding China, the former USSR and eastern Europe, in selected manufacturing industries in

2001. Globally, manufacturing in many sectors was dominated by the United States of America, Japan and Germany. Of the countries included in the UNIDO statistics, Australia was the 12th largest producer of food products and beverages in 2001, accounting for 1.8% of measured world production, compared to the 22% produced by the United States of America. Australia's \$13.6b production of metal products was not enough to see it included in the top 15 countries in 2001, although it ranked 14th in 1990. In printing and publishing, Australia was ranked 11th. Other industries in which Australia was ranked in the top 15 producers in the countries included in the UNIDO statistics are listed in table 18.20.

Graph 18.21 depicts the manufacturing value added (MVA) for the year 2000 of selected countries. MVA is a measure of the contribution to GDP the manufacturing industry makes. The manufacturing industry contribution to GDP of China stands out at 35%. Australian MVA, contributing 13% to GDP, is lower than most other industrialised countries, many of which are close to, or above, 20%. However, for many countries, the contribution of MVA to GDP is reducing. For instance, from 1985 to 2000 the average of countries in the European Union declined from 26% to 21% MVA in GDP. The United States of America fell from 19% to 16% over the same period, while in Australia the manufacturing industry contributed 17% to GDP in 1985, falling to 13% in 2000.

**18.19 MANUFACTURING IMPORTS(a), Selected countries**



(a) Customs value.

Source: ABS data available on request, *International Trade*.

### 18.20 LEADING PRODUCERS IN SELECTED INDUSTRIES — 2001

Country or area	Rank	Percentage(a)
<b>FOOD PRODUCTS AND BEVERAGE</b>		
United States of America	1	22.2
Japan	2	13.1
Germany, western part	3	8.2
Australia	12	1.8
<b>WOOD AND CORK PRODUCTS</b>		
United States of America	1	24.7
Japan	2	9.9
Germany, western part	3	9.4
Australia	14	1.8
<b>PRINTING AND PUBLISHING</b>		
United States of America	1	32.4
Japan	2	20.7
United Kingdom	3	6.6
Australia	11	1.3
<b>BASIC METALS</b>		
Japan	1	19.6
United States of America	2	15.3
Germany, western part	3	9.5
Australia	14	1.7
<b>METAL PRODUCTS</b>		
United States of America	1	23.4
Germany, western part	2	16.8
Japan	3	16.3
Australia	not in top 15	n.a.
<b>TRANSPORT EQUIPMENT</b>		
United States of America	1	25.9
Japan	2	16.7
Germany, western part	3	13.0
Australia	15	0.9

(a) In world total value added (excluding eastern Europe, the former USSR, and China (but including Hong Kong and Taiwan)) at constant 1990 prices.

Source: United Nations Industrial Development Organization, 'International Yearbook of Industrial Statistics 2003'.

## Manufactured commodities

### Production of selected manufactured commodities

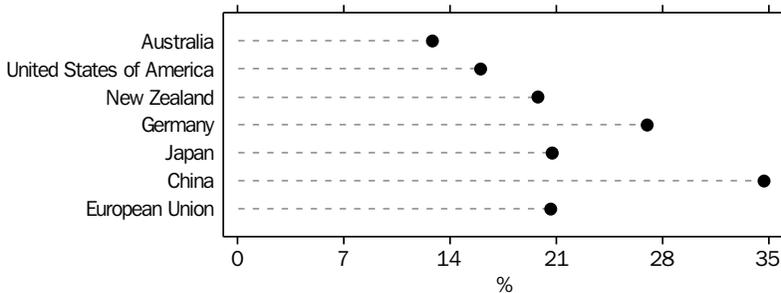
Table 18.22 shows the production of selected manufactured commodities for the period 1998–99 to 2001–02.

Volumes of unfortified wine, which includes red, white and rose wines, increased every year and was 49% higher in 2001–02 compared to volumes produced in 1998–99. Beer production, on the other hand, has remained at approximately the same level over the same period. Similarly, production of red meat has remained steady throughout the period while production of chicken meat has increased each year to be 18% higher in 2001–02 than in 1998–99. Tobacco and cigarette production trended down over the period, and was 13% lower in 2001–02 than production levels in 1998–99.

The major textiles commodities have for the most part decreased over the period, with production levels of cotton yarns in 2001–02 nearly 40% lower than in 1998–99. Production of wool and man-made fibre tops fell back to around 1998–99 levels in 2001–02, which were 12% lower than the high achieved in 2000–01.

Production of hardwood woodchips rose by 27% in 1999–2000 and by a further 4% in 2000–01 before falling by 8% in 2001–02. Production in 2001–02 was 22% higher than in 1998–99. Production of selected building materials, including ready mixed concrete, fluctuated over the 1998–99 to 2001–02 period, with 2000–01 being a year where production of all selected building materials fell from the 1999–2000 high, and 2001–02 seeing production levels rising again.

### 18.21 SHARE OF MANUFACTURING VALUE ADDED(a) IN GDP, Selected countries — 2000



(a) Manufacturing value added, at current prices.

Source: UN Industrial Development Organization, 'International Yearbook of Industrial Statistics 2003'.

## 18.22 MANUFACTURING PRODUCTION, Selected commodities

	Units	1998-99	1999-2000	2000-01	2001-02	Percentage change from 1998-99 to 2001-02
<b>Selected vehicles</b>						
Cars and station wagons for fewer than 10 persons	no.	340 446	314 475	340 099	318 951	-6.3
Semi-trailers	no.	3 966	3 934	3 755	4 053	2.2
<b>Selected food products and beverages</b>						
Brandy	'000L	787	676	640	417	-47.0
Grape spirit	'000L	5 443	6 106	4 456	6 731	23.7
Unfortified wine	'000L	771 957	779 149	1 016 306	1 150 854	49.1
Red meat	'000 t	3 009	3 031	3 171	3 067	1.9
Chicken meat	'000 t	564	598	619	667	18.3
Milk	ML	10 178	10 847	10 545	11 271	10.7
Cheese	'000 t	320	369	361	413	29.1
Butter	'000 t	176	170	160	164	-6.8
Beer	ML	1 738	1 768	1 745	1 744	0.3
Tobacco and cigarettes	t	21 045	20 688	19 125	18 367	-12.7
Sugar	kt	4 998	5 448	4 162	4 610	-7.8
<b>Selected textiles</b>						
Scoured and carbonised wool	t	129 753	118 558	124 679	99 924	-23.0
Wool and man-made fibre tops	t	53 162	55 335	61 315	53 828	1.3
Wool yarns	t	17 668	19 020	14 894	15 815	-10.5
Cotton yarns	t	55 824	47 230	39 305	33 780	-39.5
<b>Selected petroleum and metal products</b>						
Automotive gasoline	ML	18 705	18 652	17 887	18 000	-3.8
Fuel oil	ML	1 634	1 839	1 951	1 684	3.1
Aviation turbine fuel	ML	5 218	5 539	5 836	5 390	3.3
Automotive diesel oil	ML	12 968	12 737	13 212	13 065	0.7
Alumina	'000 t	14 208	15 037	16 099	16 417	15.5
Pig iron	kt	7 453	6 489	6 096	6 062	-18.7
Raw steel	kt	8 549	8 053	8 003	8 311	-2.8
<b>Selected paper and wood products</b>						
Newsprint	'000 t	399	381	392	398	-0.3
Wood pulp	'000 t	871	861	895	843	-3.2
Undressed sawn timber	'000 m <sup>3</sup>	3 613	3 983	3 523	4 120	14.0
Hardwood woodchips	'000 t	4 856	6 164	6 402	5 912	21.7
<b>Selected building materials</b>						
Portland cement	'000 t	7 705	7 937	6 820	7 236	-6.1
Clay bricks	m	1 593	1 736	1 448	1 514	-5.0
Ready mixed concrete	'000 m <sup>3</sup>	18 600	20 634	17 250	19 447	4.6

Source: Australian Wine and Grape Industry (1329.0); Manufacturing Production, Australia (8301.0); ABARE, 'Australian Commodity Statistics, 2002'.

## International trade in manufactured commodities

### Principal commodities exported

Table 18.23 shows the value of the top 20 manufacturing commodities exported from Australia, in the period 1998-99 to 2002-03. During the period exports of manufactured commodities grew in value by 26%, despite falling by 5% in 2002-03 from the value of manufacturing

exports in 2001-02. Manufactured commodities made up 57% of the value of all exports in 2002-03, down from 61% in 1998-99.

In 2002-03, four manufacturing commodities contributed 24% of the total value of exports — petroleum, petroleum products and related materials (7.2%); non-ferrous metals (6.8%); meat and meat preparations (4.9%); and non-monetary gold (4.8%). Another large value commodity, road vehicles, which made up 2.4% of total exports in

1998–99 had doubled in value of export earnings to \$4.2b in 2002–03 and represented 3.6% of the total value of Australian exports.

The value of exports of cereals and cereal preparations fell by 31% in 2002–03 from 2001–02, reflecting a reduction in raw materials available because of the drought being experienced throughout Australia. Reductions in the value of exports of dairy products and birds' eggs (by 25%), and meat and meat preparations (by 10%) were also recorded during the period.

### Principal commodities imported

Table 18.24 shows the value of the top 20 manufactured commodities imported into Australia, in the period 1998–99 to 2002–03. During the period imports of manufactured commodities grew in value by 33%. Manufactured commodities made up 92% of the value of all imports in 2002–03, down from 95% in 1998–99.

### 18.23 EXPORTS OF SELECTED MANUFACTURED COMMODITIES

Commodities as defined by the Standard International Trade classification (SITC)	1998–99	1999–2000	2000–01	2001–02	2002–03	Change from 1998–99 to 2002–03	Change from 2001–02 to 2002–03	Share of total exports 2002–03
	\$m	\$m	\$m	\$m	\$m	%	%	%
Meat and meat preparations	4 007	4 467	5 796	6 249	5 645	40.9	-9.7	4.9
Dairy products and birds' eggs	2 226	2 383	2 971	3 156	2 371	6.5	-24.9	2.1
Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	1 221	1 538	1 718	1 663	1 485	21.6	-10.7	1.3
Cereals and cereal preparations	5 001	4 940	5 936	6 482	4 486	-10.3	-30.8	3.9
Beverages	1 176	1 515	1 931	2 287	2 601	121.1	13.7	2.3
Cork and wood	686	777	886	882	994	45.0	12.7	0.9
Textile fibres and their wastes (not manufactured into yarn or fabric)	4 076	4 299	5 600	4 983	4 487	10.1	-9.9	3.9
Petroleum, petroleum products and related materials	3 131	7 145	10 858	8 369	8 348	166.6	-0.2	7.2
Medicinal and pharmaceutical products	1 333	1 715	2 230	2 262	2 004	50.3	-11.4	1.7
Non-metallic mineral manufactures, n.e.s.	735	966	1 025	956	884	20.3	-7.5	0.8
Non-ferrous metals	5 438	7 395	9 404	8 854	7 877	44.8	-11.0	6.8
Machinery specialised for particular industries	1 382	1 112	1 344	1 398	1 263	-8.6	-9.6	1.1
General industrial machinery and equipment, n.e.s. and machine parts, n.e.s.	1 032	1 040	1 221	1 290	1 303	26.3	1.0	1.1
Office machines and automatic data processing machines	1 459	1 312	1 564	1 657	1 480	1.4	-10.7	1.3
Telecommunications and sound recording and reproducing apparatus and equipment	741	1 183	1 454	1 083	808	8.9	-25.5	0.7
Electrical machinery, apparatus, appliances, parts (incl. non-elec. counterparts of electrical domestic equip.)	1 273	1 322	1 720	1 680	1 667	31.0	-0.8	1.4
Road vehicles (incl. air-cushion vehicles)	2 091	2 808	3 840	4 293	4 184	100.0	-2.5	3.6
Transport equipment (excl. road vehicles)	1 403	1 672	1 200	1 860	2 011	43.4	8.2	1.7
Professional, scientific and controlling instruments and apparatus, n.e.s.	931	1 061	1 254	1 344	1 238	32.9	-7.9	1.1
Gold, non-monetary (excl. gold ores and concentrates)	6 335	5 031	5 110	5 129	5 584	-11.9	8.9	4.8

Source: ABS data available on request, *International Trade*.

The major commodity imported into Australia during the period was road vehicles, which represented 12.6% of the total value of imports in 2002–03. Petroleum, petroleum products and related materials made up 7.9% of imports in 2002–03, and was one of the few large imported commodities which was not machinery of one type or another. In comparing the list of largest manufactured commodities that Australia exports

with the list of imports in terms of value, it is apparent that many of Australia's manufactured exports are simply transformed manufactured commodities such as food products and metals, while the majority of manufactured imports are elaborately transformed commodities such as machinery and equipment.

#### 18.24 IMPORTS OF SELECTED MANUFACTURED COMMODITIES(a)

Commodities as defined by the Standard International Trade classification (SITC)	1998–	1999–	2000–	2001–	2002–	Change	Change	Share of
	99	2000	01	02	03	1998–99 to 2002–03	2001–02 to 2002–03	total imports 2002–03
	\$m	\$m	\$m	\$m	\$m	%	%	%
Road vehicles (incl. air-cushion vehicles)	11 904	12 784	14 346	14 895	16 826	41.3	13.0	12.6
Petroleum, petroleum products and related materials	4 526	7 516	10 369	8 893	10 501	132.0	18.1	7.9
Office machines and automatic data processing machines	7 104	7 589	8 319	7 965	7 731	8.8	-2.9	5.8
General industrial machinery and equipment, n.e.s. and machine parts, n.e.s.	5 770	5 398	5 726	6 221	7 064	22.4	13.5	5.3
Telecommunications and sound recording and reproducing apparatus and equipment	4 926	6 773	7 930	6 862	7 004	42.2	2.1	5.3
Electrical machinery, apparatus, appliances, parts (incl. non-elec. counterparts of electrical domestic equip.)	5 870	6 213	6 791	6 629	6 959	18.5	5.0	5.2
Transport equipment (excl. road vehicles)	2 848	5 432	3 409	3 468	6 454	126.6	86.1	4.8
Medicinal and pharmaceutical products	3 041	3 520	4 370	5 009	5 285	73.8	5.5	4.0
Machinery specialised for particular industries	4 234	4 153	3 835	4 050	4 543	7.3	12.2	3.4
Articles of apparel and clothing accessories	2 459	2 794	3 187	3 215	3 420	39.1	6.4	2.6
Power generating machinery and equipment	2 264	2 655	2 700	3 034	3 209	41.7	5.8	2.4
Manufactures of metals, n.e.s.	2 408	2 522	2 710	2 790	3 133	30.1	12.3	2.4
Professional, scientific and controlling instruments and apparatus, n.e.s.	2 533	2 593	2 742	2 998	3 057	20.7	2.0	2.3
Gold, non-monetary (excl. gold ores and concentrates)	2 351	2 397	1 688	2 219	2 959	25.8	33.3	2.2
Textile yarn, fabrics, made-up articles, n.e.s., and related products	2 588	2 632	2 607	2 562	2 723	5.2	6.3	2.0
Paper, paperboard, and articles of paper pulp, of paper or of paperboard	2 082	2 329	2 444	2 363	2 497	20.0	5.7	1.9
Organic chemicals	2 388	2 874	2 854	2 501	2 441	2.3	-2.4	1.8
Non-metallic mineral manufactures, n.e.s.	1 579	1 878	1 871	1 970	2 116	34.1	7.4	1.6
Iron and steel	1 472	1 505	1 430	1 764	1 961	33.2	11.2	1.5
Rubber manufactures, n.e.s.	1 272	1 255	1 412	1 607	1 753	37.8	9.0	1.3

(a) Customs value.

Source: ABS data available on request, *International Trade*.

## 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. More information on

the concepts underlying these indexes and other price indexes produced by the ABS is provided in *Chapter 28, Prices*.

Tables 18.25 and 18.26 set out index numbers for selected components of the two price indexes.

**18.25 PRICE INDEXES(a)(b), Materials used**

Industry	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Food, beverages and tobacco	110.0	110.5	110.8	121.0	137.8	136.0
Textiles and textile products	96.3	94.0	91.6	102.3	106.9	110.3
Knitting mills and clothing	107.1	106.4	102.6	106.5	109.2	107.6
Footwear	109.7	110.3	107.4	120.3	130.3	130.6
Leather and leather products	91.9	93.5	97.8	107.2	102.7	100.3
Sawmilling and timber products	119.8	119.8	123.0	132.8	136.1	130.0
Paper and paper products	96.4	97.6	99.8	110.0	109.7	104.8
Printing and publishing	105.5	108.1	107.7	116.5	119.3	116.9
Petroleum and coal products	108.4	94.4	157.8	217.7	175.9	188.3
Chemicals	111.9	111.4	114.0	126.3	121.0	118.3
Rubber and plastics	113.4	110.1	110.8	123.9	121.6	123.5
Non-metallic mineral products	112.6	111.3	110.7	111.5	115.4	123.1
Basic metal products	93.4	91.7	92.5	101.7	106.0	104.6
Fabricated metal products	107.3	106.2	106.1	111.7	110.6	111.0
Transport equipment and parts	113.5	116.8	120.5	125.2	124.6	124.8
Electronic equipment and other machinery	104.6	103.7	103.4	108.0	107.2	107.5
Other manufacturing	113.8	115.3	118.8	125.6	124.4	124.0
<b>All materials</b>	<b>107.0</b>	<b>105.9</b>	<b>115.8</b>	<b>132.4</b>	<b>132.4</b>	<b>131.9</b>

(a) Reference base year is 1989-90 = 100.0. (b) The index is on a net basis and relates in concept only to transactions in materials used in the industry that are produced from other industries or from overseas.

Source: *Producer Price Indexes, Australia (6427.0)*.

**18.26 PRICE INDEXES(a)(b), Articles produced**

Industry	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Food, beverages and tobacco	122.0	122.6	125.1	131.4	139.9	139.9
Textiles and textile products	104.7	102.9	103.8	108.6	111.8	120.3
Knitting mills, clothing, footwear and leather	116.5	117.9	119.5	120.7	122.3	124.8
Log sawmilling and other wood products	118.9	121.0	126.0	130.7	132.4	135.1
Paper and paper products	110.2	110.4	111.3	114.9	115.9	117.9
Printing, publishing and recorded media	139.2	143.6	148.9	152.4	155.5	155.2
Petroleum and coal products	101.7	86.8	137.5	190.2	158.5	172.6
Chemicals	110.7	110.8	111.7	115.8	113.9	115.1
Rubber and plastics	113.8	114.0	114.9	119.1	123.9	124.5
Non-metallic mineral products	116.7	117.1	117.5	117.8	118.7	125.8
Basic metal products	102.2	98.7	104.8	115.4	107.9	104.8
Fabricated metal products	113.1	113.6	115.2	116.7	118.6	122.2
Transport equipment and parts	116.6	117.8	119.6	124.1	128.5	129.4
Electronic equipment and other machinery	109.7	109.1	109.9	112.3	114.2	113.8
Other manufacturing	119.6	121.4	123.8	128.8	131.0	127.9
<b>All articles</b>	<b>115.9</b>	<b>115.6</b>	<b>120.6</b>	<b>128.5</b>	<b>128.8</b>	<b>130.3</b>

(a) Reference base year is 1989-90 = 100.0. (b) The index is on a net basis and relates in concept only to transactions in materials used in the industry that are produced from other industries or from overseas.

Source: *Producer Price Indexes, Australia (6427.0)*.

## Research and development expenditure

Research and experimental development (R&D) activity, in the business context, is defined as 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 activity also extends to modifications to existing products and processes.

As table 18.27 shows, R&D expenditure within the manufacturing industry increased by \$213m (10%) in 2001–02. Industries contributing the most to manufacturing R&D expenditure in 2001–02 were: motor vehicle and part and other transport equipment manufacturing (23%); petroleum, coal, chemical and associated product manufacturing

(17%); and electronic and electrical equipment and appliance manufacturing (17%). Together, these industries accounted for 57% of total R&D expenditure of the manufacturing industry, and 25% of the total R&D expenditure for all industries.

Table 18.28 shows that, of the manufacturing industry's total R&D expenditure for 2001–02, 9% was on capital expenditure, 45% on labour costs and 46% on other current expenditure. The motor vehicle and part and other transport equipment manufacturing industry contributed the largest expenditure on R&D for the manufacturing industry in terms of capital expenditure (19%), labour costs (24%), and other current expenditure (23%). Manufacturing accounted for 53% of the capital expenditure, 45% of the labour costs, and 40% of other current expenditure on R&D for all industries.

### 18.27 EXPENDITURE ON RESEARCH AND DEVELOPMENT

Industry subdivision	1999–2000	2000–01	2001–02
	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	184	202	214
Textile, clothing, footwear and leather manufacturing	18	27	22
Wood and paper product manufacturing	103	100	82
Printing, publishing and recorded media	15	17	16
Petroleum, coal, chemical and associated product manufacturing	370	387	417
Non-metallic mineral product manufacturing	47	41	76
Metal product manufacturing	227	200	235
Motor vehicle and part and other transport equipment manufacturing	410	473	553
Photographic and scientific equipment manufacturing	127	184	230
Electronic and electrical equipment and appliance manufacturing	375	430	412
Industrial machinery and equipment manufacturing	101	108	128
Other manufacturing	19	21	18
<b>Total</b>	<b>1 996</b>	<b>2 190</b>	<b>2 403</b>

Source: *Research and Experimental Development, Businesses, Australia (8104.0)*.

### 18.28 TYPE OF EXPENDITURE ON RESEARCH AND DEVELOPMENT — 2001–02

Industry subdivision	Capital expenditure	Labour costs(a)	Other current expenditure	Total
	\$m	\$m	\$m	\$m
Food, beverage and tobacco manufacturing	20.0	104.7	89.6	214.2
Textile, clothing, footwear and leather manufacturing	3.8	9.4	9.3	22.4
Wood and paper product manufacturing	3.9	25.3	52.9	82.0
Printing, publishing and recorded media	0.9	8.3	6.9	16.2
Petroleum, coal, chemical and associated product manufacturing	24.7	175.8	216.2	416.6
Non-metallic mineral product manufacturing	22.1	20.3	33.6	76.0
Metal product manufacturing	34.9	80.6	119.6	235.1
Motor vehicle and part and other transport equipment manufacturing	40.4	254.6	257.7	552.7
Photographic and scientific equipment manufacturing	14.3	113.6	102.2	230.2
Electronic and electrical equipment and appliance manufacturing	33.9	213.7	164.0	411.5
Industrial machinery and equipment manufacturing	14.5	62.9	50.8	128.2
Other manufacturing	2.8	9.0	5.8	17.6
<b>Total</b>	<b>216.1</b>	<b>1 078.2</b>	<b>1 108.4</b>	<b>2 402.7</b>

(a) Includes wages and salaries, payroll tax, payments to contract staff on the payroll, fringe benefits tax and workers' compensation, holiday pay, long service leave payments, sick pay, and employer contributions to superannuation and pension schemes.

Source: *Research and Experimental Development, Businesses, Australia, 2001–02 (8104.0)*.

In 2001–02, R&D expenditure in the manufacturing industry in Victoria and New South Wales accounted for 40% and 33% respectively. In Victoria, R&D expenditure in the manufacturing industry made up 54% of the total expenditure by all industries on research and development, which is higher than the 43% manufacturing industry contribution to R&D expenditure for all states (table 18.29).

Motor vehicle and part and other transport equipment manufacturing R&D expenditure in Victoria was \$409m, or 74% of the total for 2001–02. New South Wales accounted for 48% (\$197.0m) of the total R&D expenditure in the electronic and electrical equipment manufacturing industry.

*Chapter 25, Science and innovation* discusses expenditure on and human resources devoted to R&D activity for all sectors of the economy.

**18.29 LOCATION OF EXPENDITURE ON RESEARCH AND DEVELOPMENT — 2001–02**

Industry subdivision	NSW \$m	Vic. \$m	Qld \$m	SA \$m	WA \$m	Other states and territories \$m	Overseas \$m	Total \$m
Food, beverage and tobacco manufacturing	81.1	74.8	28.4	13.4	9.3	5.5	1.8	214.2
Textile, clothing, footwear and leather manufacturing	3.7	13.0	n.p.	n.p.	3.9	n.p.	—	22.4
Wood and paper product manufacturing	9.1	56.4	5.1	5.4	2.3	n.p.	n.p.	82.0
Printing, publishing and recorded media	9.5	3.3	n.p.	0.4	1.2	n.p.	—	16.2
Petroleum, coal, chemical and associated product manufacturing	131.5	172.6	55.9	25.9	17.5	8.5	4.9	416.6
Non-metallic mineral product manufacturing	51.5	7.6	12.7	1.2	2.3	n.p.	n.p.	76.0
Metal product manufacturing	97.1	28.9	32.8	5.3	68.6	n.p.	n.p.	235.1
Motor vehicle and part and other transport equipment manufacturing	64.3	409.0	9.5	58.8	9.2	1.2	0.7	552.7
Photographic and scientific equipment manufacturing	108.2	64.9	13.3	18.9	11.3	n.p.	n.p.	230.2
Electronic and electrical equipment and appliance manufacturing	197.0	111.6	32.5	23.4	38.7	8.0	0.3	411.5
Industrial machinery and equipment manufacturing	42.1	26.5	27.0	8.6	15.5	8.1	0.4	128.2
Other manufacturing	5.1	4.0	4.9	2.2	1.2	n.p.	n.p.	17.6
<b>Total</b>	<b>800.2</b>	<b>972.5</b>	<b>224.9</b>	<b>n.p.</b>	<b>180.9</b>	<b>38.6</b>	<b>n.p.</b>	<b>2 402.7</b>

Source: *Research and Experimental Development, Businesses, Australia, 2001–02 (8104.0)*.

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## CONSTRUCTION

As an industry, construction plays a significant role in the Australian economy. The construction industry provides for the homes in which people live and the places they use for work and recreation. Construction also provides for essential facilities and infrastructures, such as schools, hospitals, roads, water and electricity supply, and telecommunications.

The industry and its activities are closely linked to other parts of the Australian economy. Important linkages include the manufacturing, wholesale, and retail trade industries, as well as the finance and insurance industries. Significant parts of the professional services industry, such as the architectural and engineering professions, are also closely linked to the construction industry.

In 2001–02, the construction industry contributed 5.6% to Australia's gross domestic product. This compares with 5.2% in 2000–01.

In 2001–02, the construction industry employed 705,800 workers, either as employees or as self-employed contractors. This represented approximately 8% of all employed persons in Australia. The majority of those employed in the construction industry were full-time (85%) and male (88%).

The construction industry engages in three broad areas of activity:

- residential building (e.g. houses, flats, etc.)
- non-residential building (e.g. offices, shops, hotels, etc.)
- engineering construction (e.g. roads, bridges, water, sewerage, etc.).

Construction activity is undertaken by both the private and public sectors within Australia. The private sector is generally engaged in all three categories of construction and plays a major role in residential and non-residential building activity. The public sector, on the other hand, plays a key role in initiating and undertaking engineering construction activity and in non-residential building activity, particularly building activity relating to health and education.

The chapter includes an article *The design and construction of Indigenous housing: the challenge ahead*.

## Performance of the construction industry

Selected summary measures of performance for sections of the construction industry in 2000–01 are shown in table 19.1. Total operating income for the construction industry in 2000–01 was \$97.4m. Total operating expenses was \$89.6m. General construction was the largest component with 53% of the industry's total operating income and 55% of the construction industry total

operating expenses. Total operating profit before tax in 2000–01 was \$7.7m. Construction trade services accounted for 70% of this value.

In 2000–01 the construction industry employed 681,400 persons, with the majority employed in construction trade services (65%) (table 19.2). The average number of persons employed in 2000–01 in general construction and construction trade services each experienced small declines. General construction experienced the largest relative decline (–3.3% change).

### 19.1 CONSTRUCTION INDUSTRY, Summary of industry performance — 2000–01

Selected indicators	Units	General construction						
		Building construction			General construction			
		Residential construction	Non-residential building construction	Total	Non-building construction	Total	Construction trade services	Total construction
Employment(a)	'000	n.a.	n.a.	190.0	50.7	240.7	440.8	681.4
Total operating income	\$m	23 497	14 586	38 083	13 362	51 446	45 951	97 397
Total operating expenses	\$m	21 930	14 109	36 038	13 088	49 126	40 521	89 647
Operating profit before tax	\$m	1 567	477	2 045	275	2 319	5 430	7 750

(a) Annual average.

Source: *Australian Industry, 2000–2001* (8155.0); *Labour Force, Australia* (6203.0).

### 19.2 CONSTRUCTION INDUSTRY, Average annual employment

	1997–98	1998–99	1999–2000	2000–01
Employment status	'000	'000	'000	'000
General construction(a)				
Employee	161.6	171.3	190.1	184.2
Employer	12.2	12.2	11.8	11.6
Own account worker(b)	38.1	38.0	44.1	42.9
Total	213.4	223.7	248.9	240.6
Construction trade services				
Employee	223.3	244.7	275.7	252.8
Employer	34.6	35.9	37.4	35.5
Own account worker(b)	121.8	124.3	129.1	147.6
Total	383.7	410.4	446.5	440.8
Total construction(c)				
Employee	384.9	416.0	465.7	437.0
Employer	46.8	48.0	49.2	47.1
Own account worker(b)	159.9	162.3	173.2	190.6
Total	597.1	634.1	695.4	681.4

(a) Total includes contributing family worker. (b) A worker that hires no employees (this category was formerly titled Self employed). (c) Includes categories General construction and Construction trade services.

Source: *Labour Force, Australia* (6203.0).

## Trends in construction activity

Construction activity occurs in three broad sectors: residential building, non-residential building and engineering construction. The level of activity of the construction industry by sectors is shown in table 19.3. In 2001–02 residential building accounted for 44% of the value of work done, engineering construction for 34% and non-residential building for 22%.

The value of work done in 2001–02 was substantially higher than the previous year, with an increase of 14% following a 19% decline 2000–01. All three construction sectors exhibited increases in the value of work done between 2000–01 and 2001–02 but not to the levels experienced in 1999–2000. Residential building experienced the largest growth, with a 23% increase on the previous financial year. This was followed by engineering construction (8%) and non-residential building (6%).

The pattern of construction activity by sector has changed substantially over time (graph 19.4). In 1987–88, the value of non-residential building

activity was greater than engineering construction activity. After 1991–92, however, engineering construction activity has consistently exceeded non-residential building activity.

Graph 19.4 also shows the acceleration in residential building activity to record levels prior to the introduction of The New Tax System in July 2000, followed by a substantial downturn until the start of 2001.

Over the past decade, public sector construction has remained relatively constant, maintaining an annual value of work done of around \$15b (graph 19.5). Private sector construction on the other hand has been more volatile, particularly over the past few years. The value of private sector construction declined sharply after July 2000, falling by 24%. Private sector construction has, however, almost recovered from this sharp decline, increasing 20% in 2001–02.

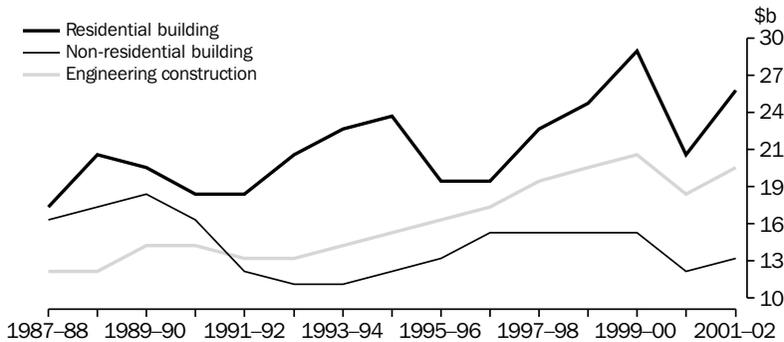
**19.3 VALUE OF CONSTRUCTION WORK DONE(a), By type of activity**

	Residential building	Non-residential building	Engineering construction	Total construction(b)
	\$m	\$m	\$m	\$m
1996–97	19 258	14 579	16 510	<b>50 483</b>
1997–98	22 858	14 649	18 598	<b>56 163</b>
1998–99	24 769	15 371	20 482	<b>60 684</b>
1999–2000	28 903	14 996	20 590	<b>64 261</b>
2000–01	21 207	12 447	18 144	<b>51 798</b>
2001–02	26 002	13 135	19 674	<b>58 811</b>

(a) Chain volume measures, reference year is 2000–01. (b) Chain volume measures are not additive for most periods, the component measures do not sum to a total in the same way as the corresponding current price components do.

Source: *Building Activity, Australia (8752.0)*; *Engineering Construction Activity, Australia (8762.0)*.

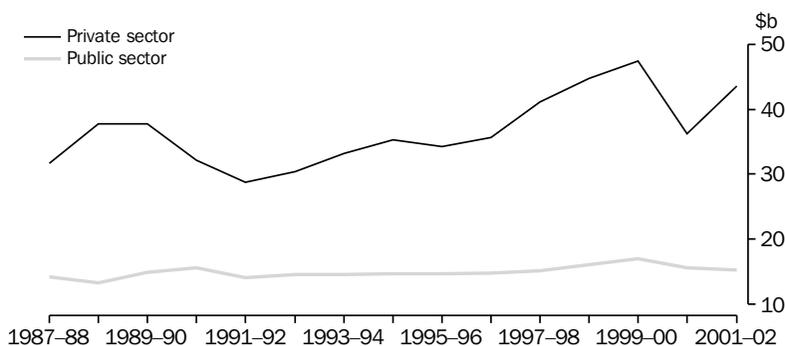
**19.4 CONSTRUCTION ACTIVITY(a), By type of activity**



(a) Chain volume measures, reference year is 2000–01.

Source: *Building Activity, Australia (8752.0)*; *Engineering Construction Activity, Australia (8762.0)*.

### 19.5 CONSTRUCTION ACTIVITY(a), By sector



(a) Chain volume measures, reference year is 2000-01.

Source: *Building Activity, Australia (8752.0)*; *Engineering Construction Activity, Australia (8762.0)*.

More detailed information on the value of residential and non-residential building work done is presented in table 19.6. In 2001-02 the value of building work done increased by \$5,483m (16%) to \$39,137m, following a significant fall of 23% in 2000-01. During 2001-02, work done on total new residential buildings increased by \$4,130m (23%),

recovering the majority of the 27% decline experienced during 2000-01. Non-residential building activity did not experience the same level of recovery, increasing by \$688m (6%) in 2001-02, following a decline of \$2,549m (-17%) during the preceding year.

### 19.6 VALUE OF BUILDING WORK DONE(a), By type of activity

	New residential building			Alterations and additions to residential buildings	Non-residential building	Total building(b)
	Houses	Other residential buildings	Total(b)			
	\$m	\$m	\$m			
1996-97	11 392	4 704	16 089	3 170	14 579	<b>34 041</b>
1997-98	13 678	5 499	19 170	3 689	14 649	<b>37 618</b>
1998-99	14 524	6 335	20 856	3 913	15 372	<b>40 226</b>
1999-2000	17 431	7 055	24 472	4 430	14 996	<b>43 770</b>
2000-01	12 119	5 692	17 812	3 395	12 447	<b>33 654</b>
2001-02	15 216	6 726	21 942	4 060	13 135	<b>39 137</b>

(a) Chain volume measures, reference year is 2000-01. (b) Chain volume measures are not additive; for most periods the component measures do not sum to a total in the same way as the corresponding current price components do.

Source: *Building Activity, Australia (8752.0)*.

## The design and construction of Indigenous housing: the challenge ahead

*This article was contributed by Aboriginal and Torres Strait Islander Services (Principle authors: Susan Etherington and Laura Smith).*

With an estimated \$2.1b required to address Indigenous housing needs, Indigenous housing providers must tackle the serious issue of housing sustainability (ATSIC 2000). Of the 21,287 dwellings managed by Indigenous housing organisations, it is estimated that approximately 8% require replacement and 19% require major repairs (ATSIC 2001). The majority (70%) of these dwellings are located in Remote and Very Remote locations of Australia,<sup>1</sup> where approximately 106,000 Indigenous persons live (ABS 2001b).

Although there are many factors which contribute to the sustainability of housing, the adequacy of design, construction and maintenance of Indigenous housing plays a crucial role. When houses are not culturally appropriate in their design, are poorly built, or where there is no systematic approach to their repair or maintenance, minor problems can escalate over time and shorten the life expectancy of houses. Given the serious backlog of housing need in rural and remote communities, it is important that resources are well targeted and provide the maximum benefit to Indigenous Australians.

The Aboriginal and Torres Strait Islander Commission's Community Housing and Infrastructure Program (CHIP) seeks to improve the living environment of Indigenous Australians, by providing appropriate housing and associated infrastructure (ATSIC 2002b). Through CHIP, grants are provided for: capital construction, purchase and upgrade of adequate and appropriate rental housing; supplementary recurrent funding for general administration costs of Indigenous housing organisations; recurrent funding for repairs and maintenance of existing housing stock where rental income and service charges are not sufficient to meet the costs involved; and funding for infrastructure, municipal services and program support.

CHIP expenditure between 1990–91 and 2000–01 for housing, infrastructure and related essential services included:

- \$725m on the construction or purchase of 5,901 houses
- \$106m on upgrades/renovations to 6,534 houses
- \$65m towards the cost of managing and maintaining housing stock
- \$645m on capital costs of housing-related infrastructure (i.e. water, power and sewerage)
- \$423m on recurrent costs of maintaining housing and infrastructure and municipal services
- \$23m on research and program support activities, such as the Community Housing and Infrastructure Needs Survey and the Centre for Appropriate Technology.

One key strategy in improving the effectiveness of the CHIP program is ensuring capital construction and major upgrade projects using appropriate technical standards, design and materials. While constructing a house in a remote locality can be difficult enough due to professional building skill shortages, limited availability of materials and the expense and logistics involved, providing appropriate housing can be even more challenging.

Provision of appropriate housing is dependent on consultation and planning during the design process stage. A range of factors need to be considered and incorporated into design solutions. These may include geographic location, population fluctuations experienced in communities, family and kinship structures and the specific lifestyles of communities and their use of housing. The diversity of contemporary Indigenous cultures and the locations in which they live, means that what is appropriate will vary considerably between communities.

In some parts of Australia, Aboriginal and Torres Strait Islander kinship structures may call for avoidance behaviour between people. Such practices will impact on the way in which housing is used. Population mobility and kinship structures can also affect the pattern of housing occupancy. Household and community populations may fluctuate quite dramatically for a variety of social, cultural or seasonal reasons. Providing accommodation for visiting kin or relations from other communities or outstations may result in the overcrowding of houses<sup>2</sup> (ATSIC 2002a). For example, a death in a community may result in one house being temporarily vacated and another being overcrowded, because relatives of the deceased cannot live in the deceased person's home.

Assessment of the degree of community mobility and household size is vital in planning and designing the usage loads placed on housing, particularly health hardware facilities (i.e. water, waste removal and power). Should crowding result in the failure of facilities, a range of serious health problems can occur resulting in unsafe and ultimately uninhabitable housing. This, in turn, creates more stress on other services and facilities.

Geographical location, climate and cultural lifestyle also impact on the design and construction of Indigenous housing. For instance, rural and remote communities located in Western Australia and the Northern Territory, experience climate extremes. As a result people may choose to live outside the house in yard areas. In such climates an appropriate yard area should be included in the overall design layout of the site. This accommodates lifestyle and, incidentally, assists with overcrowding (Sinatra & Murphy 1997).

Another vital component in ensuring appropriate design and construction of dwellings is the role of building standards and codes. There are many situations where communities do not fall within the jurisdiction of a local government or where the statutory application of such regulatory processes is unclear (Bidmeade 2002; Morton 2002). It is essential that regulatory arrangements are sufficient to ensure that Indigenous housing and infrastructure is built to comply with the

*Building Code of Australia* as well as design and construction standards set by state and local governments.

To improve housing outcomes and achieve appropriate, safe, healthy and sustainable housing for Indigenous communities *The National Framework for the Design, Construction and Maintenance of Indigenous Housing* has been developed (Department of Family and Community Services 1999a). The framework is complemented by the *National Indigenous Housing Guide*, which provides advice on the design, selection, installation, construction and maintenance of housing health hardware items (e.g. taps, showers and toilets) and other aspects related to promote healthy living practices (Department of Family and Community Services 1999b).

The framework is intended to complement mainstream regulatory building mechanisms where they apply and may be used to inform the development and updating of state and territory standards. Some jurisdictions have already produced building standards, which establish Indigenous housing requirements that are specific to their remote area(s). For example, the Northern Territory Government has produced the *Environmental Health Standards for Remote Communities* (Northern Territory Government 2001) and in Western Australia the *Code of Practice for Housing and Environmental Infrastructure Development in Aboriginal Communities* is in place (Environmental Health Needs Coordinating Committee Inter-governmental Working Group 2000).

Under the framework, everybody involved in the process of providing housing for Indigenous persons (i.e. designers, project managers, building contractors, community councils and Indigenous housing providers) are expected to operate in the spirit of the principles, which focus on the key issues of safety, health, quality control and sustainability. While the framework has no legislative basis, a willingness to embrace the principles by those involved in the delivery of Indigenous housing will be reflected in the improved design and construction of, appropriate and sustainable housing outcomes.

## Endnotes

- 1 Remote and Very Remote locations are defined according to 'Remoteness Areas', which are located in the *Australian Standard Geographical Classification* (ABS 2001a).
- 2 Overcrowding in Indigenous housing, in some parts of Australia, is already much higher than the national average. For example, in the Northern Territory the average Indigenous household size is five, compared to the non-Indigenous household size of 2.7.

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## Residential building

Building approvals are a key indicator of future activity, as nearly all building activity must be approved by local and/or other authorities. Residential building is focused on the provision, upgrading and maintenance of dwelling units.

Most dwelling units are created from the construction of new houses and new other residential buildings (i.e. flats, apartments, villas, townhouses, duplexes, etc.). They can, however, also be created as part of alterations and additions to existing buildings (including conversions to dwelling units) and as part of the construction of non-residential buildings.

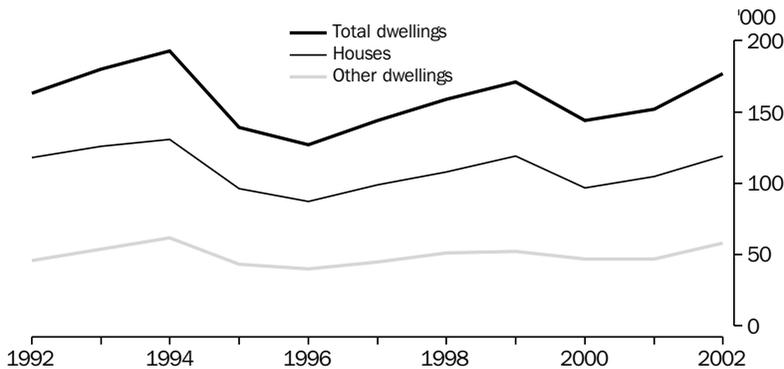
The number of total dwelling unit approvals experienced relatively stable growth between 1995 and 1998 (graph 19.7). Activity brought forward ahead of The New Tax System (July 2000)

contributed to the increase and decrease between early 1999 and late 2000. Low interest rates and governments' expanded home owner schemes contributed to an increase in the number of dwelling units approved throughout 2001 and 2002.

Residential building activity is dominated by the private sector. In 2002 this sector accounted for around 98% of new house approvals, a proportion largely unchanged from preceding years. The public sector is slightly more significant in the area of new other residential building work, although its share appears to be decreasing. In 2002 new other residential building work approved by the public sector accounted for 3% of approvals, compared to 6% in 2001.

The major component of dwelling unit approvals is new houses (table 19.8). In 2002 new house approvals accounted for 67% of total dwelling unit approvals.

19.7 DWELLING UNITS APPROVED: Trend estimates



Source: Building Approvals, Australia (8731.0).

19.8 DWELLING UNITS APPROVED

	New houses	New other residential dwelling units	Conversions	Total dwelling units(a)
<b>Private sector</b>				
2000	93 581	41 727	2 257	<b>138 850</b>
2001	102 802	40 962	1 653	<b>146 221</b>
2002	116 571	53 721	2 059	<b>173 398</b>
<b>Public sector</b>				
2000	1 419	2 345	4	<b>3 834</b>
2001	1 519	2 509	103	<b>4 220</b>
2002	2 072	1 745	—	<b>3 825</b>
<b>Total</b>				
2000	95 000	44 072	2 261	<b>142 684</b>
2001	104 321	43 471	1 756	<b>150 441</b>
2002	118 643	55 466	2 059	<b>177 223</b>

(a) The total includes non-residential buildings and alterations and additions to residential buildings.

Source: Building Approvals, Australia (8731.0).

## New houses

The relationship between new house commencements and completions is illustrated in graph 19.9. Generally, during periods of downturn in new house construction activity, completions exceed commencements. In periods of growth the pattern is reversed.

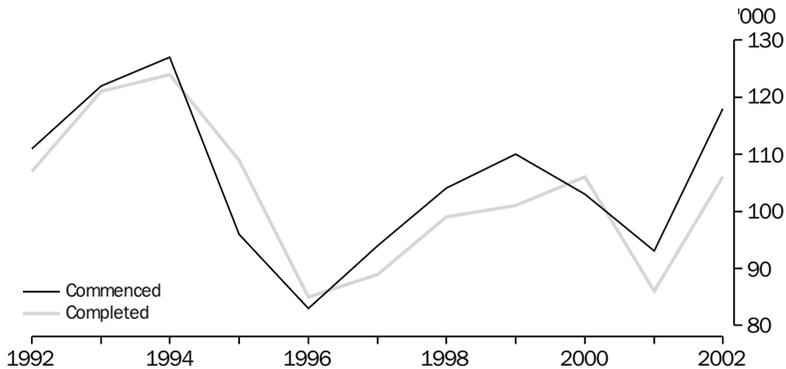
The introduction of The New Tax System (July 2000) corresponded with a marked decline in new house commencements from 2000 to 2001. Subsequently, with a period of historically low interest rates, there has been a sharp increase in new house commencements.

## New other residential building

Other residential building refers to structures other than houses, which are built for accommodation purposes. This includes buildings such as blocks of flats, units and apartments, and semi-detached houses, townhouses and the like.

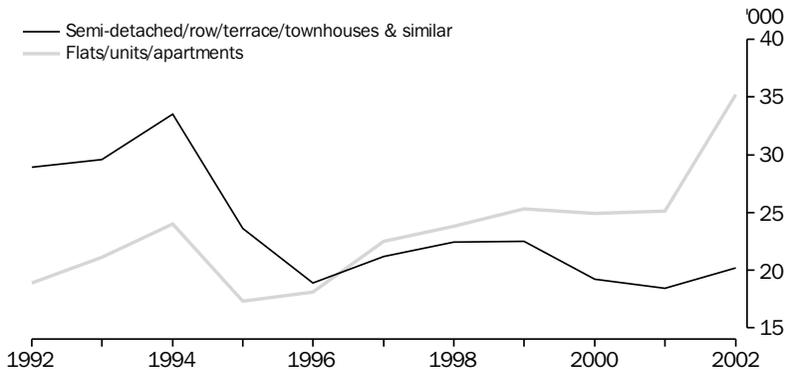
In 2002 there was a 28% increase in new other residential buildings approved. Prior to 1996 approvals for semi-detached houses/townhouses, etc. was greater than that for flats, units and apartments. After 1996 the value of approvals for flats, units and apartments exceeded approvals for semi-detached houses, townhouses and the like. In 2002 flats, units and apartments contributed 63% of the value of total new other residential approvals (graph 19.10).

**19.9 NEW HOUSES COMMENCED AND COMPLETED: Trend estimates**



Source: *Building Activity, Australia* (8752.0).

**19.10 NEW OTHER RESIDENTIAL DWELLING UNITS APPROVED**



Source: *Building Approvals, Australia* (8731.0).

## Value of residential building

Total approvals for new residential building was valued at \$25,760m in 2002, increasing 24% from the previous year. The value of work done increased 31% over the same period to \$24,844m (table 19.11).

Estimates of alterations and additions to residential buildings includes all approved building activity carried out on existing residential buildings, valued at \$10,000 or more. Additions and alterations to residential buildings, is of increasing value (even though proportionally small compared to new residential buildings). Work done on alterations and additions to residential buildings was valued at \$4,345m in 2002, representing an increase of 15% since 2001.

## Non-residential building

The total value of non-residential building work approved from 2001 to 2002 increased 13% to \$15b (table 19.12). Over the same period the types of non-residential buildings which experienced the largest relative increases in approvals were shops (27%), hotels etc. (22%), and offices (16%). Those that experienced a decline in approvals were religious (28%), entertainment and recreational (14%), and health (3%) buildings.

The value of non-residential building work done between 2001 and 2002 rose 14%, to \$14b. The largest increases in the value of work done for non-residential building occurred in hotels (54%), entertainment and recreational (27%), and other business premises (22%).

### 19.11 VALUE OF RESIDENTIAL BUILDING WORK(a)

	Approved		Work done	
	2001	2002	2001	2002
	\$m	\$m	\$m	\$m
New residential buildings				
New houses	14 596	17 341	13 098	17 051
New other residential buildings	6 168	8 419	5 871	7 792
Total	20 759	25 760	18 968	24 844
Alterations and additions to residential buildings(b)	3 614	4 074	3 787	4 345
<b>Total residential building work</b>	<b>24 373</b>	<b>29 834</b>	<b>22 755</b>	<b>29 188</b>

(a) Chain volume measures, reference year is 2000–01. (b) Valued at \$10,000 or more.

Source: *Building Activity, Australia (8752.0)*; *Building Approvals, Australia (8731.0)*.

### 19.12 VALUE OF NON-RESIDENTIAL BUILDING WORK(a)

	Approved		Work done	
	2001	2002	2001	2002
	\$m	\$m	\$m	\$m
Hotels, etc.	571	697	405	622
Shops	2 237	2 845	2 366	2 759
Factories	808	824	790	797
Offices	2 692	3 110	2 337	2 764
Other business premises	1 848	2 122	1 559	1 905
Educational	1 893	1 916	1 957	2 025
Religious	137	98	109	129
Health	1 491	1 442	1 351	1 394
Entertainment and recreational	1 194	1 028	886	1 122
Miscellaneous	724	1 219	856	866
<b>Total</b>	<b>13 594</b>	<b>15 301</b>	<b>12 615</b>	<b>14 384</b>

(a) Valued at \$50,000 or more.

Source: *Building Activity, Australia (8752.0)*; *Building Approvals, Australia (8731.0)*.

## Engineering construction

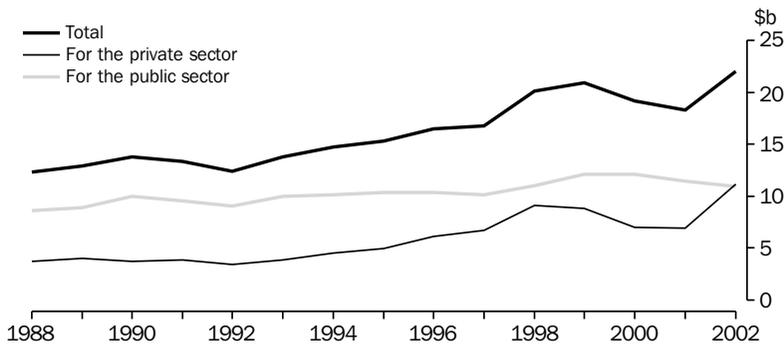
The total value of engineering construction work done across the different sectors during the past 15 years is shown in graph 19.13. The value of public sector engineering construction work done has remained relatively constant from 1988 to 2002. Over the past five years the private sector has demonstrated increased volatility and by the end of 2002 was of greater value than public engineering construction.

Table 19.14 illustrates in more detail the contribution of public and private sectors to engineering construction work done. In 2001 the

value of work done for the private sector contributed 38% to total engineering construction work done. This share increased to 51% in 2002.

In 2002, 24% of the total value of work engineering construction done was attributable to roads, highways and subdivisions followed by oil, gas, coal and other minerals (21%) and telecommunications (14%). The value of work done in oil, gas, coal and other minerals increased by 147% to \$4,657m between 2001 and 2002.

**19.13 TOTAL ENGINEERING CONSTRUCTION(a) WORK DONE, By sector**



(a) Chain volume measures, reference year is 2000-01.

Source: *Engineering Construction Activity, Australia (8762.0)*.

**19.14 VALUE OF ENGINEERING CONSTRUCTION WORK DONE**

	2001			2002		
	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	1 386	3 935	5 322	1 958	3 715	5 673
Bridges	10	317	327	68	268	335
Railways	109	527	635	445	706	1 150
Harbours	117	175	292	96	221	317
Water storage and supply	172	472	644	150	417	567
Sewerage and drainage	149	619	768	226	617	842
Electricity generation, transmission and distribution	1 418	1 696	3 114	1 211	1 904	3 115
Pipelines	195	47	242	875	39	914
Recreation	745	321	1 066	999	361	1 360
Telecommunications	403	3 225	3 629	329	2 944	3 272
Oil, gas, coal and other minerals	1 821	61	1 882	4 657	18	4 675
Other heavy industry	334	16	350	300	—	301
Other	148	53	201	219	24	243
<b>Total</b>	<b>7 006</b>	<b>11 464</b>	<b>18 471</b>	<b>11 533</b>	<b>11 232</b>	<b>22 765</b>

Source: *Engineering Construction Activity, Australia (8762.0)*.

## Price indexes for construction

Price indexes measure changes in prices received or paid, by producers of commodities and are used extensively to analyse and monitor price behaviour. In Australia they generally relate to prices for goods and services as they affect businesses, for example, the input price of materials used in the building industry. A more detailed explanation of price indexes is contained in *Chapter 28, Prices*.

## Output of the general construction industry

In 2002–03 the price indexes for output of the building construction and the non-building construction of the general construction industry

increased by 4.3% and 5.7% respectively (table 19.15). The rate of increase during the 12 months ended June 2003 for the non-building construction component (5.7%) was the largest since the beginning of the series.

## Price index of materials used in house building

The price index of materials used in house building rose 3.6% in 2002–03, following a rise of 1.3% in 2001–02. Table 19.16 shows that there were rises in 2002–03 in all capital cities, with Brisbane experiencing the largest increase (4.6%).

**19.15 PRICE INDEX OF THE OUTPUT OF THE GENERAL CONSTRUCTION INDUSTRY(a)(b)**

	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
Building construction	96.9	100.0	105.0	106.0	107.8	112.4
House construction	97.3	100.0	107.2	109.1	112.0	116.5
Residential building construction n.e.c.	96.7	100.0	104.7	104.2	105.1	110.4
Non-residential building construction	96.5	100.0	103.3	103.9	105.1	109.6
Non-building construction(c)	98.7	100.0	103.7	107.9	109.7	116.0
<b>Output of the general construction industry</b>	<b>97.1</b>	<b>100.0</b>	<b>104.9</b>	<b>106.1</b>	<b>107.9</b>	<b>112.7</b>

(a) Reference base of each index: 1998–99 = 100.0. (b) Excludes ANZSIC subdivision Construction Trade Services. (c) ANZSIC class Roads and bridge construction is the sole contributor to the Non-building construction price index.

Source: *Producer Price Indexes, Australia (6427.0)*.

**19.16 PRICE INDEX OF MATERIALS USED IN HOUSE BUILDING(a)(b)**

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six state capital cities
1997–98	119.7	117.1	117.1	123.3	115.9	121.0	118.2
1998–99	121.6	118.0	118.2	125.0	116.1	122.2	119.5
1999–2000	126.8	121.7	120.8	127.2	117.7	123.8	122.8
2000–01	130.0	123.1	120.6	129.6	118.8	126.0	124.4
2001–02	132.0	125.0	122.0	130.6	119.4	128.4	126.0
2002–03	137.2	128.4	127.6	135.7	123.0	133.7	130.5

(a) Reference base of each index: 1989–90 = 100.0. (b) The separate city indexes measure price movements within each city individually. They do not compare price levels between cities.

Source: *Producer Price Indexes, Australia (6427.0)*.

## Price index of materials used in building other than house building

In 2002–03 the price index for materials used in building other than house building grew by 4.2% (table 19.17). Brisbane experienced the largest absolute movement of 5%, followed by Perth (4.3%).

Table 19.18 shows the annual price indexes of selected materials used in building other than house building for the period 1997–98 to 2002–03.

### 19.17 PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING(a)(b)

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six state capital cities
1997–98	114.4	111.4	117.2	115.1	114.6	117.4	114.2
1998–99	115.2	113.2	118.4	115.5	114.1	118.5	115.2
1999–2000	116.0	114.4	119.3	116.1	115.4	119.0	116.1
2000–01	116.1	115.4	119.1	116.8	115.6	119.3	116.4
2001–02	118.2	117.8	120.8	118.8	117.7	121.3	118.6
2002–03	123.0	122.7	126.9	123.5	122.8	124.2	123.6

(a) Reference base of each index: 1989–90 = 100.0. (b) The separate city indexes measure price movements within each city individually. They do not compare price levels between cities.

Source: *Producer Price Indexes, Australia (6427.0)*.

### 19.18 PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING(a), By selected materials

	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
Structural timber	121.7	125.4	131.1	134.3	134.7	137.9
Clay bricks	114.6	119.1	123.7	128.0	128.7	135.1
Ready mixed concrete	107.2	106.3	103.6	99.7	99.7	115.2
Steel decking cladding and sheet products	114.9	114.4	114.9	118.5	117.5	121.6
Structural steel	113.1	113.4	112.0	113.1	115.1	124.0
Reinforcing steel bar fabric and mesh	112.7	109.9	104.5	102.4	103.1	105.5
Aluminium windows	109.0	110.5	114.3	119.9	122.7	125.8
Non-ferrous pipes and fittings	135.6	128.6	131.5	141.0	142.7	147.0
Builders' hardware	120.0	123.4	130.0	135.9	139.3	143.1
Paint and other coatings	136.0	142.7	148.8	152.2	154.6	167.7
<b>All groups</b>	<b>114.2</b>	<b>115.2</b>	<b>116.1</b>	<b>116.4</b>	<b>118.6</b>	<b>123.6</b>

(a) Reference base of each index: 1989–90 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

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Real Estate Institute of Australia, <<http://www.reiaustralia.com.au>>

## SERVICE INDUSTRIES

This chapter presents an overview of the service industries sector and provides a range of statistical information for a selection of service industries, with a focus on those that have recently been surveyed as part of the Australian Bureau of Statistics (ABS) rotating program of service industries collections.

For the purposes of this chapter, the service industries sector has been defined as all industries other than the goods producing industries (agriculture, mining, manufacturing, electricity, construction, and gas and water supply). In terms of the Australian and New Zealand Standard Industrial Classification, the service industries cover wholesale and retail trade, accommodation, cafes and restaurants, transport and storage, communication services, finance and insurance, property and business services, government administration and defence, education, health and community services, cultural and recreational services, and personal and other services.

In 2001–02, the service industries sector contributed two-thirds of total value of goods and services produced in Australia.

## Overview

The service industries sector is the largest component of the Australian economy in terms of number of businesses, employment and gross value added.

Of the estimated 1,164,100 private sector businesses in Australia in 2000–01, some 833,100 (72%) were in the service industries sector. Small businesses (those with less than 20 employees), in

the service industries sector accounted for 71% of the 1.1 million small businesses in Australia (table 20.1).

The service industries sector accounted for 68% of the gross value added for all industries in 2001–02, and also showed the greatest increase in output in chain volume terms (measuring 'real' output unaffected by price change), with an increase of 24% over the period from 1996–97 to 2001–02 (table 20.2). In comparison, the goods producing industries recorded an increase of 15% over the same period.

### 20.1 BUSINESSES — 2000–01

Industries	Units	Small businesses	Other businesses	Total
Goods producing	'000	322.3	8.7	331.0
Service	'000	799.7	33.4	833.1
<b>Total</b>	<b>'000</b>	<b>1 122.0</b>	<b>42.1</b>	<b>1 164.1</b>
Businesses in service industries as a percentage of all businesses	%	71.3	79.3	71.6

Source: *Small Business in Australia, 2000–01* (1321.0).

### 20.2 GROSS VALUE ADDED(a), Chain volume measures(b)

Industries	Units	1996–97	2001–02
Goods producing			
Agriculture, forestry and fishing	\$m	18 492	22 119
Mining	\$m	28 858	33 865
Manufacturing	\$m	67 182	75 573
Electricity, gas and water	\$m	14 101	15 226
Construction	\$m	32 696	39 011
Total	\$m	161 329	185 794
Service			
Wholesale trade	\$m	29 188	34 714
Retail trade	\$m	28 438	34 646
Accommodation, cafes and restaurants	\$m	12 194	15 350
Transport and storage	\$m	28 270	33 988
Communication services	\$m	14 536	19 814
Finance and insurance services	\$m	35 776	46 943
Property and business services	\$m	56 065	77 162
Government administration and defence	\$m	23 297	25 440
Education	\$m	27 624	30 317
Health and community services	\$m	32 977	40 438
Cultural and recreational services	\$m	9 808	11 821
Personal and other services	\$m	12 701	15 829
Total	\$m	310 874	386 462
<b>Total(c)</b>	<b>\$m</b>	<b>472 203</b>	<b>572 256</b>
Service industries as a percentage of all industries	%	65.8	67.5

(a) At basic prices, which include subsidies, but are before any taxes on products. (b) Reference year is 2000–01. (c) Excludes ownership of dwellings.

Source: *Australian System of National Accounts* (5204.0).

The largest contributor to the service industries sector in 2001–02 was the property and business services industry, which accounted for 20% of the gross value added of the sector and 13% of the gross value added of all industries. The next largest within the service industries sector was finance and insurance services, which accounted for 12% of the gross value added of the sector.

In the five-year period 1996–97 to 2001–02, the gross value added of the services industries sector increased by an average annual rate of 4%, while that of the goods producing industries recorded an average annual growth rate of 3%.

Within the service industries sector, the property and business services industry recorded the largest percentage increase in output in the

five-year period (38% in real terms), which is the equivalent of an average annual growth rate of 7%. The next highest growth rate was recorded by the communications industry, with a 36% increase in output over the five-year period, and an average annual growth rate of 6%. The lowest increase in real terms in the service industries sector over the period was by the government administration and defence industry with an increase of 9%.

In terms of employment, the service industries sector remained dominant, accounting for 75% of total employment for all industries in 2002–03 (table 20.3). Total employment in the service industries sector in 2002–03 was 7,046,800 persons.

### 20.3 EMPLOYED PERSONS

Industries	Units	1997–98(a)	2002–03(a)
<b>Goods producing</b>			
Agriculture, forestry and fishing	'000	430.8	372.4
Mining	'000	82.7	88.3
Manufacturing	'000	1 121.2	1 131.4
Electricity, gas and water	'000	64.4	72.5
Construction	'000	597.1	729.9
<i>Total</i>	'000	2 296.2	2 394.5
<b>Service</b>			
Wholesale trade	'000	500.0	449.5
Retail trade	'000	1 244.0	1 455.8
Accommodation, cafes and restaurants	'000	402.9	455.0
Transport and storage	'000	394.2	411.1
Communication services	'000	148.7	173.7
Finance and insurance	'000	313.3	351.6
Property and business services	'000	897.1	1 092.7
Government administration and defence	'000	339.3	430.2
Education	'000	583.4	666.1
Health and community services	'000	799.4	936.3
Cultural and recreational services	'000	203.4	241.0
Personal and other services	'000	339.5	383.8
<i>Total</i>	'000	6 165.2	7 046.8
<b>Total</b>	<b>'000</b>	<b>8 461.4</b>	<b>9 441.3</b>
Service industries as a percentage of all industries	%	72.9	74.6

(a) Annual average of quarterly data.

Source: Labour Force, Australia (6202.0).

In the five-year period from 1997–98, employment in the service industries increased by 881,600 persons or 14%, representing an average annual growth rate of 3%. In the same period the goods producing industries recorded an increase in employment of 98,300 persons. This represented an increase of 4% and an average annual growth rate of just over 0.8%.

Within the service industries sector, the major employing industry was retail trade with employment in 2002–03 of 1,445,800 persons, accounting for 15% of all employment and 21% of total employment in the sector. Other large employing service industries were property and business services (1,092,700 persons), health and community services (936,300 persons), and education (666,100 persons).

The service industries showing the greatest employment growth in the five-year period since 1997–98 were government administration and defence, with a 27% increase from 339,300 persons to 430,200 persons, property and business services with an increase of 22% in the period, and cultural and recreation services with an increase of 18%. The transport and storage sector showed the smallest increase over the five-year period of 4%, while the wholesale trade sector recorded a decrease of 10%.

## Statistics for selected service industries

The remainder of the chapter presents statistics for a selection of service industries. The information provided is based primarily on the rotating program of service industries collections conducted by the ABS. The exceptions are the retail trade and wholesale trade industries where information has been drawn from the monthly and quarterly sales collections respectively.

The rotating program of service industries collections includes specific industry surveys each year. The main focus of these surveys is the size and structure of individual service industries in terms of detailed financial information and employment.

This chapter includes statistics on the recent surveys of private medical practitioners, the accounting and legal professions, consulting engineering, market research and employment services in respect of 2001–02 and the 2000–01 survey of sport and physical recreation services.

Past issues of the Australian Year Books have included statistics on other specific service industries. Next year's issue will include statistics from the 2001–02 private medical practices survey and the 2002–03 surveys of real estate services, hire services, waste management, film and video production services, television services, music and theatre production and performing arts festivals.

## Retail and wholesale trade

### Retail trade

The retail trade industry comprises businesses primarily engaged in the sale of new or used goods to final consumers for personal or household consumption, or in selected repair activities such as repair of household equipment or motor vehicles.

Retail turnover estimates relate to the value of turnover for retailing (such as supermarkets, clothing and department stores, etc.) and hospitality and selected service industries (such as cafes and restaurants, hotels and licensed clubs, etc.). In order to measure the actual value paid by consumers from 1 July 2000, retail turnover is recorded inclusive of the Goods and Services Tax (GST).

These estimates are used by retailers, industry associations, economists, governments and media to analyse consumer spending behaviour and, in conjunction with other economic indicators, to help assess current Australian economic performance. Quarterly retail turnover estimates, along with other data, are used in the calculation of household final consumption expenditure in the Australian national accounts.

Since 1993, the retail turnover trend series in volume terms has either declined or recorded minimal quarterly growth in two periods. The first occurred from March to December 1996 with growth averaging  $-0.1\%$  per quarter, and the second occurred from December 1999 to September 2000 with growth also averaging  $-0.1\%$  per quarter. This second decline was associated with the introduction of the GST. There were three periods of sustained growth. The first was from June 1993 to December 1995 when growth averaged  $1.2\%$  per quarter, the second was from March 1997 to September 1999 when growth averaged  $1.2\%$  per quarter, and the third was from December 2000 to June 2003 where growth averaged  $1.1\%$  per quarter.

Graph 20.4 presents quarterly changes in the seasonally adjusted chain volume measures of Australian total retail turnover (including hospitality and selected services). The series rose from \$30,032m in the June quarter 1993 to \$43,534m in the June quarter 2003, an increase of 45% representing average growth of 0.9% per quarter. The series rose by 2.7% in the June quarter 2000, reflecting the unusual increase in the volume of goods sold in some industries prior to the introduction of The New Tax System (TNTS) on 1 July 2000. While the price of most goods rose from 1 July 2000, the volume of goods sold across most industries and states dropped as the apparent pull forward in spending in June unwound and the impact of the GST flowed through the economy. This led to a decrease of 3.1% in September quarter 2000.

As shown in table 20.5, the annual original chain volume measures of Australian total retail turnover increased from \$119,200m in 1991–92 to \$171,436m in 2002–03, an increase of 44% representing an average annual rise of 3.4%.

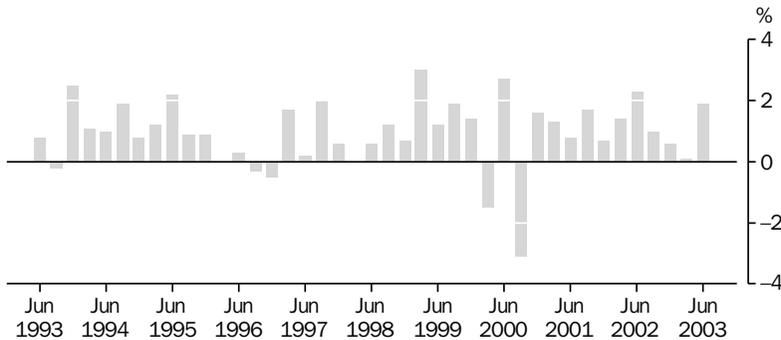
During this period, the strongest three years of annual growth occurred in 1994–95 (5.7%), 1999–2000 (5.5%) and 2001–02 (5.3%). The three

periods of weakest growth occurred in 1992–93, (0.2%), 2000–01 (0.5%) and 1996–97 (0.6%). For the most recent year, 2002–03, there was 4.6% growth. Growth in 2000–01 was considerably lower, but was affected by the unusual increase in the volume of goods sold prior to the introduction of TNTS on 1 July 2000 and the subsequent decline in the volume of goods sold.

The industry group representing the largest component of retail turnover in 2002–03 was food retailing with 40%. The next largest industry was hospitality and services with a 16% share of total turnover in 2002–03, followed by household good retailing with a 14% share of total turnover.

A comparison of the share of retail turnover held by the industry groups in 1991–92 and 2002–03 shows that two industry groups increased their shares, namely household good retailing by 6.4 percentage points and other retailing by 2.0 percentage points. In contrast, five industry groups decreased their shares, namely food retailing (–4.8 percentage points), hospitality and services (–2.2 percentage points), recreational goods (–1.4 percentage points), department stores (–1.1 percentage points) and clothing and soft good retailing (–0.7 percentage points).

**20.4 QUARTERLY CHANGE IN RETAIL TURNOVER, Chain volume measures(a): Seasonally adjusted**



(a) Reference year is 2001–02.

Source: ABS data available on request, Retail Business Survey, quarterly data.

**20.5 RETAIL TURNOVER, Chain volume measures(a) — By industry group: original**

	Food retailing	Department stores	Clothing and soft good retailing	Household good retailing	Recreational good retailing	Other retailing	Hospitality and services	<b>Total(b)</b>
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
1991–92	53 020	11 507	8 624	9 649	6 634	9 653	22 204	<b>119 200</b>
1992–93	53 274	11 678	8 326	10 311	6 361	9 690	21 462	<b>119 415</b>
1993–94	53 793	11 764	8 341	11 170	6 589	10 519	22 263	<b>123 066</b>
1994–95	56 607	12 134	8 571	12 123	6 947	11 038	23 993	<b>130 036</b>
1995–96	59 200	12 463	8 730	13 047	7 313	11 522	24 333	<b>135 362</b>
1996–97	59 680	12 388	8 591	14 427	6 944	11 927	22 916	<b>136 205</b>
1997–98	61 840	12 743	8 756	15 003	7 074	12 936	23 198	<b>140 944</b>
1998–99	63 216	13 150	9 790	15 473	7 161	13 522	25 182	<b>146 872</b>
1999–2000	64 325	13 932	10 492	18 297	7 239	14 510	26 363	<b>154 924</b>
2000–01	64 455	13 297	9 929	19 338	6 922	15 370	26 480	<b>155 660</b>
2001–02	66 219	13 878	10 676	22 411	6 944	16 586	27 153	<b>163 867</b>
2002–03	68 048	14 647	11 283	24 812	7 124	17 360	28 161	<b>171 436</b>

(a) Reference year is 2001–02. (b) Chain volume measures are not additive for most periods; the component measures do not sum to a total in the same way as the corresponding current price components do.

Source: ABS data available on request, Retail Business Survey, quarterly data.

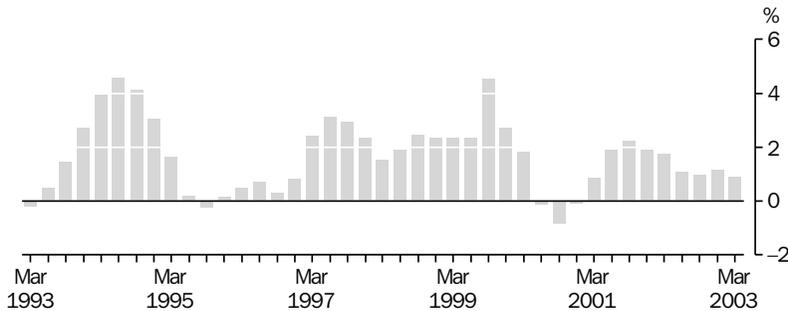
**Wholesale trade**

The wholesale trade industry covers those businesses involved in the sale of new or used goods to businesses or to institutional (including government) users.

Along with the retail trade industry, the wholesale trade industry is a significant component of the Australian economy and provides a key indicator of economic activity.

As shown in graph 20.6, the quarterly changes in the trend chain volume measures of Australian total wholesale sales by private businesses reflect the sustained growth this industry has experienced. Since 1993 there have only been five quarters of negative growth in wholesale sales.

**20.6 QUARTERLY CHANGE IN WHOLESALE SALES, Chain volume measures(a): Trend**



(a) Reference year is 2000–01.

Note: A break in series occurred between the June and September 1999 quarters.

Source: ABS data available on request, Quarterly Business Indicators Survey.

In the period June quarter 1993 to June quarter 1995 all quarters recorded growth in wholesale sales, with the largest increase (4.6%) in the June quarter 1994. In 1996 growth in wholesale sales was lower and averaged 0.6% per quarter, but growth was stronger in the period from March 1997 to June 1999, with average quarterly growth of 2.4%. A break in the series occurred between the June and September quarters 1999 as a result of the inclusion of three significant privatised marketing authorities. After declining in the June, September and December 2000 quarters, the following nine quarters from March 2001 to March 2003 recorded growth in wholesale sales averaging 1.5% per quarter.

The series rose from \$33,701m in the March quarter 1993 to \$54,257m in the June quarter 1999, an overall increase of 61% representing average growth of 1.9% per quarter. Following a series break between the June and September quarters 1999, wholesale sales by private business rose from \$56,730m in the September quarter 1999 to \$66,650m in the March quarter 2003, an overall increase of 17% representing average growth of 1.2% per quarter.

## Selected professions

### Private medical practitioners

The ABS conducted its second survey of medical practitioners working in private practice during 2002. Results showed that there were 29,377 medical practitioners operating in Australia, of which 18,867 were general practitioners and 10,509 were specialists. Most of these medical practitioners (94%) worked in only one private medical business. Private practice medical practitioners worked an average of 50 hours per week, with general practitioners (GPs) working an average of 47 hours per week, compared with 54 hours per week for specialists.

Some 67% of the 18,867 GPs were males. Most GPs were aged between 35–54 (62%), and a further 28% being aged over 54. In a normal working week, GPs worked an average of 47 hours per week, with 40 of these hours being spent on private patient activities. GPs had an average of 136 private patient contacts per week, with 22% of GPs having 200 or more private patient contacts a week (table 20.7).

GPs working in rural and remote areas tended to work longer hours than their metropolitan counterparts. Practitioners in metropolitan areas

worked an average of 46 hours per week, compared to 52 hours per week by GPs in rural areas and 57 hours per week in remote areas. In rural and remote areas, 40% of GPs worked 60 hours or more in an average week, compared to 26% of GPs working the same amount in metropolitan areas.

### 20.7 GENERAL PRACTITIONERS — 2002

	Units	Value
Number of general practitioners		
Males	persons	12 624
Females	persons	6 244
Total	persons	18 867
Hours worked per average week		
Metropolitan areas	hours	46
Rural areas	hours	52
Remote areas	hours	57
Total	hours	47
Private patient contacts per average week		
Less than 60 contacts	GPs	2 771
60–99 contacts	GPs	2 802
100–199 contacts	GPs	9 094
200 or more contacts	GPs	4 201
Total	GPs	18 867

Source: *Private Medical Practitioners, Australia, 2002 (8689.0)*.

During 2002, there were 10,509 specialists working mainly in private practice, 9,071 (86%) of whom were males. The largest number of specialists worked in the specialties of surgery (2,367 persons), internal medicine (2,231 persons), anaesthesia (1,299 persons) and psychiatry (1,192 persons). In terms of age, 28% of specialists were less than 45 years old, 33% aged between 45–54 and 39% aged 55 years and over (table 20.8).

Specialists mainly working in private practice worked an average of 54 hours per week, with 39 of these hours being spent on private patient activities. The specialties recording the highest average of total hours per week were surgery (59 hours per week), obstetrics and gynaecology (59 hours per week) and paediatrics (58 hours per week). Specialists working mainly in private practice had an average of 81 private patient contacts per week, with 2,152 specialists having 100 or more private patient contacts per week.

## 20.8 SPECIALISTS — 2002

	Units	Value
Number of specialists		
Males	persons	9 071
Females	persons	1 438
Total	persons	10 509
Hours worked per average week		
Anaesthesia	hours	52
Dermatology	hours	50
Diagnostic imaging	hours	50
Internal medicine	hours	55
Obstetrics and gynaecology	hours	59
Ophthalmology	hours	50
Paediatrics	hours	58
Psychiatry	hours	47
Surgery	hours	59
Other	hours	44
Total	hours	54
Private patient contacts per average week(a)		
Less than 60 contacts	specialists	4 548
60–99 contacts	specialists	2 511
100 or more contacts	specialists	2 152
Total	specialists	9 211

(a) Excludes private patient contacts for diagnostic imaging specialists and other specialists.

Source: *Private Medical Practitioners, Australia, 2002* (8689.0).

## Selected business services

### Accounting services

At 30 June 2002 there were 9,860 accounting practices operating in Australia, representing an increase of 18% since 30 June 1996 (8,389). These practices employed 81,127 persons, of which 46,474 persons were practising accountants (table 20.9).

Small practices (those with one or two principals/partners) accounted for 89% of all accounting practices. However, in terms of total practice employment and income, these small practices contributed 46% and 31% respectively. Although there were only 36 practices with ten or more principals/partners, these practices accounted for 28% of total employment and 43% of total income.

Accounting practices generated \$7,708m in income in 2001–02, and incurred expenses of \$6,277m. This led to an operating profit before tax for the profession of \$1,446m representing an operating profit margin of 18.8%. This operating profit margin was slightly lower than that recorded in 1995–96 of 19.4%.

## 20.9 ACCOUNTING SERVICES

	Units	1995–96	2001–02
Practices at 30 June	no.	8 389	9 860
Employment at 30 June			
Working proprietors and principals/partners of the practice	persons	15 409	17 043
Other employees	persons	51 382	64 084
Total	persons	66 792	81 127
Income			
Income from accounting services and other related professional services(a)	\$m	4 778.3	7 537.2
Other income	\$m	160.8	170.3
Total	\$m	4 939.1	7 707.5
Expenses			
Labour costs	\$m	2 255.5	3 669.2
Payments to contractors and consultants for accounting and other professional services	\$m	76.6	142.1
Rent, leasing and hiring expenses	\$m	390.4	508.4
Other expenses	\$m	1 298.6	1 956.9
Total	\$m	4 021.1	6 276.6
Operating profit before tax	\$m	954.6	1 446.3
Operating profit margin	%	19.4	18.8
Industry value added	\$m	n.a.	5 753.2

(a) Includes income received from taxation, personal accounting, auditing, assurance, insolvency, reconstruction, bankruptcy, management/business consulting, financial planning, investment advice and other related professional services.

Source: *Accounting Practices, Australia, 2001–02* (8668.0); *Legal and Accounting Services, Australia, 1995–96* (8678.0).

Income from accounting and other related professional services contributed 98% of total income. As shown in table 20.10, business taxation services generated the largest proportion of income from accounting services (37% of total income), followed by personal accounting and taxation services (18% of total income) and auditing and assurance services (17% of total income).

## 20.10 INCOME FROM ACCOUNTING AND OTHER RELATED PROFESSIONAL SERVICES — 2001–02

Type of accounting service	Contribution to total income	
	Value \$m	%
Business taxation	2 828.7	36.7
Personal accounting and taxation	1 387.4	18.0
Auditing and assurance	1 271.7	16.5
Insolvency, reconstruction and bankruptcy	477.9	6.2
Management/business consulting	932.6	12.1
Financial planning and investment advice	215.8	2.8
Other accounting services	423.9	5.5
<b>Total</b>	<b>7 537.2</b>	<b>97.8</b>

Source: *Accounting Practices, Australia, 2001–02* (8668.0).

## Legal services

At 30 June 2002 there were 11,493 practices/organisations operating in the legal profession. These organisations comprised 7,566 solicitor practices, 3,670 barrister practices, 41 patent attorney businesses, 18 government solicitors, 8 legal aid authorities and 191 community legal centres. The legal profession had a total employment of 93,753 persons, comprising 36,124 solicitors and barristers and 57,628 other staff.

The 7,566 solicitor practices represented a 6% rise since 30 June 1999. Employment in solicitor practices increased by 18% over the same period, with 79,258 persons employed at 30 June 2002. Solicitors and barristers (29,159 persons) accounted for 37% of the total employment in solicitor practices, with the remaining employment being articulated clerks (2,879 persons), para legals (8,029 persons), patent attorneys (98 persons) and other occupations (39,092 persons) (table 20.11).

During 2001–02, solicitor practices generated \$8,379m in income. The main sources of income were from commercial work (\$2,074m), property work (\$1,756m), and personal injury work (\$1,305m). These three fields of work accounted for 61% of solicitor practice income.

Solicitor practices incurred total expenses of \$5,914m during 2001–02, with labour costs (\$3,233m) being the most significant, accounting

for 55% of total expenses. Other significant expenses for solicitor practices were rent, leasing and hiring expenses (\$578m), insurance premiums (\$204m) and bad and doubtful debts (\$150m).

The operating profit before tax for solicitor practices during 2001–02 was \$2,485m, an increase of 28% since 1998–99. However, the operating profit margin in 2001–02 was 29.7%, marginally lower than the 31.4% recorded in 1998–99.

Solicitor drawings from operating profit before tax and solicitor wages represented an average return per solicitor of \$129,500 for 2001–02.

## 20.11 SOLICITOR PRACTICES

Practices at 30 June	Units no.	1998–99	2001–02
<b>Employment at 30 June</b>			
Solicitors/barristers	persons	25 044	29 159
Other	persons	42 234	50 099
<b>Total</b>	<b>persons</b>	<b>67 278</b>	<b>79 258</b>
<b>Income</b>			
<b>Income from legal services</b>			
Commercial	\$m	1 820.9	2 074.0
Property	\$m	1 152.3	1 756.1
Personal injury	\$m	966.4	1 304.8
Banking and Finance	\$m	373.5	528.0
Family	\$m	279.1	484.7
Other	\$m	1 235.0	1 836.6
<b>Total</b>	<b>\$m</b>	<b>5 827.2</b>	<b>7 984.2</b>
Other income	\$m	364.3	394.4
<b>Total</b>	<b>\$m</b>	<b>6 191.5</b>	<b>8 378.6</b>
<b>Expenses</b>			
Labour costs	\$m	2 131.7	3 233.2
Other expenses	\$m	2 120.0	2 680.7
<b>Total</b>	<b>\$m</b>	<b>4 251.7</b>	<b>5 913.9</b>
Operating profit before tax	\$m	1 939.8	2 485.1
Operating profit margin	%	31.4	29.7
Return per solicitor/barrister	\$'000	109.6	129.5

Source: *Legal Services Industry, Australia* (8667.0).

During 2001–02, 63% of solicitor practices reported doing pro bono work. In total, 1.7 million hours of pro bono work was carried out comprising 692,000 hours on providing legal services without expectation of a fee, 94,000 hours in involvement in free community legal education and/or law reform, 489,000 hours on legal aid cases at a reduced fee or without expectation of a fee, and 415,000 hours providing other legal services at a reduced fee.

At 30 June 2002 there were 3,670 barrister practices in Australia with employment of 5,862 persons. In terms of employment, all barrister practices were small businesses. The average employment per barrister practice was 1.6 persons.

Barrister practices generated \$1,146m in income during 2001–02, a 36% rise since 1998–99.

Total expenses of barrister practices during 2001–02 were \$387m. The two major expenses were labour costs of \$76m and barristers chamber fees of \$71m. The operating profit before tax of these practices was \$759m, which represented an operating profit margin of 66.5%. This compares with an operating profit margin of 64.7% in 1998–99. The average return per barrister for 2001–02 was \$206,900 (table 20.12).

### 20.12 BARRISTER PRACTICES

	Units	1998–99	2001–02
Practices at 30 June	no.	3 704	3 670
Employment at 30 June			
Barristers	persons	3 704	3 670
Other staff	persons	2 204	2 193
Total	persons	5 908	5 862
Income			
Income from legal services	\$m	837.3	1 136.4
Other income	\$m	5.5	9.6
Total	\$m	842.8	1 146.0
Expenses			
Labour costs	\$m	49.3	76.4
Barristers chamber fees	\$m	54.1	71.2
Other expenses	\$m	195.8	239.2
Total	\$m	299.2	386.8
Operating profit before tax	\$m	543.6	759.2
Operating profit margin	%	64.7	66.5
Return per barrister	\$'000	146.8	206.9

Source: *Legal Practices, Australia, 2001–02 (8667.0); Legal Services Industry, Australia, 1998–99 (8667.0).*

### Consultant engineering services

At 30 June 2002 there were 10,984 consultant engineering businesses operating in Australia. The number of businesses has almost doubled since 1995–96 with an average annual percentage increase of 12% between the two periods (table 20.13).

These businesses employed 64,495 persons at 30 June 2002, of whom 26,680 (41%) were primarily involved in the provision of engineering services. A further 13,898 persons provided administrative/clerical services and 6,992 persons provided project management. In addition, there were a further 14,138 persons working on a contract basis for these businesses at 30 June 2002.

Consultant engineering businesses generated \$9,342m in income during 2001–02, with income from engineering services accounting for 96% of this total. The most significant fields of income from engineering services were from industrial/process engineering (\$1,864m), building/structural engineering (\$887m), and electronic/power engineering (\$728m).

### 20.13 CONSULTANT ENGINEERING SERVICES

	Units	1995–96	2001–02
Businesses at 30 June	no.	5 514	10 984
Employment at 30 June	persons	30 736	64 495
Contract persons at 30 June	persons	8 212	14 138
Income			
Income from engineering services	\$m	3 032.9	8 931.3
Other income	\$m	200.3	410.8
Total	\$m	3 233.3	9 342.0
Expenses			
Labour costs	\$m	1 241.6	3 616.3
Payments to contractors and sub consultants	\$m	498.6	1 216.7
Other expenses	\$m	995.9	3 406.5
Total	\$m	2 736.2	8 239.5
Operating profit before tax	\$m	351.0	1 152.3
Operating profit margin	%	11.0	12.5
Industry value added	\$m	n.a.	1 287.2

Source: *Consultant Engineering Services, Australia (8693.0).*

Labour related costs dominated the expenses incurred by these businesses. Labour costs (\$3,616m) and direct payments to contractors (\$1,217m) respectively accounted for 44% and 15% from the total expenditure of \$8,240m.

The operating profit before tax increased from \$351m in 1995–96 to \$1,152m in 2001–02. This increase was less dramatic for the operating profit margin, which increased from 11.0% in 1995–96 to 12.5% in 2001–02. The industry value added in 2001–02 was \$1,287m.

### Market research services

At 30 June 2002 there were 334 employing businesses predominantly involved in providing market research services in Australia. This represents an increase of 23% since end June 1999. There were 211 businesses which provided qualitative research services and 222 businesses which provided quantitative research services (i.e. some businesses provided both services) (table 20.14).

Market research businesses had employment of 12,311 persons at 30 June 2002, comprising 9,447 persons predominantly involved in data collection and processing and 1,811 persons performing client services, and research design and analysis functions. Females (8,629 persons) accounted for 70% of the total employment, with 6,802 females being employed on a casual basis. In total, there were 9,115 casuals employed at 30 June 2002 by market research businesses, and casual employees worked a total of 5.6 million hours during 2001–02.

During 2001–02, market research businesses generated \$587m in income, with the key components being income from quantitative research (\$310m) and qualitative research (\$176m). These businesses incurred expenses of \$529m, of which labour costs (\$279m) contributed 53%.

The operating profit before tax for market research businesses was \$58m (down from \$72m in 1998–99), representing an operating profit margin of 10.1% in 2001–02. The operating profit margin in 1998–99 was 15.9%.

Table 20.15 shows the distribution of market research services by type of client. The manufacturing sector was the main type of client, with 135 businesses receiving income of \$105m. Other significant client types were the retail and wholesale and the financial services sectors generating market research services income of \$88m and \$70m respectively.

## 20.14 MARKET RESEARCH SERVICES INDUSTRY

	Units	1998–99	2001–02
Businesses at 30 June	no.	272	334
Employment at 30 June			
Data collection/processing	persons	n.a.	9 447
Client services, research design and analysis	persons	n.a.	1 811
Other	persons	n.a.	1 053
<b>Total</b>	persons	10 744	12 311
<b>Income</b>			
Market research services			
Quantitative research	\$m	306.5	309.8
Qualitative research	\$m	104.2	175.7
Other (incl. desk research)	\$m	28.1	78.1
<b>Total</b>	\$m	438.8	563.5
Other income	\$m	16.9	23.3
<b>Total</b>	\$m	455.8	586.8
<b>Expenses</b>			
Labour costs	\$m	203.4	279.2
Other expenses	\$m	180.5	250.0
<b>Total</b>	\$m	383.9	529.2
Operating profit before tax	\$m	71.9	58.1
<b>Operating profit margin</b>	%	15.9	10.1

Source: Market Research Services, Australia (8556.0).

## 20.15 INCOME FROM MARKET RESEARCH, By type of client — 2001–02

	Businesses at end June(a)	Value	Proportion of income from market research
			%
	no.	\$m	%
Manufacturing	135	105.0	18.6
Automotive	69	20.3	3.6
Industrial	71	16.3	2.9
Retail and wholesale	145	87.6	15.5
Financial services	124	70.2	12.5
Utilities	72	9.8	1.7
Telecommunications and postal services	77	30.8	5.5
Other public sector	137	45.9	8.1
Media	75	43.7	7.8
Advertising agencies	85	21.9	3.9
Leisure, travel and tourism	101	34.1	6.0
Other market research businesses	130	53.7	9.5
Other	113	24.2	4.3
<b>Total</b>	<b>334</b>	<b>563.5</b>	<b>100.0</b>

(a) Businesses may have income from more than one type of client. Therefore, the counts of businesses for each type of client do not sum to the total.

Source: Market Research Services, Australia, 2001–02 (8556.0).

## Employment services

A survey of employment services organisations was conducted in respect of 2001–02. These organisations were mainly involved in the provision of employment services such as job placement on a permanent, temporary and contract employment basis. Organisations whose main income was generated primarily from other related employment services such as the preparation of curricula vitae, counselling, training or other support services for job seekers, were excluded from the survey.

At 30 June 2002 there were 2,704 organisations involved in the provision of employment services. Of these, 2,445 (90%) were for profit, with the remainder being not-for-profit organisations. During 2001–02 there were 3.7m job placements made by these organisations, representing an increase of 37% since 1998–99 (table 20.16).

At 30 June 2002 there were 32,077 persons working directly for employment services organisations, with 55% of these persons working as recruitment/employment consultants. A further 290,115 persons were employed by employment services organisations as temporary staff to be on-hired to other businesses.

During 2001–02, total income was \$10,229m. The main components of this income were client payments for temporary and contract job placements (\$8,250m or 81%), payments for permanent placement and personnel recruitment services (\$879m), and client income derived from government supported schemes (\$574m).

Total expenditure of these organisations was \$9,938m. Labour costs were the highest expense (\$8,408m), representing 85% of total expenses. Other significant expenses incurred were rent, leasing and hiring expenses (\$200m) and advertising expenses (\$123m).

In 2001–02 employment services organisations recorded an operating profit/surplus before tax of \$291m (down from \$426m in 1998–99), representing an operating profit margin of 2.9%. The operating profit margin in 1998–99 was 5.6%.

Industry value added for employment services was \$8,867m.

## 20.16 EMPLOYMENT SERVICES

	Units	1998–99	2000–01
Organisations at 30 June	no.	2 093	2 704
Placements during the year ended 30 June			
By for-profit organisations	'000	2 561.7	3 509.3
By not-for-profit organisations	'000	174.7	229.6
Total	'000	2 736.3	3 738.9
Employment at 30 June			
Persons working directly for employment placement organisations	persons	28 912	32 077
Indirect employment	persons	278 937	290 115
Total	persons	307 849	322 192
Income			
Income from clients for			
Permanent placement/personnel recruitment	\$m	547.5	879.2
Temporary and contract job placements	\$m	6 249.3	8 250.2
Other	\$m	35.3	178.6
Total	\$m	6 832.1	9 308.0
Income from government supported schemes	\$m	636.2	574.4
Other government funding	\$m	164.7	229.1
Other	\$m	184.7	117.0
Total	\$m	7 817.7	10 228.5
Expenses			
Labour costs	\$m	5 757.7	8 407.9
Rent, leasing and hiring expenses	\$m	130.1	199.9
Advertising expenses	\$m	82.9	123.1
Other expenses	\$m	1 433.4	1 206.6
Total	\$m	7 404.1	9 937.5
Operating profit/surplus before tax	\$m	426.1	290.6
Operating profit margin	%	5.6	2.9
Industry value added	\$m	n.a.	8 866.7

Source: *Employment Services, Australia* (8558.0).

## Sports and physical recreation services

A detailed survey of organisations mainly involved in sports and physical recreation activities was conducted in respect of 2000–01. Results showed that at 30 June 2001, there were 7,147 employing organisations involved in the provision of sports and physical recreation activities. These organisations employed 98,267 persons at 30 June 2001 and also had 178,837 volunteers working for them during the month of June 2001.

### Horse and dog racing

At 30 June 2001 there were 1,034 businesses primarily involved in horse and dog racing activities, which includes horse and dog racing clubs and authorities, and training businesses. Horse and dog racing businesses employed 15,900 persons at 30 June 2001, of which casual employees (10,567 persons) comprised 66% of total employment (table 20.17).

During 2000–01, the total income of horse and dog racing businesses was \$1,136m, of which net Totalisator Agency Board (TAB) distributions contributed \$555m (or 49%). These businesses incurred expenses of \$1,107m with prize money and trophy expenses (\$404m) being the most significant expense.

The operating profit before tax for horse and dog racing businesses during 2000–01 was \$31m, which resulted in an operating profit margin of 2.7%. The industry value added for these businesses was \$261m.

### 20.17 HORSE AND DOG RACING — 2000–01

	Units	Value
Businesses at 30 June 2001	no.	1 034
Employment at 30 June 2001	persons	15 900
<b>Income</b>		
Net TAB distributions received	\$m	555.4
Other income	\$m	580.2
<i>Total</i>	<i>\$m</i>	<i>1 135.6</i>
<b>Expenses</b>		
Labour costs	\$m	242.2
Prizemoney and trophy expenses	\$m	404.2
Other expenses	\$m	460.9
<i>Total</i>	<i>\$m</i>	<i>1 107.3</i>
Operating profit before tax	\$m	30.6
Operating profit margin	%	2.7
Industry value added	\$m	260.7

Source: Sports Industries, Australia, 2000–01 (8686.0).

## Health and fitness centres and gymnasias

There were 667 health and fitness centres and gymnasias businesses operating in Australia at 30 June 2001 operating from 797 locations and with 501,264 members. These businesses employed 12,552 persons, of whom 64% were females. Casual employees (8,848 persons) were predominant in these businesses, accounting for 71% of employment (table 20.18).

During 2000–01, businesses operating health and fitness centres and gymnasias generated total income of \$294m, with the main income item being takings from membership fees (\$191m) which represented 65% of total income. Total expenses were \$278m, of which labour costs accounted for 43%.

These businesses had an operating profit before tax of \$16m, which represented operating profit margin of 5.6%.

### 20.18 HEALTH AND FITNESS CENTRES AND GYMNASIA — 2000–01

	Units	Value
Businesses at 30 June 2001	no.	667
Locations at 30 June 2001	no.	797
Members at 30 June 2001	persons	501 264
<b>Employment at 30 June 2001</b>		
Males	persons	4 490
Females	persons	8 062
<i>Total</i>	<i>persons</i>	<i>12 552</i>
<b>Income</b>		
Income from membership fees	\$m	190.7
Other income	\$m	103.6
<i>Total</i>	<i>\$m</i>	<i>294.3</i>
<b>Expenses</b>		
Labour costs	\$m	119.8
Other expenses	\$m	158.3
<i>Total</i>	<i>\$m</i>	<i>278.1</i>
Operating profit before tax	\$m	16.0
Operating profit margin	%	5.6
Industry value added	\$m	140.6

Source: Sports Industries, Australia, 2000–01 (8686.0).

## Other sports and physical recreation venues

Other sports and physical recreation venues include businesses mainly engaged in the operation of any kind of indoor or outdoor sports or physical recreation facility, other than for health, fitness centres and gymnasia and horse or dog racing. At 30 June 2001 there were 864 such businesses operating in Australia. Their employment was 15,842 persons, with 7,962 volunteers working for them during June 2001. These organisations had 224,343 members at 30 June 2001 (table 20.19).

Other sports and physical recreation venue businesses generated \$3,563m in income during 2000–01, with \$645m received as income from admissions. This total income for 2000–01 included a significant contribution from the Sydney Organising Committee for the Olympic Games.

These businesses had total expenses of \$3,584m which resulted in an operating loss before tax of \$19m and an operating profit margin of –3.0%. The industry value added for other sports and physical recreation venues was \$668m.

### 20.19 OTHER SPORT AND PHYSICAL RECREATION VENUES(a) — 2000–01

	Units	Value
Businesses at 30 June 2001	no.	864
Locations at 30 June 2001	no.	1 025
Members at 30 June 2001	persons	224 343
Employment at 30 June 2001	persons	15 842
Volunteers during June 2001	persons	7 962
<b>Income</b>		
Income from admissions	\$m	644.8
Other income	\$m	2 918.3
<i>Total</i>	<i>\$m</i>	<i>3 563.1</i>
<b>Expenses</b>		
Labour costs	\$m	627.9
Other expenses	\$m	2 955.7
<i>Total</i>	<i>\$m</i>	<i>3 583.6</i>
Operating profit before tax	\$m	–18.6
Operating profit margin	%	–3.0
Industry value added	\$m	668.4

(a) Includes data for the Sydney Organising Committee for the Olympic Games. Data for the Sydney Organising Committee for the Olympic Games relates to the 18-month period ended December 2000.

Source: *Sports Industries, Australia, 2000–01* (8686.0).

## Sports and physical recreation administrative organisations

Sports and physical recreation administrative organisations include organisations mainly responsible for the policies, rules and regulations governing the conduct of an individual sporting or physical recreation discipline.

At 30 June 2001 there were 756 sports administrative organisations operating in Australia, all of which were in the not-for-profit sector. These organisations employed 11,814 persons, and were very reliant on volunteer staff with a total of 106,427 volunteers working during the month of June 2001. These volunteers mainly worked as sports officials (35,338 persons), in managerial/administrative roles (19,993 persons) and teaching, coaching and instructing (19,937 persons) (table 20.20).

During 2000–01, sports administrative organisations had total income of \$1,147m including admissions income (\$229m) and funding from government (\$106m).

The total expenditure by sports administrative organisations was \$1,100m during 2000–01. The major expense items were grants to other organisations (\$237m) and labour costs (\$225m).

During 2000–01, sports administrative organisations recorded an operating surplus before tax of \$46m, which represented an operating profit margin of 7.4%.

Industry value added for sports administrative organisations was \$229m.

**20.20 SPORTS AND PHYSICAL RECREATION  
ADMINISTRATIVE ORGANISATIONS(a) — 2000–01**

	Units	Value
Organisations at 30 June 2001	no.	756
Employment at 30 June 2001	persons	11 814
Volunteers during June 2001	persons	106 427
<b>Income</b>		
Income from admissions	\$m	228.6
Funding from government	\$m	106.1
Other income	\$m	812.0
<i>Total</i>	<i>\$m</i>	<i>1 146.7</i>
<b>Expenses</b>		
Labour costs	\$m	224.8
Grants to other organisations	\$m	237.4
Other expenses	\$m	638.0
<i>Total</i>	<i>\$m</i>	<i>1 100.2</i>
Operating profit before tax	\$m	45.7
Operating profit margin	%	7.4
Industry value added	\$m	229.2

(a) Includes data for the Sydney Paralympic Organising Committee.

Source: *Sports Industries, Australia, 2000–01 (8686.0)*.

**Sports and physical recreation clubs, teams and sports professionals**

These organisations are mainly engaged in operating individual sports or physical recreation clubs or teams which predominantly provide opportunities for participants or entertainment for spectators. Also included are sports professionals.

At 30 June 2001, there were 1,937 sporting clubs, teams and professionals operating in Australia, of which, 1,565 organisations (81%) operated on a not-for-profit basis. These organisations had employment of 23,312 persons and 61,950 volunteers during the month of June 2001. Employment in these organisations was dominated by casual employees who accounted for 52% of total employment (table 20.21).

During 2000–01, sporting clubs, teams and professionals had total income of \$1,382m, with the main source of income being from subscriptions/membership fees at \$313m. These organisations had 1.7 million members, with an average subscription or membership fee per member of \$188.

The total expenditure of sporting clubs, teams and professionals during 2000–01 was \$1,387m. Labour costs (\$595m) was the major expense item, with other significant expenses being purchases of goods (\$151m), depreciation and

amortisation (\$83m) and advertising, marketing, promotional and sponsorship expenses (\$73m). In addition, these organisations incurred a \$23m expense for contract payments to professional sportspersons.

The sporting clubs, teams and professionals recorded an operating loss before tax of \$13m during 2000–01, which represented an operating profit margin of –1.3% for these organisations.

Industry value added for sports and physical recreation clubs, teams and sports professionals was \$543m.

**Sports and physical recreation support services**

These businesses mainly provide support services such as sport and physical recreation services, education and coaching services, and personal fitness training services. At 30 June 2001 there were 1,259 businesses primarily involved in providing support services to sport, of which 94% operated on a for-profit basis. These businesses employed 8,028 persons, with 4,887 (61%) being females. A total of 5,024 persons were employed on a casual basis (table 20.22).

**20.21 SPORTS AND PHYSICAL RECREATION CLUBS, TEAMS AND SPORTS PROFESSIONALS — 2000–01**

	Units	Value
<b>Organisations at 30 June</b>		
For-profit	no	372
Not-for-profit	no	1 565
<i>Total</i>	<i>no</i>	<i>1 937</i>
Employment at 30 June 2001	persons	23 312
Volunteers during June 2001	persons	61 950
<b>Income</b>		
Income from membership fees	\$m	313.1
Income from sponsorship and fundraising	\$m	252.3
Other income	\$m	816.4
<i>Total</i>	<i>\$m</i>	<i>1 381.8</i>
<b>Expenses</b>		
Labour costs	\$m	595.1
Purchases of goods	\$m	150.8
Other expenses	\$m	641.0
<i>Total</i>	<i>\$m</i>	<i>1 386.9</i>
Operating profit before tax	\$m	–12.5
Operating profit margin	%	–1.3
Industry value added	\$m	542.8

Source: *Sports Industries, Australia, 2000–01 (8686.0)*.

The total income generated by businesses providing support services to sport was \$215m in 2000–01.

Total expenditure for these businesses was \$187m of which labour costs accounted for \$83m (45%). Other expenses included rent, leasing and hiring expenses (\$16m), advertising, marketing, promotional and sponsorship expenses (\$9m) and travelling, accommodation and entertainment expenses (\$7m).

The operating profit before tax in 2000–01 for businesses providing support services to sport was \$28m, representing an operating profit margin of 16.2%.

Industry value added for sports and recreation support services was \$100m

## 20.22 SPORTS AND PHYSICAL RECREATION SUPPORT SERVICES — 2000–01

	Units	Value
Organisations at 30 June		
For-profit	no	1 181
Not-for-profit	no	78
Total	no	1 259
Employment at 30 June 2001	persons	8 028
Members at 30 June 2001	persons	81 901
Income		
Income from casual playing fees	\$m	36.0
Funding from government	\$m	19.3
Other income	\$m	159.9
Total	\$m	215.2
Expenses		
Labour costs	\$m	83.2
Rent, leasing and hiring expenses	\$m	16.2
Other expenses	\$m	87.1
Total	\$m	186.5
Operating profit before tax	\$m	28.0
Operating profit margin	%	16.2
Industry value added	\$m	100.1

Source: *Sports Industries, Australia, 2000–01* (8686.0).

## Government organisations involved in sport and physical recreation activities

Government organisations include units that were classified to the general government sector with primary portfolio responsibility for sport, or mainly involved in the provision of sports services. Local government authorities providing sports and physical recreation services were also included.

At the end of June 2001 there were 630 government organisations involved in sports and physical recreation activities in Australia, comprising 13 federal and state/territory government organisations and 617 local government organisations. These government organisations employed 10,820 persons who spent the majority of their time working on sports and physical recreation related activities. These employees comprised 2,813 (26%) managers and administrative staff, 2,205 (20%) repair and maintenance staff, 1,870 (17%) coaches and trainers, 585 (5%) sports development officers and 3,347 (31%) other staff (table 20.23).

The total sports and physical recreation support services related income of these government organisations in 2000–01 was \$730m. The major source of this income was government funding of \$463m, or 63% of total income. While the significance of government funding is reflected in the income of federal/state government organisations, the main source of income for local government organisations was from admissions (\$152m), and income from rent, leasing and hiring of sporting grounds and recreational facilities (\$49m).

The total expenditure of government organisations on the provision of sports and physical recreation support services was \$965m during 2000–01. The major item of expenditure was wages and salaries (\$255m), which accounted for 26% of the total expenditure. Other major expense items were sporting subsidies and grants provided to organisations and individuals of \$216m (22% of total expenditure) and repair and maintenance of sporting grounds and physical recreation facilities of \$169m (17% of total expenditure).

**20.23 GOVERNMENT ORGANISATIONS — 2000–01**

	Units	Federal/state government organisations	Local government organisations	Total
Organisations at 30 June	no.	13	617	630
Employees who spent the majority of their time on sports and physical recreation related activities				
Managers and administrative staff	persons	1 036	1 777	2 813
Sports development officers	persons	85	500	585
Coaches and trainers	persons	272	1 598	1 870
Repair and maintenance staff	persons	31	2 174	2 205
Other	persons	347	3 000	3 347
Total	persons	1 771	9 049	10 820
Income from sports and physical recreation activities				
Income from rent, leasing and hiring of sporting grounds and physical recreation facilities	\$m	2.0	48.9	50.9
Income from admissions	\$m	1.1	152.0	153.1
Income from advertising/sponsorship of sporting events	\$m	6.2	0.5	6.7
Funding from government	\$m	420.9	41.8	462.7
Other	\$m	42.8	13.3	56.1
Total(a)	\$m	473.0	256.5	729.5
Items of expenditure on sports and physical recreation activities				
Wages and salaries	\$m	87.4	167.4	254.8
Repair and maintenance of sporting grounds and physical recreation facilities	\$m	10.4	158.1	168.5
Payments to contractors (and lessees) to operate sporting grounds and physical recreation facilities	\$m	–	31.1	31.1
Payment of sporting subsidies and grants	\$m	193.7	22.1	215.8
Depreciation of sporting grounds and physical recreation facilities	\$m	11.8	99.1	110.9
Other expenses related to sporting grounds and physical recreation facilities	\$m	134.8	49.6	184.4
Total	\$m	437.9	527.4	965.3

(a) It is estimated that \$32.9m of total income is attributable to the conduct of the Sydney 2000 Olympic and Paralympic Games.

Source: *Sports Industries, Australia, 2000–01* (8686.0).

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## TOURISM

Tourism encompasses most short-term travel away from the normal place of work and residence.

It is defined by the World Tourism Organisation as ‘the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes’.

This identifies ‘tourism’ as being more than just leisure travel. It also encompasses travel for business, health, education, religious and other reasons.

Tourism comprises both domestic and international travel. As it involves the consumption or purchase by tourists — or ‘visitors’ in the World Tourism Organisation terminology — of any good or service, its economic impact is felt across many sectors of the economy. In Australia the industries most affected by direct tourism demand are transport, accommodation, cafes, restaurants, takeaway food outlets and other retail trade. Indirectly, tourism affects a wide range of other industries. When a visitor buys a meal, for example, tourism indirectly creates demand in the food manufacturing, transportation and electricity industries in order to produce the inputs required to make the meal.

Tourism also draws on services provided by the Australian Government, state and territory governments and local government organisations without direct charge to tourists. These include: the construction and maintenance of roads, airports, harbours, railways and national parks; tourism promotion; immigration and customs services; information services; and the provision of a large number of recreational facilities.

While tourism has long been an economic factor in Australia, in recent times it has grown to the extent that it is now recognised as a major contributor to total economic activity. In 2001–02 the tourism industry contributed 4.5% to Australia’s gross domestic product.

Australia’s island status and distance from most of its international source markets mean that tourism in Australia will continue to be dominated by domestic tourism for the foreseeable future. International tourism only accounts for around one-quarter of total tourism consumption.

The chapter contains an article *Aboriginal tourism*.

## The economic contribution of tourism

Tourism is important to the Australian economy, underpinning a wide range of industries. The Tourism Satellite Account (TSA) reported that more than \$70b worth of tourism goods and services were consumed in 2001–02.

Tourism is not an ‘industry’ in the traditional sense. Industries are classified in accordance with the goods and services they produce, whereas tourism depends on the status of the customer (visitor). For example, consumption of a restaurant meal by a visitor is defined as ‘tourism’. When the meal is consumed by a resident, the consumption is not ‘tourism’. The TSA creates a broad picture of tourism, which allows it to be compared to conventional industries like agriculture, manufacturing and retail trade.

The estimates of tourism gross value added relate to the direct impact of tourism activity. This means only the value added where there is a direct economic or physical relationship between the visitor and the producer of a good or service is included. Similarly, the employment estimates only include employment generated where visitors have a direct relationship with the producer of the good or service.

## Tourism gross value added

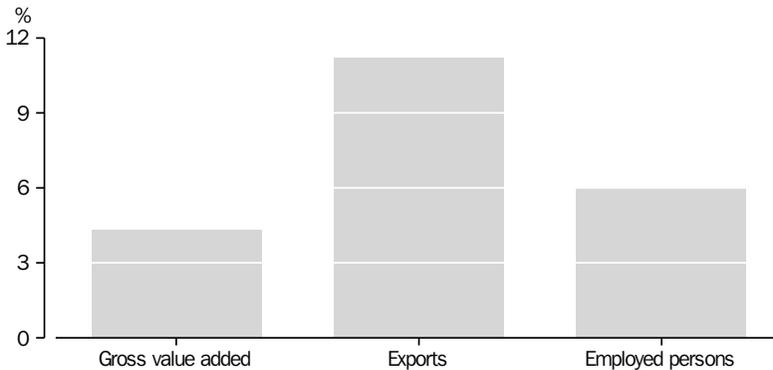
Gross value added is the preferred national accounts measure of industry production as it excludes taxes and subsidies on products. In 2001–02, tourism gross value added was \$26.5b, contributing 4.1% to total industry gross value added (graph 21.1). The industries which accounted for the largest shares of tourism gross value added were: air and water transport (14%); accommodation (11%); cafes, restaurants and takeaway food outlets (10%); and the other retail trade industry (9%). The remaining share was distributed widely among other industries.

## Employment

In 2001–02 tourism directly generated 549,000 jobs, a marginal decrease on 2000–01. The tourism industry’s share of total national employment fell in 2001–02 to 5.9%, following a consistent 6.0% share of national employment from 1997–98 to 2000–01.

Retail trade generated the most direct tourism employment (145,400 persons) in 2001–02. Retail trade, accommodation, and cafes and restaurants accounted for more than half of the employment generated by tourism.

**21.1 TOURISM'S SHARE OF THE AUSTRALIAN ECONOMY — 2001–02**



Source: Australian National Accounts: Tourism Satellite Account, 2001–02 (5249.0).

## Domestic tourism

Australian residents aged 15 years and over spent an estimated 298.7 million nights visiting other parts of the country in 2002 (table 21.2). Each trip took an average of 4.0 nights and each person in the population (aged 15 years and over) made an average of 4.8 trips during 2002. Residents of the Australian Capital Territory were the most frequent travellers (averaging 6.9 trips per person), while residents of the Northern Territory tended to stay away for the longest period (averaging 7.0 nights per trip).

Domestic visitor nights refer to the number of nights Australian residents aged 15 years and over spent away from home in association with individual visits.

The number of domestic visitor nights grew 3.1% in 2002 compared to 2001. Domestic visitor nights in Tasmania showed the strongest growth (10.1%), following negative growth in previous years. The Australian Capital Territory was the only state/territory which recorded negative growth (down 6.4%) in 2002 compared to 2001 (table 21.3).

The average annual growth rate for domestic visitor nights in Australia between 1998 and 2002 was 0.4%. Queensland had the highest average annual growth rate (2.3%) between 1998 and 2002. Tasmania had the lowest average annual growth (-1.1%) rate between 1998 and 2002.

### 21.2 PERSON TRIPS AND NIGHTS AWAY(a), By state/territory of origin — 2002

Origin	Estimated resident population as at 30 June 2002(b)	Person trips	Average trips per person	Total nights away	Average nights away per person trip
	'000	'000		'000	
New South Wales	5 302	26 587	5.0	102 531	3.9
Victoria	3 911	19 001	4.9	69 538	3.7
Queensland	2 928	13 870	4.7	56 243	4.1
South Australia	1 231	5 221	4.2	22 287	4.3
Western Australia	1 528	6 591	4.3	28 698	4.4
Tasmania	375	1 574	4.2	7 101	4.5
Northern Territory	147	719	4.9	4 999	7.0
Australian Capital Territory	257	1 775	6.9	7 261	4.1
<b>Australia</b>	<b>(c)15 681</b>	<b>75 339</b>	<b>4.8</b>	<b>298 658</b>	<b>4.0</b>

(a) Australian residents aged 15 years and over. (b) Sourced from 'Australian Demographic Statistics, June Quarter 2002' (3101.0). (c) Includes Other Territories.

Source: Bureau of Tourism Research, 'National Visitor Survey'.

### 21.3 VISITOR NIGHTS(a), By state/territory of destination

	Destination								Aust.(b)
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	
	'000	'000	'000	'000	'000	'000	'000	'000	'000
1998	94 862	55 718	69 658	20 232	29 770	9 177	7 683	5 253	<b>293 456</b>
1999	93 866	52 565	78 083	19 272	29 219	8 517	6 430	5 963	<b>294 266</b>
2000	92 559	54 039	74 087	21 251	28 857	8 139	7 914	6 467	<b>293 384</b>
2001	89 447	55 747	75 002	19 508	28 068	7 970	7 174	5 749	<b>289 644</b>
2002	93 269	56 684	76 342	20 424	29 748	8 775	7 518	5 382	<b>298 658</b>

(a) Australian residents aged 15 years and over. (b) Includes unspecified and offshore visits that could not be allocated to a state/territory.

Source: Bureau of Tourism Research, 'National Visitor Survey'.

'Holiday/leisure' was the main purpose of 46% of domestic visitor nights in 2002. 'Holiday/leisure' accounted for the largest proportion of visitor nights in almost every state/territory. The exception was the Australian Capital Territory, where 'visiting friends/relatives' accounted for the largest share of visitor nights in 2002 (table 21.4).

New South Wales was the most popular destination in 2002, accounting for almost a third of all visitor nights (31%). Queensland was the next most popular destination, with over a quarter of all visitor nights (26%).

In 2002 the most frequently used accommodation by domestic travellers was the property of friends or relatives (41% of visitor nights), followed by hotels, resorts, motels and motor inns (23%) (table 21.5).

Intrastate visits accounted for 56% of domestic tourism visitor nights in 2002. Intrastate visits were particularly important in Western Australia, New South Wales and Victoria. In these states 71%, 64% and 60% respectively of domestic visitor nights spent in the state were by residents of the state (table 21.6).

In terms of numbers of visitor nights, net beneficiaries from domestic tourism (i.e. where inbound interstate visitor nights are greater than outbound interstate visitor nights) in 2002 were Queensland, Western Australia, Tasmania and the Northern Territory. Queensland benefited most from tourism in relative terms, with over twice as many inbound visitor nights as outbound visitor nights. Victoria contributed the most to tourism in relative terms, with the number of outbound visitor nights over one and a half times that of inbound visitor nights.

#### 21.4 VISITOR NIGHTS(a), By state/territory of destination and main purpose of visit — 2002

	Business '000	Holiday/leisure '000	Visiting friends/relatives '000	Other '000	Total(b) '000
New South Wales	13 227	42 516	32 468	3 809	93 269
Victoria	7 359	25 423	19 877	3 141	56 684
Queensland	10 083	39 535	20 849	4 427	76 342
South Australia	3 092	8 769	6 778	1 192	20 424
Western Australia	6 197	12 757	7 871	1 493	29 748
Tasmania	1 670	4 579	1 905	480	8 775
Northern Territory	2 439	3 235	1 035	*227	7 518
Australian Capital Territory	1 468	1 522	2 027	*350	5 382
<b>Australia(c)</b>	<b>46 000</b>	<b>138 381</b>	<b>92 814</b>	<b>15 118</b>	<b>298 658</b>

(a) Australian residents aged 15 years and over. (b) Includes visitor nights where purpose of visit was not stated. (c) Components may not add to total as total includes unspecified and offshore visitor nights that could not be allocated to a state or territory.

Source: Bureau of Tourism Research, 'National Visitor Survey'.

#### 21.5 VISITOR NIGHTS(a), Type of accommodation used — 2002

	NSW '000	Vic. '000	Qld '000	SA '000	WA '000	Tas. '000	NT '000	ACT '000	Aust.(b) '000
Hotel, resort, motel, motor inn	22 082	11 662	20 037	3 788	5 296	2 484	1 742	1 881	69 436
Guest house/B&B	1 445	1 256	*391	*281	472	*447	**36	**27	4 355
Self-catering cottage/apartment	8 826	4 436	11 765	1 572	2 377	652	*452	*290	30 371
Caravan park or commercial camping ground	9 511	5 950	5 517	2 831	3 700	967	1 084	*201	29 761
Caravan or camping on private property	3 057	2 050	3 002	668	2 117	*412	676	**62	12 046
Friends' or relatives' property	41 063	25 301	28 522	8 590	10 992	2 578	1 851	2 702	121 648
Own property (e.g. holiday house)	3 334	3 254	2 185	947	946	*381	**14	**18	11 078
Other/not stated(c)	2 700	1 892	3 474	1 154	2 416	713	1 079	*186	13 616
<b>Total(d)</b>	<b>93 269</b>	<b>56 684</b>	<b>76 342</b>	<b>20 424</b>	<b>29 748</b>	<b>8 775</b>	<b>7 518</b>	<b>5 382</b>	<b>298 658</b>

(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. (c) Other accommodation includes backpacker/hostel, university/school dormitory/college, hospital/hospital-related accommodation for relatives, and privately owned boat/yacht etc. (d) Includes visitor nights where accommodation type was not stated.

Source: Bureau of Tourism Research, 'National Visitor Survey'.

## 21.6 VISITOR NIGHTS(a) — 2002

Residence	Destination								
	NSW '000	Vic. '000	Qld '000	SA '000	WA '000	Tas. '000	NT '000	ACT '000	Aust. '000
New South Wales	60 034	10 490	20 801	2 725	2 418	1 875	1 236	2 954	102 531
Victoria	12 837	33 983	11 220	3 585	2 759	2 069	1 977	1 108	69 538
Queensland	10 372	3 163	37 592	833	1 684	528	1 005	598	56 243
South Australia	2 921	3 997	2 185	10 889	1 032	*456	*425	*383	22 287
Western Australia	1 403	2 003	1 158	1 106	21 177	622	996	*186	28 698
Tasmania	759	1 635	1 121	*214	*137	3 065	*108	**63	7 101
Northern Territory	666	*413	1 097	816	*167	**84	1 683	**71	4 999
Australian Capital Territory	4 277	1 000	1 168	*257	*373	**77	**88	**20	7 261
<b>Total(b)</b>	<b>93 269</b>	<b>56 684</b>	<b>76 342</b>	<b>20 424</b>	<b>29 748</b>	<b>8 775</b>	<b>7 518</b>	<b>5 382</b>	<b>298 658</b>

(a) Australian residents aged 15 years and over. (b) Includes other and not stated.

Source: Bureau of Tourism Research, 'National Visitor Survey'.

## International inbound tourism

### Characteristics

There were 4.8 million inbound international visitors in 2002, down 0.3% from 2001 (table 21.7).

The average annual growth rate for inbound visitors between 1992 and 2002 was 6.4%. The level of international inbound visitors to Australia increased by 2.2 million (86%) in the decade beginning 1992. Annual growth rates of inbound visitors were strongly positive for most of the period. It is likely that events such as the terrorist attacks in the United States of America (September 2001) and Bali (October 2002) affected the annual growth rates for 2001 and 2002, and the Asian economic crisis impacted on that for 1998.

In 2002, New Zealand was Australia's largest source of international visitors, accounting for 16% of total inbound visitors, followed by Japan (15%) and the United Kingdom (13%). 'Holiday' was the main purpose of visit for two-thirds (67%) of the international visitors. New Zealand was also the main source of visitors for business purposes (26%), while the United Kingdom accounted for one-quarter of all visitors arriving for employment. Visitors from Asian countries accounted for just over two-fifths (43%) of all international visitors and nearly two-thirds (62%) of all visitors arriving in Australia for 'education' purposes (table 21.8).

In 2002 over half (58%) of international visitors to Australia stayed for less than two weeks (table 21.9). Visitors arriving for 'education'

purposes tended to stay relatively long periods (84% of these visitors stayed for a minimum of two weeks and 44% for six months or more in 2002) but their absolute numbers were relatively small.

In 2002 most arrivals were in December (11% of total arrivals), while the fewest arrivals (7%) were in May. December was the month in which the highest number of 'holiday' visitors arrived. December was also the month in which the fewest visitors came for business, education and employment purposes. November had the highest number of business visitors and May the fewest visitors arriving for a holiday (table 21.10).

### 21.7 INBOUND VISITORS

	Visitors	Change(a)
	'000	%
1992	2 603.3	9.8
1993	2 996.2	15.1
1994	3 361.7	12.2
1995	3 725.8	10.8
1996	4 164.8	11.8
1997	4 317.9	3.7
1998	4 167.2	-3.5
1999	4 459.5	7.0
2000	4 931.4	10.6
2001	4 855.7	-1.5
2002	4 841.2	-0.3

(a) From previous calendar year.

Source: Overseas Arrivals and Departures, Australia (3401.0).

## 21.8 INBOUND VISITORS, By country/region of residence and main purpose of trip — 2002

Country/region of residence	Main purpose of trip					Total visitors '000	Change on 2001 %
	Business(a) '000	Holiday(b) '000	Employment '000	Education '000	Other and not stated '000		
New Zealand	150.8	513.4	10.1	8.7	107.1	790.1	-3.0
Other Oceania	13.0	68.1	1.0	3.8	28.9	114.9	-8.4
Germany	11.2	101.5	2.6	5.6	14.0	134.8	-8.7
United Kingdom	42.8	509.7	20.4	5.3	64.4	642.7	4.1
Other Europe	44.0	272.9	10.1	20.6	55.5	403.0	-2.7
Indonesia	8.9	48.2	1.1	13.8	17.4	89.4	-8.7
Malaysia	14.3	113.2	1.2	12.8	17.5	159.0	6.4
Singapore	32.7	183.5	2.5	16.6	51.5	286.9	-3.1
Hong Kong (SAR of China)	17.1	97.9	1.1	12.8	22.0	150.9	-2.1
Japan	35.9	531.4	5.1	17.9	125.1	715.5	6.2
Korea, Republic of (South)	12.0	132.0	2.1	14.9	28.7	189.7	8.0
Taiwan	4.8	67.1	0.5	6.9	18.1	97.4	-11.5
Other Asia	69.6	200.3	6.1	40.8	72.6	389.3	8.0
United States of America	84.3	251.5	13.3	26.8	58.5	434.5	-2.7
Other America	14.7	81.6	2.1	7.1	16.2	121.7	-7.1
Middle East and North Africa	5.5	33.4	0.5	2.1	10.0	51.5	-8.4
Other Africa	10.4	41.8	1.7	2.2	11.1	67.3	-5.9
Not stated	0.4	1.5	0.1	—	0.5	2.6	-81.4
<b>Total</b>	<b>572.4</b>	<b>3 249.1</b>	<b>81.9</b>	<b>218.9</b>	<b>719.0</b>	<b>4 841.2</b>	<b>-0.3</b>

(a) Includes those visitors attending a convention or conference. (b) Includes those visitors whose main purpose is visiting friends and relatives.

Source: ABS data available on request, Overseas Arrivals and Departures Collection.

## 21.9 INBOUND VISITORS, By intended length of stay and main purpose of trip — 2002

Intended length of stay	Main purpose of trip					Total '000	Proportion of total %
	Business(a) '000	Holiday(b) '000	Employment '000	Education '000	Other and not stated '000		
Under 1 week	255.0	898.2	8.3	9.3	187.0	1 357.9	28.0
1 week and under 2 weeks	175.9	904.1	9.6	25.1	320.8	1 435.5	29.7
2 weeks and under 1 month	76.5	793.8	6.4	21.8	99.3	997.8	20.6
1 month and under 2 months	25.0	324.6	5.2	12.3	43.9	411.0	8.5
2 months and under 3 months	11.2	103.1	5.0	13.9	17.0	150.3	3.1
3 months and under 6 months	15.6	133.0	15.6	40.5	24.0	228.7	4.7
6 months and under 12 months	13.2	92.1	31.7	95.9	27.0	260.0	5.4
<b>Total</b>	<b>572.4</b>	<b>3 249.1</b>	<b>81.9</b>	<b>218.9</b>	<b>719.0</b>	<b>4 841.2</b>	<b>100.0</b>

(a) Includes those visitors attending a convention or conference. (b) Includes those visitors whose main purpose is visiting friends and relatives.

Source: ABS data available on request, Overseas Arrivals and Departures Collection.

### 21.10 INBOUND VISITORS, By month and main purpose of trip — 2002

	Main purpose of trip					Total visitors '000	Proportion of total %
	Business(a) '000	Holiday(b) '000	Employment '000	Education '000	Other and not stated '000		
January	35.3	237.9	9.0	29.1	68.0	379.3	7.8
February	46.4	274.5	7.2	37.0	72.2	437.2	9.0
March	49.0	300.9	9.6	16.5	70.5	446.5	9.2
April	55.9	241.5	8.5	13.2	41.3	360.3	7.4
May	54.3	204.9	6.5	9.2	55.0	329.9	6.8
June	40.7	218.5	5.7	14.2	60.4	339.4	7.0
July	50.4	244.7	5.6	44.9	72.5	418.2	8.6
August	43.5	239.9	6.4	13.7	68.4	371.9	7.7
September	49.8	224.6	6.6	11.1	66.5	358.6	7.4
October	56.4	302.9	6.1	14.8	48.6	428.9	8.9
November	56.7	319.9	6.1	8.5	45.7	437.0	9.0
December	34.0	438.8	4.4	6.9	49.8	534.0	11.0
<b>Total</b>	<b>572.4</b>	<b>3 249.1</b>	<b>81.9</b>	<b>218.9</b>	<b>719.0</b>	<b>4 841.2</b>	<b>100.0</b>

(a) Includes those visitors attending a convention or conference. (b) Includes those visitors whose main purpose is visiting friends and relatives.

Source: *Overseas Arrivals and Departures, Australia (3401.0)*.

In 2002, 41% of all nights spent in Australia by international visitors were spent in New South Wales. Queensland was the next most popular state, accounting for 20% of all international visitor nights. Tasmania and the Australian Capital Territory were the least popular destinations, each accounting for less than 2% of international visitor nights in 2002 (table 21.11).

### Expenditure

In 2002 international visitors to Australia spent an average of \$4,748 on each trip. Visitors from the United States of America spent the most, averaging \$7,127, followed by those from Germany (\$6,826) and all other European countries (Other Europe) (\$6,445). The lowest average expenditure, \$2,121 per visitor, was by visitors from New Zealand (table 21.12).

The top three expenditure items for the average visitor expenditure of all countries combined were: prepaid international airfares; food, drink and accommodation; and package tours.

Education fees accounted for a relatively large proportion of total expenditure for visitors from most of the Asian countries in 2002. Education fees was among the top three expenditure items for visitors from:

- Indonesia (\$1,518 or 26% of expenditure)
- Thailand (\$1,094 or 24% of expenditure)
- Malaysia (\$726 or 19% of expenditure)
- Hong Kong (\$715 or 15% of expenditure)
- Other Asia (\$698 or 14% of expenditure).

### 21.11 INBOUND VISITOR NIGHTS(a), By state/territory and main purpose of trip — 2002

	Main purpose of trip				Total '000	Proportion of total %
	Business '000	Visiting friends/ relatives '000	Holiday '000	All other reasons '000		
New South Wales	3 555	7 387	16 805	20 965	48 711	41.0
Victoria	1 456	4 810	5 149	10 001	21 417	18.0
Queensland	1 779	4 385	13 524	4 212	23 900	20.1
South Australia	399	765	1 644	1 673	4 481	3.8
Western Australia	541	2 889	5 463	4 700	13 593	11.4
Tasmania	57	349	1 013	215	1 634	1.4
Northern Territory	169	178	2 290	316	2 952	2.5
Australian Capital Territory	189	436	350	1 044	2 019	1.7
<b>Australia</b>	<b>8 154</b>	<b>21 200</b>	<b>46 260</b>	<b>43 131</b>	<b>118 745</b>	<b>100.0</b>

(a) All visitors aged 15 years and over.

Source: *Bureau of Tourism Research, 'International Visitor Survey'*.

International visitors whose main purpose of trip was education or employment had the highest average expenditure in 2002 (\$13,448 and \$10,092, respectively) (table 21.13).

### 21.12 AVERAGE VISITOR EXPENDITURE — 2002

Country/region of residence	Items of expenditure								Total
	Package tours	Prepaid international airfares	Transport(a)	Food, drink and accommodation	Shopping	Entertainment and gambling	Education fees	Other(b)	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
New Zealand	257	530	200	649	353	70	9	54	2 121
Germany	1 574	1 673	1 031	1 677	350	95	323	103	6 826
United Kingdom	1 013	1 969	678	1 490	430	123	53	86	5 842
Other Europe	1 203	1 842	797	1 670	426	116	283	108	6 445
Indonesia	433	821	529	1 399	782	131	1 518	162	5 775
Malaysia	370	741	314	967	473	157	726	120	3 870
Singapore	310	727	683	886	389	158	582	70	3 806
Hong Kong (SAR of China)	510	1 018	442	1 197	561	151	715	138	4 731
Japan	2 179	316	247	365	571	37	119	24	3 856
Korea, Republic of (South)	1 012	818	410	1 076	727	108	776	84	5 010
Taiwan	1 280	687	306	709	606	138	529	57	4 312
Thailand	440	802	389	1 161	470	130	1 094	131	4 617
China (excl. SARs & Taiwan Prov.)	1 119	1 277	400	1 214	710	192	959	135	6 006
Other Asia	655	1 278	425	1 289	491	91	698	194	5 121
United States of America	1 642	2 149	616	1 468	485	123	550	93	7 127
Canada	972	1 926	647	1 502	370	136	114	119	5 787
Other countries	455	1 423	378	898	527	77	261	82	4 101
<b>All countries</b>	<b>1 032</b>	<b>1 167</b>	<b>474</b>	<b>1 061</b>	<b>483</b>	<b>104</b>	<b>345</b>	<b>83</b>	<b>4 748</b>

(a) Includes: organised tours; international airfares bought in Australia; domestic airfares; other transport fares; self-drive cars, rent-a-cars, campervans; petrol and oil for self-drive cars or other vehicles; and motor vehicles. (b) Includes: phone, Internet, fax and postage; convention registration fees; medical expenses; and other expenses not elsewhere specified.

Source: Bureau of Tourism Research, 'International Visitor Survey'.

### 21.13 AVERAGE VISITOR EXPENDITURE, By expenditure item and main purpose of trip — 2002

Expenditure item	Main purpose of trip						Total
	Business	Visiting friends and relatives	Holiday	Education	Employment	All other reasons	
	\$	\$	\$	\$	\$	\$	\$
Package tours	553	168	1 538	678	309	769	1 032
Prepaid international airfares	1 719	1 493	870	1 247	1 424	1 417	1 167
Transport(a)	252	325	495	1 229	1 681	230	474
Food, drink and accommodation	1 131	654	841	3 756	4 892	547	1 061
Shopping	367	475	483	869	809	286	483
Entertainment and gambling	83	74	96	283	472	44	104
Education fees	13	55	60	5 036	80	72	345
Other(b)	123	54	46	348	424	78	83
<b>All items</b>	<b>4 242</b>	<b>3 298</b>	<b>4 428</b>	<b>13 448</b>	<b>10 092</b>	<b>3 443</b>	<b>4 748</b>

(a) Includes: organised tours; international airfares bought in Australia; domestic airfares; other transport fares; self-drive cars, rent-a-cars, campervans; petrol and oil for self-drive cars or other vehicles; and motor vehicles. (b) Includes: phone, Internet, fax and postage; convention registration fees; medical expenses; and other expenses not elsewhere specified.

Source: Bureau of Tourism Research, 'International Visitor Survey'.

# Aboriginal tourism

*This article was contributed by Breeze Robertson-Friend on behalf of  
Aboriginal Tourism Australia.*

## Introduction

Aboriginal tourism gives Indigenous people the chance to tell their story in their way, to share cultural insights, traditional practices and contemporary concerns with non-Indigenous Australians and international visitors. Indigenous communities view tourism as a means of both educating others about Indigenous culture, and creating employment and training opportunities at a local level.

## Defining Aboriginal tourism

Aboriginal tourism experiences are varied, but a common thread is the inclusion of insights about the cultural knowledge, lifestyle and beliefs of Australia's Indigenous people. Aboriginal tourism goes beyond the lifestyles and traditions of Indigenous people who live on homelands, out-stations and remote communities to include the urban experience of Australia's Indigenous persons. Rock art tours, politically themed art exhibitions, live theatre and stories from the Dreamtime told around a campfire are all expressions of Indigenous culture.

The National Aboriginal and Torres Strait Islander Tourism Industry Strategy defines Indigenous tourism as including all forms of participation by Indigenous persons in tourism:

- as employers
- as employees
- as investors
- as joint venture partners
- providing Indigenous cultural tourism products
- providing mainstream tourism products.

The Australian Tourist Commission has defined Aboriginal tourism for marketing purposes as 'a tourism experience or service, which is majority owned or operated by Aboriginal people and/or owned or operated in partnership with non-Aboriginal people'. However, focusing on ownership alone tends to restrict inclusion in this diverse category of tourism products. For

example, in New South Wales only 39 of 250 Aboriginal tour operations were Aboriginal-owned in 2001.

The Aboriginal Tourism Australia (ATA) is a non-profit company established in 1995 following a recommendation of the National Aboriginal and Torres Strait Islander Tourism Industry Strategy and national meetings of Indigenous operators. It provides leadership and a focus for the development of Aboriginal tourism, consistent with Aboriginal economic, cultural and environmental values. ATA has adopted a broader description of Aboriginal tourism which encompasses four distinct but related elements. Aboriginal tourism is:

- concerned with cultural and biological diversity
- asserts prior informed participation of all stakeholders, and active decision-making processes accorded to Indigenous and local communities
- recognises Indigenous persons' special connection to land and waters
- recognises customary proprietary knowledge held on a community and individual basis.

In Aboriginal culture the significance of land is intimately bound in the spirituality surrounding the origins of landscapes, animals, plants and people. Traditional owners, or custodians, have a responsibility to look after the environmental, cultural and spiritual wellbeing of the land. This unique relationship and respect for the land is increasingly attracting visitors seeking to 'touch the earth'.

Another key element of Aboriginal tourism is cultural control, considered crucial to maintaining authenticity and preventing cultural exploitation and cultural appropriation. Intellectual and cultural property rights, along with copyright issues, are of particular concern to Indigenous Australians.

Authenticity is important to international visitors. ATA makes the distinction between 'authenticity' and 'authenticated products' where the key

components are the source of the material and approval given by the appropriate custodian for that material to be shared. This means an Indigenous person from another area, or in some cases a non-Indigenous person, can be authorised to speak about local culture within specific cultural boundaries.

The close affinity between tourism products and culture demands flexibility, which sometimes challenges traditional tourism norms. Cultural laws and practices both define and influence Aboriginal tourism. Permits may be needed to enter some areas and roads may be closed at short notice — even access to the iconic Uluru has been temporarily revoked for ceremonies.

### Recent developments

Market research has recently assessed awareness of Aboriginal tourism among overseas visitors to Australia. Europe, led by Germany, has emerged as the strongest market for Aboriginal tourism. German tourists are the most likely to travel to the Australian outback. While 35% of German tourists made a trip to the outback, only 5% of Japanese tourists visited the outback in 1999–2000. About 80% of German tourists 'strongly agreed' or 'agreed' that Australia offered very interesting cultural experiences. Visitors from European countries generally indicated a high level of interest and knowledge about Indigenous culture. In a recent survey of potential Chinese visitors, 39% expressed interest in Indigenous cultural products.

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Significantly, 37% of international visitors expressing 'high' or 'medium' interest in Aboriginal tourism left Australia without participating in an Aboriginal tourism experience, according to the *Survey of Indigenous Tourism 2000*. The report, which focuses on expectations of Aboriginal tourism experiences, satisfaction, conversion and identifying target markets, notes that reasons for this include time constraints and inability to find the appropriate information.

An industry priority has been the development of guidelines for the accreditation of Aboriginal tourism operators. After two years of consultation with Indigenous communities, industry stakeholders and tourism operators, ATA has recently developed an accreditation program *Respecting Our Culture*.

Elements of the accreditation program include:

- business management — developing sound business practices, risk management and professionalism
- cultural protocols — protecting cultural integrity and authentication at a local level
- sustainable environmental practices — 'Caring for Country' incorporating principles of minimal environmental impact.

By encouraging businesses to protect Indigenous cultural, social, religious and spiritual values, the program aims to help find a harmonious balance between businesses, Indigenous communities and the environment in the overall pursuit of sustainability.

## International outbound tourism

In 2002 there were over 1.3 million more international visitors to Australia than Australians travelling abroad (tables 21.7 and 21.14). Consequently, the net contribution of the travel item to Australia's balance on current account was positive in 2002–03 (in table 30.26 of *Chapter 30, International accounts and trade*, the difference between travel services exports and imports).

Australians visit a wide variety of destinations abroad. The most popular main destination is New Zealand, accounting for 17% of Australians travelling abroad in 2002. The next most popular destinations were the United Kingdom and the United States of America, each accounting for 9% of Australians travelling abroad in 2002 (table 21.15).

Over two-thirds (68%) of Australians travelling abroad in 2002 went for a holiday. 'Holiday' (which includes visiting friends and relatives) was the main purpose of trip for Australians travelling to all destinations.

Australians travelling for 'business' reasons accounted for 20% of outbound travellers. Their main destinations were New Zealand and the United States of America.

### 21.14 AUSTRALIANS TRAVELLING ABROAD, Number of departures

	'000	Change %
1992	2 276.3	8.4
1993	2 267.1	-0.4
1994	2 354.3	3.8
1995	2 518.6	7.0
1996	2 732.0	8.5
1997	2 932.8	7.3
1998	3 161.1	7.8
1999	3 210.0	1.5
2000	3 498.2	9.0
2001	3 442.6	-1.6
2002	3 461.0	0.5

Source: *Overseas Arrivals and Departures, Australia (3401.0)*.

### 21.15 AUSTRALIANS TRAVELLING ABROAD, By country/region of main destination and main purpose of trip — 2002

Country/region of main destination	Main purpose of trip						Total '000	Change on 2001 %
	Business(a) '000	Holiday(b) '000	Employment '000	Education '000	Other and not stated '000	Total '000		
Fiji	11.1	107.2	0.9	0.3	8.8	128.3	36.2	
New Zealand	121.9	415.2	5.6	4.3	50.3	597.3	-0.4	
Other Oceania	24.1	90.2	13.9	3.0	9.1	140.4	-9.7	
Italy	8.4	59.1	0.5	2.0	5.0	75.0	0.5	
United Kingdom	41.9	237.6	12.5	4.0	22.3	318.3	5.8	
Other Europe	52.8	229.7	5.7	6.3	26.9	321.4	2.8	
Indonesia	28.3	191.4	6.3	1.7	14.0	241.7	-16.3	
Malaysia	28.3	70.6	3.2	0.6	6.9	109.5	-6.0	
Philippines	8.5	44.7	0.6	0.3	6.3	60.3	7.5	
Singapore	55.5	72.5	7.2	1.8	12.2	149.2	-6.9	
Thailand	23.5	134.9	1.5	0.7	8.3	168.9	1.7	
China (excl. SARs & Taiwan Prov.)	46.3	73.8	3.5	2.5	10.8	136.9	25.3	
Hong Kong (SAR of China)	38.9	83.6	7.0	1.2	9.8	140.5	-6.1	
Other Asia	71.7	207.4	13.8	7.0	24.1	323.9	5.9	
United States of America	95.0	167.7	9.2	4.6	22.6	299.1	1.9	
Other America	13.9	75.1	2.5	1.6	9.2	102.3	-2.8	
Middle East and North Africa	11.5	56.4	4.4	1.4	9.7	83.5	0.7	
Other Africa	14.0	40.3	2.8	0.7	4.4	62.2	23.2	
Not stated	0.2	1.5	0.3	—	0.2	2.3	-89.1	
<b>Total</b>	<b>695.7</b>	<b>2 359.0</b>	<b>101.4</b>	<b>44.0</b>	<b>261.0</b>	<b>3 461.0</b>	<b>0.5</b>	

(a) Includes those attending a convention or conference. (b) Includes those whose main purpose is visiting friends and relatives.

Source: ABS data available on request, *Overseas Arrivals and Departures Collection*.

In 2002, 12% of Australians travelling abroad stayed less than a week (predominantly business travellers), while almost a third (32%) stayed away for at least a month (table 21.16).

month in which most inbound visitors arrived (table 21.10). February 2002 recorded the lowest number of Australian resident departures (6%) for abroad (table 21.17).

The highest number of Australian resident departures in 2002 was in December (11%) (table 21.17). December 2002 was also the

### 21.16 AUSTRALIANS TRAVELLING ABROAD, By intended length of stay and main purpose of trip — 2002

Intended length of stay	Main purpose of trip					Total '000	Proportion of total %
	Business(a) '000	Holiday(b) '000	Employment '000	Education '000	Other and not stated '000		
Under 1 week	228.0	159.6	5.1	2.8	19.7	415.3	12.0
1 week and under 2 weeks	218.5	665.8	8.7	9.4	106.0	1 008.5	29.1
2 weeks and under 1 month	135.8	719.4	9.7	9.2	50.1	924.2	26.7
1 month and under 2 months	52.8	463.8	12.0	5.5	33.1	567.2	16.4
2 months and under 3 months	20.3	148.9	8.6	2.5	13.3	193.7	5.6
3 months and under 6 months	21.6	121.8	18.8	4.7	16.5	183.5	5.3
6 months and under 12 months	18.6	79.7	38.3	9.8	22.2	168.6	4.9
<b>Total</b>	<b>695.7</b>	<b>2 359.0</b>	<b>101.4</b>	<b>44.0</b>	<b>261.0</b>	<b>3 461.0</b>	<b>100.0</b>

(a) Includes those attending a convention or conference. (b) Includes those whose main purpose is visiting friends and relatives.

Source: ABS data available on request, Overseas Arrivals and Departures Collection.

### 21.17 AUSTRALIANS TRAVELLING ABROAD, By month of departure and main purpose of trip — 2002

	Main purpose of trip					Total '000	Proportion of total %
	Business(a) '000	Holiday(b) '000	Employment '000	Education '000	Other and not stated '000		
January	50.4	151.9	12.0	5.2	19.9	239.5	6.9
February	52.8	134.7	8.9	2.1	20.2	218.6	6.3
March	63.6	187.2	7.6	2.5	22.6	283.5	8.2
April	66.7	172.9	8.6	3.3	16.4	267.9	7.7
May	63.3	200.3	9.0	2.3	19.6	294.5	8.5
June	64.1	217.7	8.1	4.5	24.2	318.6	9.2
July	57.7	223.5	8.7	3.8	25.0	318.7	9.2
August	55.5	195.3	8.6	4.1	19.8	283.4	8.2
September	61.9	251.1	6.7	6.4	25.5	351.6	10.2
October	64.6	172.6	8.1	1.9	21.2	268.4	7.8
November	61.1	160.0	7.5	3.6	19.0	251.1	7.3
December	34.0	291.8	7.4	4.3	27.6	365.1	10.5
<b>Total</b>	<b>695.7</b>	<b>2 359.0</b>	<b>101.4</b>	<b>44.0</b>	<b>261.0</b>	<b>3 461.0</b>	<b>100.0</b>

(a) Includes those attending a convention or conference. (b) Includes those whose main purpose is visiting friends and relatives.

Source: ABS data available on request, Overseas Arrivals and Departures Collection.

## Tourist accommodation

At 31 December 2002 there were slightly less than 196,500 rooms available in hotels, motels, guest houses and serviced apartments having 15 or more rooms or units (table 21.18). This represents a small decrease (1%) in total available accommodation capacity when compared with that at 31 December 2001 and reverses a trend of small annual increases in guest rooms available for accommodation. The increase in serviced apartments guest rooms (221 guest rooms) that occurred in 2002, was more than offset by declines

in licensed hotels capacity (1,058 guest rooms) and that of motels and guest houses with facilities (865 guest rooms).

Gross takings from hotels, motels, guest houses and serviced apartments with 15 or more rooms or units increased 2% in 2002 (table 21.18).

Although gross takings from tourist accommodation in 2002 recovered somewhat from the level of 2001, if allowance is made for price increases, the annual growth in takings remained flat. Gross takings from serviced apartments increased 8% in 2002 compared to 2001. Takings from motels also rose (2%) while takings from licensed hotels fell slightly (-0.2%).

### 21.18 TOURIST ACCOMMODATION(a)

	Units	1998	1999	2000	2001	2002
<b>LICENSED HOTELS WITH FACILITIES(b)</b>						
Establishments(c)	no.	747	766	780	781	777
Guest rooms(c)	no.	70 802	73 416	76 783	78 574	77 516
Bed spaces(c)	no.	191 147	196 329	204 109	206 592	203 238
Room occupancy rates(d)	%	61.5	63.1	63.5	61.6	62.6
Bed occupancy rates(d)	%	37.5	38.5	38.8	38.8	39.7
Gross takings from accommodation(d)	\$m	2 030.6	2 103.6	2 459.1	2 446.9	2 442.9
<b>MOTELS AND GUEST HOUSES WITH FACILITIES(b)</b>						
Establishments(c)	no.	2 386	2 413	2 402	2 400	2 382
Guest rooms(c)	no.	84 701	86 019	84 722	84 430	83 565
Bed spaces(c)	no.	252 044	255 588	250 170	247 776	244 156
Room occupancy rates(d)	%	53.8	54.4	53.0	52.0	52.8
Bed occupancy rates(d)	%	31.8	32.2	31.4	31.2	31.9
Gross takings from accommodation(d)	\$m	1 283.3	1 342.7	1 424.5	1 403.4	1 433.2
<b>SERVICED APARTMENTS(b)</b>						
Establishments(c)	no.	552	600	646	657	675
Guest rooms(c)	no.	26 558	30 644	33 421	35 129	35 350
Bed spaces(c)	no.	93 563	107 748	113 267	117 192	116 385
Room occupancy rates(d)	%	60.5	60.4	59.3	60.7	63.9
Bed occupancy rates(d)	%	37.0	37.2	37.9	39.9	42.2
Gross takings from accommodation(d)	\$m	564.0	693.3	841.4	915.2	988.9
<b>TOTAL HOTELS, MOTELS AND SERVICED APARTMENTS(b)</b>						
Establishments(c)	no.	3 685	3 779	3 828	3 838	3 834
Guest rooms(c)	no.	182 061	190 079	194 926	198 133	196 431
Bed spaces(c)	no.	536 754	559 665	567 546	571 560	563 779
Room occupancy rates(d)	%	57.7	58.7	58.1	57.3	58.7
Bed occupancy rates(d)	%	34.7	35.3	35.3	35.7	36.8
Room nights occupied(d)	'000	37 324.4	39 822.2	41 079.6	41 176.3	42 148.5
Gross takings from accommodation(d)	\$m	3 877.8	4 139.6	4 725.0	4 765.5	4 865.0

(a) Comprising establishments with 15 or more rooms or units. (b) For definitions see the source below. (c) As at 31 December.  
(d) Year ended December.

Source: *Tourist Accommodation, Australia* (8635.0).

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Australian Tourist Commission, <<http://www.atc.net.au>>

Bureau of Tourism Research, <<http://www.btr.gov.au>>

Canberra Tourism and Events Corporation, <<http://www.canberratourism.com.au>>

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## TRANSPORT

Transport activity involves the movement of goods or people from an origin to a destination.

Transport is a fundamental element of developed 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 has considerable economic, social and environmental impacts. Effective transport systems contribute to economic prosperity, as well as to the social achievements of the community that arise through access to an enlarged range of employment and residential options, and to an increased range of holiday and entertainment options. Information about numerous aspects of transport activity is used by governments, local authorities and industry, to support planning and investment decisions.

In 2001–02, the transport and storage industry — those businesses whose predominant income was from transport and storage activities — contributed 4.9% to Australia's gross domestic product.

This chapter contains data on Australia's domestic and international transportation of people and freight, describing the volume of activity undertaken by road, rail, sea and air transport modes. Statistics describe the incidence of accidents, injuries and fatalities, as well as describing the capital infrastructure upon which transport activity is reliant. Data are drawn from the Australian Bureau of Statistics (ABS) and other sources.

## Transport activity

### General transport activity

#### Road transport activity

Motor vehicles travelled an estimated total distance of 190,152 million kilometres (km) in the year ended 31 October 2001, at an average of 16,000 km per vehicle (table 22.1). Business use accounted for an estimated 37% of aggregate distance travelled, while people's journeys to and from work accounted for a further 22%. Private use made up the remaining 41%.

The localities in which motor vehicles travelled are described in table 22.2. Only 4% of total distance travelled represented interstate trips, while 55% of trips were within the capital city of the state or territory in which the vehicle was registered.

### Domestic airline activity

The total hours flown and the number of aircraft departures by the major domestic and regional airlines are shown in table 22.3. Hours flown in 2002 were 12% less than in 2001, while aircraft departures were 15% lower in 2002. Major events occurring during 2001 included the collapse of the Ansett Australia airline, and terrorist attacks that occurred in the United States of America on 11 September 2001.

In addition to the scheduled services of domestic and regional airlines, the range of activities undertaken by the general aviation industry includes business flying, aerial agriculture, charter, training and private flying (table 22.4).

#### 22.1 BUSINESS AND PRIVATE VEHICLE USE — Year ended 31 October 2001(a)

Type of vehicle	Business			To and from work	Private	Total
	Laden	Unladen	Total(b)			
<b>TOTAL KILOMETRES TRAVELLED (million)</b>						
Passenger vehicles	—	—	36 357	37 261	70 307	143 925
Motor cycles	—	—	250	452	745	1 448
Light commercial vehicles	13 889	5 413	19 301	4 962	6 466	30 728
Rigid trucks	4 690	1 773	6 463	101	63	6 627
Articulated trucks	3 933	1 384	5 317	*3	*2	5 321
Non-freight carrying trucks	—	—	265	*1	**—	267
Buses	—	—	1 759	27	49	1 835
<b>Total</b>	<b>22 512</b>	<b>8 569</b>	<b>69 713</b>	<b>42 807</b>	<b>77 632</b>	<b>190 152</b>
<b>AVERAGE KILOMETRES TRAVELLED(c) ('000)</b>						
Passenger vehicles	—	—	11.4	7.7	8.4	15.1
Motor cycles	—	—	4.8	4.3	3.4	5.2
Light commercial vehicles	15.3	8.6	19.5	7.7	7.5	18.8
Rigid trucks	16.3	8.2	22.3	4.5	3.2	21.9
Articulated trucks	69.6	29.9	93.6	2.3	*1.7	92.1
Non-freight carrying trucks	—	—	15.3	*2.3	**1.5	15.4
Buses	—	—	35.9	7.5	8.0	34.3
<b>Total</b>	<b>18.0</b>	<b>9.6</b>	<b>15.0</b>	<b>7.6</b>	<b>8.2</b>	<b>16.0</b>

(a) Because of changes to methodology, caution should be used when comparing these data with data from earlier surveys presented in previous editions of Year Book Australia. (b) Includes business travel of non-freight carrying vehicles. (c) Average distance travelled for registered vehicles which were used.

Source: Survey of Motor Vehicle Use, Australia, 12 months ended 31 October 2001 (9208.0).

## 22.2 AREA OF OPERATION — Year ended 31 October 2001(a)

Type of vehicle	Within state/territory of registration			Total	Interstate	Australia
	Capital city	Provincial urban	Other areas of state/territory			
<b>TOTAL KILOMETRES TRAVELLED (million)</b>						
Passenger vehicles	84 502	19 666	35 094	139 262	4 663	143 925
Motor cycles	853	217	324	1 393	*55	1 448
Light commercial vehicles	13 773	4 594	11 272	29 639	1 090	30 728
Rigid trucks	3 548	922	1 891	6 362	265	6 627
Articulated trucks	1 073	308	2 538	3 919	1 402	5 321
Non-freight carrying trucks	156	34	71	261	*6	267
Buses	842	356	561	1 759	76	1 835
<b>Total</b>	<b>104 747</b>	<b>26 097</b>	<b>51 750</b>	<b>182 595</b>	<b>7 557</b>	<b>190 152</b>
<b>AVERAGE KILOMETRES TRAVELLED(b) ('000)</b>						
Passenger vehicles	12.1	7.5	9.9	14.6	5.5	15.1
Motor cycles	5.5	3.1	2.8	5.0	3.1	5.2
Light commercial vehicles	16.7	10.1	14.4	18.3	9.2	18.8
Rigid trucks	22.4	14.3	13.9	21.1	15.5	21.9
Articulated trucks	32.3	17.0	62.4	69.9	82.6	92.1
Non-freight carrying trucks	19.5	10.5	8.5	15.4	*10.7	15.4
Buses	29.0	23.2	24.5	33.2	17.3	34.3
<b>Total</b>	<b>12.8</b>	<b>8.1</b>	<b>11.1</b>	<b>15.4</b>	<b>7.3</b>	<b>16.0</b>

(a) Because of changes to methodology caution must be taken when comparing these data with data from earlier surveys presented in previous editions of Year Book Australia. (b) Average distance travelled for registered vehicles which were used.

Source: Survey of Motor Vehicle Use, Australia, 12 months ended 31 October 2001 (9208.0).

## 22.3 DOMESTIC AIRLINE ACTIVITY, Major and regional airlines

	1998	1999	2000	2001	2002
	'000	'000	'000	'000	'000
Hours flown	749	751	788	759	667
Aircraft departures	585	588	606	564	479

Source: Department of Transport and Regional Services.

## 22.4 OTHER GENERAL AVIATION ACTIVITY, Hours flown

	1997	1998	1999	2000	2001	2002(a)
	'000	'000	'000	'000	'000	'000
Charter	487	498	508	480	469	441
Agricultural	137	147	135	124	114	78
Flying training	455	484	454	419	411	419
Other aerial work	315	319	314	304	300	335
Private/business	446	430	432	388	409	417
<b>Total</b>	<b>1 839</b>	<b>1 878</b>	<b>1 842</b>	<b>1 715</b>	<b>1 703</b>	<b>1 690</b>

(a) 2002 figures are preliminary.

Source: Department of Transport and Regional Services.

## 22.5 SCHEDULED INTERNATIONAL AIRLINE TRAFFIC TO AND FROM AUSTRALIA(a)(b)(c)

	1999	2000	2001	2002
TRAFFIC TO AUSTRALIA				
Qantas Airways Limited	12 675	13 751	14 702	(d)13 953
Ansett International(e)	1 640	1 450	1 046	—
Other airlines	27 219	30 633	30 536	29 863
<b>All airlines</b>	<b>41 534</b>	<b>45 834</b>	<b>46 284</b>	<b>43 816</b>
TRAFFIC FROM AUSTRALIA				
Qantas Airways Limited	12 733	13 817	14 714	(d)13 989
Ansett International(e)	1 646	1 454	1 048	—
Other airlines	26 713	30 083	30 101	29 609
<b>All airlines</b>	<b>41 092</b>	<b>45 354</b>	<b>45 863</b>	<b>43 598</b>

(a) Includes Norfolk Island. (b) Includes Qantas flights using aircraft leased from other airlines and vice versa. (c) The difference between to and from numbers arises because some outward flights are operated as non-scheduled, and so are not counted in the table. (d) Includes Australian Airlines, a wholly owned subsidiary of Qantas Airways Ltd. (e) Ansett International ceased operations on 14 September 2001.

Source: Department of Transport and Regional Services.

### International airline activity

The number of flights into and out of Australia fell in 2002 to below the levels in the previous two years (table 22.5). The share of total scheduled international airline traffic that was provided by Australian owned airlines, (i.e. Qantas and Ansett), declined from 34% in 2001 to 32% in 2002.

### Domestic freight activity

Freight movement within Australia is a significant transport task. Goods are moved across vast distances because of the size of the country and the dispersed locations of agricultural, mining, production and population centres. Key freight transport task measures are tonnes carried and tonne-kilometres, which represents the summation of mass multiplied by the distance travelled by individual freight cargoes. The following sections provide information on the domestic freight task performed by each of the transport modes.

### Road freight activity

In the 12 months ended 31 March 2001, the 62,000 articulated vehicles in Australia lifted an estimated 614 million tonnes of freight (table 22.6), and conducted over 88 billion tonne-kilometres of freight travel. Freight originating in New South Wales accounted for 30% of both the total tonne-kilometres travelled (26,440 million) and of the total tonnes carried by road (184 million).

Australia's 332 thousand rigid trucks provided 25 billion tonne-kilometres of freight travel, in the year to 31 March 2001.

### 22.6 ROAD FREIGHT, By articulated vehicles — Year ended 31 March 2001

State/territory of origin	million tonne-kilometres	million tonnes
New South Wales	26 440	184
Victoria	18 746	121
Queensland	19 174	127
South Australia	9 286	46
Western Australia	11 281	105
Tasmania	1 504	21
Northern Territory	1 728	8
Australian Capital Territory	216	1
<b>Australia</b>	<b>88 374</b>	<b>614</b>

Source: Freight Movements, Australia, Summary, Year ended 31 March 2001 (9220.0).

The major commodities moved by road, in the 12 months to 31 March 2001, are shown in table 22.7. Food accounted for 22% of the total tonne-kilometres travelled and 14% of the total tonnes carried by road. Stone, sand and gravel represented 14% of the tonnage carried by road transport, yet because of the typically shorter trip distances, this commodity group only accounted for 4% of the total tonne-kilometres travelled.

## 22.7 MAJOR COMMODITIES MOVED BY ROAD(a) — Year ended 31 March 2001

	Tonne-kilometres		Tonnes	
	million	% of total	million	% of total
Food (for human and animal consumption)	19 326	21.9	89	14.4
General freight(b)	15 408	17.4	46	7.5
Other manufactured goods	7 276	8.2	38	6.2
Petroleum and petroleum products	4 807	5.4	30	4.8
Machinery and transport equipment	4 207	4.8	22	3.5
Cork and wood	4 093	4.6	35	5.8
Cereal grains	4 031	4.6	42	6.9
Crude materials	3 895	4.4	35	5.7
Stone, sand and gravel	3 373	3.8	86	14.0

(a) Articulated vehicles only. (b) Consignments not classified by commodity.

Source: *Freight Movements, Australia, Summary, Year ended 31 March 2001 (9220.0)*.

### Rail freight activity

An estimated 509 million tonnes of freight, representing a 134 billion tonne-kilometres transport task, were moved on the rail network in the 12 months ended 31 March 2001 (table 22.8). Freight originating in either Western Australia or Queensland together accounted for over three-quarters (77%) of the total tonne-kilometres travelled by rail freight. In these states, substantial tonnages of bulk commodities are moved over long trip distances.

Of the total tonne-kilometres travelled by rail, nearly three-quarters (74%) comprised transport of metalliferous ores, metal scrap, and coal (table 22.9). General freight, while accounting for only 3% of the total tonnes carried on the rail network, represented 12% of the tonne-kilometres

travelled by this mode, indicating above average freight trip distances are associated with this type of freight.

## 22.8 RAIL FREIGHT(a) — Year ended 31 March 2001

State/territory of origin	million tonne-kilometres	million tonnes
New South Wales	19 621	112
Victoria	6 188	10
Queensland	42 458	172
South Australia	5 176	19
Western Australia	60 429	196
Tasmania	n.a.	n.a.
Northern Territory	234	—
Australian Capital Territory	3	—
<b>Australia</b>	<b>134 109</b>	<b>509</b>

(a) Excludes rail freight movements in Tasmania.

Source: *Freight Movements, Australia, Summary, Year ended 31 March 2001 (9220.0)*.

## 22.9 MAJOR COMMODITIES MOVED BY RAIL(a) — Year ended 31 March 2001

	Tonne-kilometres		Tonnes	
	million	% of total	million	% of total
Metalliferous ores and metal scrap	55 615	41.5	197	38.6
Coal	44 254	33.0	221	43.6
General freight(b)	16 018	11.9	15	2.9
Cereal grains	5 787	4.3	19	3.7
Iron and steel	3 993	3.0	6	1.2
Crude materials	2 334	1.7	33	6.4

(a) Excludes rail freight movements in Tasmania. (b) Consignments not classified by commodity.

Source: *Freight Movements, Australia, Summary, Year ended 31 March 2001 (9220.0)*.

### Sea freight activity (domestic)

In the 12 months ended 31 March 2001, there were 47 million tonnes of sea freight carried between Australian ports (table 22.10). This domestic sea freight task amounted to 97 billion tonne-kilometres, representing 30% of the aggregate of freight tonne-kilometres travelled within Australia by all transport modes. Due to the long average distances travelled by domestic shipping, sea freight's percentage of total tonne-kilometres travelled exceeded its percentage of the total freight tonnages.

Metalliferous ores and metal scrap accounted for the highest share of tonnes carried (42%), and of freight tonne-kilometres travelled (63%), by sea in the 12 months ended 31 March 2001 (table 22.11).

### Air freight activity (domestic)

Air freight accounted for less than 1% of the total domestic freight task in the year ended 31 March 2001. Freight originating from New South Wales and Victoria, together, accounted for over half (54%) of total air freight tonne-kilometres (table 22.12).

### International freight activity

#### Sea freight activity (international)

The nature of Australia's trade means that the weight of exports (including coal, iron ore, and agricultural products) far exceeds the weight of the imports. Most of the tonnage of exports and imports is shipped by bulk carriers or tankers.

The weight of exports was 541 million tonnes in 2002, a 7% increase on the previous year, and 25% above the level in 1998–99 (table 22.13). Tonnages of food and live animal exports rose every year

between 1998–99 and 2001–02, before falling by 27% in 2002–03 to 23 million tonnes. The export of mineral fuels, lubricants and related materials has risen consistently in the five years to 2002–03 (from 187 million tonnes to 230 million tonnes).

The commodity group 'Crude materials, inedible, except fuels', which includes iron ore, alumina, zinc ores and wool, accounted for the greatest proportion of total exports by weight in 2002–03 (47%). 'Mineral fuels, lubricants and related materials', which includes coal and petroleum, accounted for 43% of total exports by weight, in 2002–03. The 'beverages and tobacco' export tonnage has increased every year since 1998–99.

The weight of total imports increased by 11% between 1998–99 and 2002–03, from 56 million tonnes to 62 million tonnes. Over this period 'beverages and tobacco' imports by weight rose 76%, and the 'food and live animal' import tonnage rose by 99%.

#### 22.10 DOMESTIC SEA FREIGHT — Year ended 31 March 2001

State/territory of origin	million tonne-kilometres	million tonnes
New South Wales	6 808	5
Victoria	8 342	7
Queensland	31 736	16
South Australia	10 184	7
Western Australia	33 691	7
Tasmania	4 283	5
Northern Territory	2 307	1
Australian Capital Territory	—	—
<b>Australia</b>	<b>97 349</b>	<b>47</b>

Source: *Freight Movements, Australia, Summary, Year ended 31 March 2001 (9220.0)*.

#### 22.11 MAJOR COMMODITIES MOVED BY SEA (DOMESTIC) — Year ended 31 March 2001

	Tonne-kilometres		Tonnes	
	million	% of total	million	% of total
Metalliferous ores and metal scrap	61 118	62.8	20	42.5
Petroleum and petroleum products	16 159	16.6	11	22.9
Crude materials	4 272	4.4	4	8.0
Cement	3 131	3.2	3	5.5
Coal	3 013	3.1	3	5.3
Iron and steel	1 929	2.0	2	3.5
Food (for human and animal consumption)	1 923	2.0	1	2.8

Source: *Freight Movements, Australia, Summary, Year ended 31 March 2001 (9220.0)*.

**22.12 DOMESTIC AIR FREIGHT — Year ended  
31 March 2001**

State/territory of origin	million tonne- kilometres	million tonnes
New South Wales	74	0.1
Victoria	74	0.1
Queensland	48	—
South Australia	14	—
Western Australia	46	—
Tasmania	9	—
Northern Territory	10	—
Australian Capital Territory	2	—
<b>Australia</b>	<b>276</b>	<b>0.2</b>

Source: *Freight Movements, Australia, Summary, Year ended 31 March 2001 (9220.0)*.

**22.13 INTERNATIONAL SEA FREIGHT, By commodity group**

	1998–99	1999–2000	2000–01	2001–02	2002–03
	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes	'000 tonnes
<b>EXPORTS</b>					
Food and live animals	28 920	29 910	30 369	30 925	22 686
Beverages and tobacco	432	576	805	890	1 591
Crude materials, inedible, except fuels	192 479	207 784	222 897	221 755	251 139
Mineral fuels, lubricants and related materials	186 903	198 148	218 191	223 429	230 524
Animal and vegetable oils, fats and waxes	474	455	484	690	512
Chemicals and related products n.e.c.	1 336	1 423	1 949	1 718	2 116
Manufactured goods classified chiefly by material	7 891	7 702	6 836	12 073	15 228
Machinery and transport equipment	573	629	941	801	847
Miscellaneous manufactured articles	152	202	301	297	593
Commodities and transactions not classified elsewhere in the SITC(a)	13 392	15 861	13 431	13 739	15 334
<b>Total</b>	<b>432 552</b>	<b>462 690</b>	<b>496 204</b>	<b>506 317</b>	<b>540 570</b>
<b>IMPORTS</b>					
Food and live animals	1 362	1 443	1 565	1 798	2 709
Beverages and tobacco	198	243	311	289	348
Crude materials, inedible, except fuels	8 163	8 045	7 863	8 078	8 353
Mineral fuels, lubricants and related materials	28 917	26 952	26 369	27 294	28 702
Animal and vegetable oils, fats and waxes	208	225	233	244	282
Chemicals and related products n.e.c.	8 289	9 196	8 929	9 209	9 218
Manufactured goods classified chiefly by material	5 406	6 327	5 640	6 480	7 521
Machinery and transport equipment	2 352	2 654	2 372	2 512	2 893
Miscellaneous manufactured articles	1 090	1 204	1 221	1 391	1 611
Commodities and transactions not classified elsewhere in the SITC(a)	246	73	77	746	822
<b>Total</b>	<b>56 232</b>	<b>56 361</b>	<b>54 579</b>	<b>58 041</b>	<b>62 459</b>

(a) Standard International Trade Classification.

Source: *ABS data available on request, International Trade Special Data Service.*

## Air freight activity (international)

The total air cargo tonnage coming into Australia, in 2001, was 12% below the level in 2000 (table 22.14). Tonnage of outgoing freight exceeded that of incoming freight (by 21% in 2001).

The tonnage of mail moved out of Australia in 2001 was 6% less than the tonnage of incoming mail. Australian airlines carried 25% of incoming cargo, and 29% of outgoing cargo in 2001.

The combined tonnage of incoming and outgoing air freight (excluding mail) fell by 6% between 2000 and 2001. Table 22.15 shows the main origin/destination pairs for freight moving into and out of Australia. The Auckland/Sydney route was the busiest, accounting for 8% of the total freight carried. The Singapore/Perth and Singapore/Sydney routes recorded the largest increases in 2001 (8% and 4% respectively).

### 22.14 SCHEDULED INTERNATIONAL AIRLINE TRAFFIC TO AND FROM AUSTRALIA(a)

	2000			2001		
	Freight tonnes	Mail tonnes	Total cargo tonnes	Freight tonnes	Mail tonnes	Total cargo tonnes
<b>TRAFFIC TO AUSTRALIA</b>						
Qantas Airways Limited	76 526	5 476	82 002	63 724	5 762	69 486
Ansett International(b)	7 597	306	7 903	5 361	143	5 504
Other airlines	247 972	9 760	257 732	220 638	8 917	229 555
<b>All airlines</b>	<b>332 095</b>	<b>15 542</b>	<b>347 637</b>	<b>289 723</b>	<b>14 822</b>	<b>304 545</b>
<b>TRAFFIC FROM AUSTRALIA</b>						
Qantas Airways Limited	83 426	11 560	94 986	88 034	12 430	100 464
Ansett International(b)	8 499	12	8 511	6 256	9	6 265
Other airlines	255 927	1 850	257 777	256 088	1 508	257 596
<b>All airlines</b>	<b>347 852</b>	<b>13 422</b>	<b>361 274</b>	<b>350 379</b>	<b>13 946</b>	<b>364 325</b>

(a) Includes Norfolk Island. (b) Ansett International ceased operations on 14 September 2001.

Source: Department of Transport and Regional Services.

### 22.15 INTERNATIONAL FREIGHT CARRIED (EXCLUDING MAIL), By city pairs(a)

	1998	1999	2000	2001
	tonnes	tonnes	tonnes	tonnes
Auckland/Sydney	54 849	54 047	50 090	49 142
Singapore/Melbourne	34 935	51 096	48 574	48 457
Singapore/Sydney	38 758	43 689	46 313	48 164
Hong Kong/Sydney	36 789	34 252	33 976	30 658
Los Angeles/Sydney	26 500	36 061	32 721	27 672
Auckland/Melbourne	32 199	34 722	29 559	30 355
Singapore/Perth	26 160	27 436	27 822	30 073
Hong Kong/Melbourne	23 821	26 031	25 879	23 632
Seoul/Sydney	11 399	12 316	18 792	16 973
Singapore/Brisbane	11 823	14 988	18 337	18 293
Other city pairs	334 674	346 878	347 887	316 684
<b>All city pairs</b>	<b>631 908</b>	<b>681 515</b>	<b>679 948</b>	<b>640 102</b>

(a) The table does not necessarily show the final origin/destination of freight. For example, all freight going to or coming from Europe would require a stopover, generally in Asia.

Source: Department of Transport and Regional Services.

## Domestic road, rail and air 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 ending 31 October 2001, Australia's 9.9 million passenger vehicles travelled an estimated total of 143.9 billion kilometres (table 22.16), averaging 14,600 kilometres each per year. The fleet of 55,000 buses travelled a total of 1.8 billion kilometres, while the 349,000 motor cycles travelled a total of 1.4 billion kilometres. Of total passenger vehicle travel, 59% took place within capital cities, while only 46% of bus kilometres were travelled within capital cities.

### Rail passenger activity

The number of passengers carried by rail operators is shown in table 22.17. Rail passenger numbers have trended upwards, with the number of urban passengers increasing by 28% over the period 1992–93 to 2001–02. Heavy rail has consistently accounted for more than

three-quarters of urban rail passenger operations. The 2.8% average annual growth in passenger numbers was above Australia's 1.2% rate of population growth over the period.

### Air passenger activity

As at 30 June 2002 there were two major domestic airlines operating in Australia, Qantas and Virgin Blue, providing scheduled services to the 34 major airports. Regional airlines provided connecting services to an additional 133 regional airports.

Following growth in the previous two years, passenger numbers fell in 2002 (table 22.18), while the percentage of vacant seat kilometres also fell in 2002. In 2002, the major domestic airlines accounted for almost 86% of total Australian domestic passenger departures. The regional airlines share of passenger departures has decreased from 17% in 1998 to 15% in 2002.

The number of passengers boarding domestic airlines at the principal airports is shown in table 22.19. In 2002, all principal airports except Perth, Darwin, Cairns, Coolangatta, and Launceston recorded decreases in passenger movements compared with 2001. Launceston recorded the strongest growth (12%), Darwin (5%), Coolangatta (4%), and Cairns (3%).

## 22.16 MOTOR VEHICLE USE, By state/territory of registration — 2001

	Passenger vehicles	Motor cycles	Buses
TOTAL KILOMETRES TRAVELLED (million)			
New South Wales	44 480	389	492
Victoria	39 643	352	364
Queensland	28 051	387	468
South Australia	11 977	118	121
Western Australia	13 539	132	259
Tasmania	2 708	25	43
Northern Territory	953	16	55
Australian Capital Territory	2 575	27	34
<b>Australia</b>	<b>143 925</b>	<b>1 448</b>	<b>1 835</b>
NUMBER OF VEHICLES(a) (no.)			
New South Wales	3 041 251	91 753	14 407
Victoria	2 637 201	93 780	12 686
Queensland	1 778 871	73 758	12 628
South Australia	865 419	27 234	3 519
Western Australia	1 051 496	44 599	7 279
Tasmania	244 631	8 422	1 735
Northern Territory	67 215	3 537	1 965
Australian Capital Territory	175 723	6 383	859
<b>Australia</b>	<b>9 861 807</b>	<b>349 465</b>	<b>55 078</b>

(a) The average number of vehicles registered for the 12 months. Includes registered vehicles that did not travel during the reference period.

Source: Survey of Motor Vehicle Use, Australia, 12 months ended 31 October 2001 (9208.0).

## 22.17 RAIL PASSENGER OPERATIONS(a)

	Urban		Total million persons	Non-urban million persons	Total million persons
	Heavy rail million persons	Tram and light rail million persons			
1992-93	396	103	498	7	<b>505</b>
1993-94	402	106	507	8	<b>516</b>
1994-95	420	111	530	9	<b>539</b>
1995-96	441	116	556	9	<b>566</b>
1996-97	456	118	574	10	<b>584</b>
1997-98	457	121	578	10	<b>588</b>
1998-99	463	123	585	10	<b>595</b>
1999-2000	482	137	619	11	<b>629</b>
2000-01	498	137	634	12	<b>646</b>
2001-02(b)	493	143	636	12	<b>648</b>

(a) Excludes tourist services. (b) 2001-02 data is from the 2003 ARA Yearbook and Industry Directory.

Source: Australasian Railway Association Inc.

## 22.18 DOMESTIC AIRLINE ACTIVITY

	Units	1998	1999	2000(a)	2001(a)	2002(a)
Passenger departures(b)						
Domestic airlines	'000	23 575	24 392	25 660	26 152	25 808
Regional airlines	'000	4 851	5 039	5 929	5 668	4 390
Total	'000	28 426	29 431	31 590	31 820	30 198
Other activity (domestic airlines only)						
Passenger kilometres performed(c)	million	26 774	27 853	29 601	30 410	30 565
Seat kilometres available(d)	million	35 467	36 119	38 232	39 739	38 640
Percentage of vacant seat kilometres	%	24.5	22.9	22.6	23.5	20.9

(a) Includes estimates for regional airlines data. (b) The unit of measurement is traffic on board (which includes transit traffic).

Includes revenue passengers only. (c) The sum for all flights of the number of passengers on each flight multiplied by the distance travelled. (d) The sum for all flights of the number of seats on a flight multiplied by distance travelled.

Source: Department of Transport and Regional Services.

## 22.19 DOMESTIC PASSENGER MOVEMENTS(a)

	1998	1999	2000	2001	2002
Principal airport	'000	'000	'000	'000	'000
Sydney	(b)14 276	(b)14 879	16 265	(b)16 590	(b)15 192
Melbourne	11 429	(b)11 902	12 939	(b)13 308	(b)12 895
Brisbane	(b)7 438	(b)7 833	8 811	(b)9 946	(b)9 164
Adelaide	(b)3 789	(b)3 869	3 982	(b)4 212	(b)3 999
Perth	3 236	3 258	3 463	3 342	3 371
Canberra	1 805	1 901	2 041	(b)1 970	(b)1 886
Hobart	(b)856	(b)878	928	(b)996	(b)948
Darwin	854	(b)879	907	(b)848	(b)894
Cairns	1 916	(b)2 023	2 133	(b)2 025	(b)2 088
Coolangatta	1 889	(b)1 938	1 918	(b)1 832	(b)1 912
Townsville	(b)704	(b)740	772	(b)955	(b)729
Launceston	536	(b)545	532	(b)509	(b)570

(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. (b) Includes estimates for unreported data.

Source: Department of Transport and Regional Services.

## International passenger activity

Passengers arriving, or departing, Australia, primarily travel by air.

In 2002 there were 50 international scheduled airlines operating air services to and from Australia.

Of total international passengers (16.4 million) carried to and from Australia in 2001–02 (table 22.20), 3.5 million travelled between Australia and New Zealand and 2.9 million travelled between Australia and Singapore.

Table 22.21 shows the number of international passengers who travelled through each of Australia's international airports. Sydney's share of total international passenger traffic was 48% in 2001–02 (down 7% from 2000–01), followed by Melbourne with 20% (up 1%), and Brisbane with 15% (down 3%). In 2002, Coolangatta's international passenger numbers were 98% higher than in the previous year. International passenger numbers at Darwin airport were 26% lower in 2002. International operations ceased at Broome airport in 2001.

### 22.20 SCHEDULED INTERNATIONAL PASSENGER TRAFFIC TO AND FROM AUSTRALIA — 2001–02

Country to/from	Inbound '000	Outbound '000	Total '000
Argentina	28.3	29.5	57.9
Austria	58.0	66.1	124.1
Bahrain	21.8	19.2	41.1
Brunei	51.2	54.2	105.5
Canada	39.4	41.7	81.1
China (excl. SARs & Taiwan Prov.)	131.5	118.2	249.7
Egypt	14.2	14.6	28.8
Fiji	157.9	158.3	316.2
France	28.4	32.2	60.7
Germany	61.0	68.6	129.7
Greece	25.0	24.6	49.6
Guam	10.7	10.7	21.4
Hong Kong (SAR of China)	569.4	549.3	1 118.7
India	13.8	11.3	25.0
Indonesia	366.9	369.7	736.6
Italy	43.4	40.6	84.0
Japan	771.1	772.3	1 543.4
Korea, Republic of (South)	183.2	178.3	361.5
Malaysia	457.6	451.2	908.8
Mauritius	13.8	13.3	27.1
Nauru	5.9	5.6	11.5
New Caledonia	58.3	58.9	117.3
New Zealand	1 733.7	1 765.0	3 498.7
Papua New Guinea	72.1	71.5	143.6
Philippines	66.1	64.9	131.0
Singapore	1 487.1	1 433.1	2 920.1
South Africa	111.7	98.9	210.6
Sri Lanka(a)	2.0	1.7	3.8
Tahiti	0.3	3.5	3.8
Taiwan	87.6	84.8	172.4
Thailand	422.0	406.5	828.6
Tonga	2.0	1.7	3.6
United Kingdom	309.9	317.1	627.0
United Arab Emirates	100.0	104.3	204.3
United States of America	671.4	677.6	1 349.0
Vanuatu	30.4	30.1	60.5
Vietnam	42.7	41.6	84.4
Western Samoa	4.2	3.9	8.1
<b>Total</b>	<b>8 254.1</b>	<b>8 194.9</b>	<b>16 449.0</b>

(a) Service by SriLankan Airlines ceased July 2001.

Source: Department of Transport and Regional Services.

## Accidents, injuries and fatalities

Accident costs include loss of life or injury to persons, and the destruction of, and damage to, equipment and infrastructure. Transport-related deaths fell by 6% between 1997 and 2001. The majority of deaths (92% in 2001) were associated with road transport. Table 22.22 shows the number of transport-related deaths for each of the transport modes in the six years to 2002.

## Road traffic accidents

### Accidents involving fatalities

The number of accidents involving fatalities in 2002 was 3% below the number in the previous year (table 22.23). This was despite increased numbers of such accidents in New South Wales, South Australia and Western Australia.

As well as fewer accidents involving fatalities, the number of deaths was also lower in 2002, but only declined by 1%. The number of persons killed from road traffic accidents in 2002 (1,723) was the lowest recorded since 1950.

### 22.21 INTERNATIONAL PASSENGER TRAFFIC THROUGH AUSTRALIAN INTERNATIONAL AIRPORTS

Airport	1999–2000	2000–01	2001–02
	'000 passengers	'000 passengers	'000 passengers
Sydney	7 703	8 538	7 959
Melbourne	2 833	3 252	3 297
Brisbane	2 430	2 539	2 457
Perth	1 517	1 607	1 596
Cairns	656	701	691
Adelaide	254	264	230
Darwin	153	172	128
Coolangatta	21	34	67
Norfolk Island	15	15	17
Newcastle(a)	—	—	9
Townsville(b)	—	—	0.4
Broome(c)	0.7	4	0.3
Port Hedland(d)	1	—	—
<b>Total</b>	<b>15 584</b>	<b>17 127</b>	<b>16 449</b>

(a) International operations commenced December 2001. (b) International operations recommenced October 2001 and ceased again in March 2002. (c) International operations recommenced April 2000 and ceased July 2001. (d) International operations ceased January 2000.

Source: Department of Transport and Regional Services.

### 22.22 DEATHS(a) FROM TRANSPORT ACCIDENTS

Mode(b)	1997	1998	1999	2000	2001	2002
Motor vehicles(c)	1 296	1 287	1 319	1 427	1 382	1 346
Pedestrians	388	369	373	359	352	308
Pedal cyclists	56	44	44	27	45	39
Rail	3	8	10	4	5	5
Water	50	39	57	51	49	49
Air	48	63	50	43	61	32
Other(d)	197	176	158	104	110	129
<b>Total</b>	<b>2 038</b>	<b>1 986</b>	<b>2 011</b>	<b>2 015</b>	<b>2 004</b>	<b>1 908</b>

(a) Based on the International Classification of Deaths, Edition 10 (ICD-10). Data in this table relate to year of registration of death and are based on death occurring up to one year following a transport accident. Data will therefore differ from the traffic fatalities shown in tables 22.23, 22.24 and 22.26 as data in those tables are based on year of occurrence of transport-related deaths which occur within 30 days of an incident. (b) Mode of transport of deceased persons. (c) Involving motor vehicles driven on public roads. (d) Includes riders of animals, agricultural equipment, all-terrain vehicles, industrial and construction vehicles, and unspecified transport accidents.

Source: State and territory Registrars of Births, Deaths and Marriages.

## 22.23 ROAD TRAFFIC ACCIDENTS INVOLVING FATALITIES

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
ACCIDENTS INVOLVING FATALITIES									
1994	552	345	364	143	195	52	36	15	<b>1 702</b>
1995	563	371	408	163	194	53	56	14	<b>1 822</b>
1996	538	382	338	162	220	53	58	17	<b>1 768</b>
1997	525	346	322	123	184	29	56	17	<b>1 602</b>
1998	491	348	257	152	199	47	59	20	<b>1 573</b>
1999	506	345	273	132	188	47	44	17	<b>1 552</b>
2000	543	373	275	151	184	38	48	16	<b>1 628</b>
2001	486	404	296	137	151	52	43	15	<b>1 584</b>
2002	510	361	283	138	159	34	40	8	<b>1 533</b>
PERSONS KILLED									
1994	646	377	418	159	211	59	41	17	<b>1 928</b>
1995	620	418	456	181	209	57	61	15	<b>2 017</b>
1996	581	417	385	181	247	64	72	23	<b>1 970</b>
1997	576	377	361	148	197	32	60	17	<b>1 768</b>
1998	556	390	279	168	223	48	69	22	<b>1 755</b>
1999	577	383	314	151	217	53	49	19	<b>1 763</b>
2000	603	407	317	166	212	43	51	18	<b>1 817</b>
2001	524	444	324	153	165	61	50	16	<b>1 737</b>
2002	570	397	322	154	179	36	55	10	<b>1 723</b>

Source: Australian Transport Safety Bureau, Monthly Fatalities Database.

### Road traffic fatalities

The Australian average fatality rate from road traffic accidents per 100,000 persons fell marginally from 8.9 in 2001 to 8.8 in 2002, continuing the decline since 1970, when the rate was 30.4 accidents per 100,000 persons. Road traffic deaths per 100,000 persons in the Northern

Territory in 2002 were significantly higher than the national rate, at 27.8 deaths per 100,000 persons (table 22.24). The Australian Capital Territory had the lowest rate of fatalities (3.1 per 100,000 persons) in 2002. Tasmania recorded the greatest drop in fatalities per 100,000 persons, from 12.9 in 2001 to 7.6 in 2002 (a fall of 41%).

## 22.24 ROAD TRAFFIC FATALITIES

	2001			2002		
	no.	per 100,000 population(a)	per 10,000 motor vehicles registered(b)	no.	per 100,000 population(a)	per 10,000 motor vehicles registered(b)
New South Wales	524	7.9	1.4	570	8.6	1.5
Victoria	444	9.2	1.3	397	8.1	1.2
Queensland	324	8.9	1.4	322	8.7	1.3
South Australia	153	10.1	1.5	154	10.1	1.4
Western Australia	165	8.6	1.2	179	9.3	1.3
Tasmania	61	12.9	1.8	36	7.6	1.1
Northern Territory	50	25.0	4.9	55	27.8	5.3
Australian Capital Territory	16	5.0	0.8	10	3.1	0.5
<b>Australia</b>	<b>1 737</b>	<b>8.9</b>	<b>1.4</b>	<b>1 723</b>	<b>8.8</b>	<b>1.3</b>

(a) Estimated resident population at 30 June. (b) Number of registered motor vehicles and motor cycles (excl. tractors, caravans, plant and equipment) at 31 March.

Source: Australian Demographic Statistics, December Quarter 2002 (3101.0); Motor Vehicle Census, Australia, 31 March 2002 (9309.0); Australian Transport Safety Bureau, Monthly Fatalities Database.

## International comparison of road traffic fatalities

Australian fatality rates are compared with those for other selected OECD nations in table 22.25. Australia's rate of 9.4 road traffic-related fatalities per 100,000 persons in 2000 is similar to the rates in Canada (9.5), Germany (9.1), Switzerland (8.3), and Japan (8.2). It is considerably below the rates in the Republic of (South) Korea (21.8), Poland (16.3), the United States of America (15.2), Spain (14.5), France (13.6) and New Zealand (12.1). Australia's rate is, however, markedly higher than Sweden (6.7) and the United Kingdom (6.0).

In relation to fatalities per number of registered vehicles in 2000, Australia (at 1.5) is on par with many other OECD countries. For the countries listed, the Republic of (South) Korea has the highest fatality rate per 10,000 registered vehicles (at 7.8 persons killed).

In relation to the number of fatalities per 100 million vehicle km travelled, Australia's fatality rate (1.0) is slightly higher than the rates in Canada and the United States of America (both 0.9), but below the rates for the other listed nations, and around one-quarter of the rate for the Republic of (South) Korea (3.9).

## Rail and water transport accidents

There were 49 deaths associated with water transport accidents in 2002, unchanged from the number of deaths in 2001. There were five rail transport accident-related deaths recorded in 2002, also unchanged from the number of deaths in the preceding year.

**22.25 ROAD TRAFFIC FATALITIES, International comparisons — 2000**

Country	no.	per 100,000 of population	Persons killed		Total population millions
			per 10,000 registered vehicles	per 100 million vehicle km travelled	
<b>Australia</b>	<b>1 817</b>	<b>9.4</b>	<b>1.5</b>	<b>1.0</b>	<b>19.3</b>
Canada	2 917	9.5	1.6	0.9	30.8
France	8 079	13.6	2.4	1.5	59.2
Germany	7 503	9.1	1.5	1.2	82.2
Japan	10 403	8.2	1.3	1.3	126.7
Korea, Republic of (South)	10 236	21.8	7.8	3.9	46.9
New Zealand	462	12.1	1.8	n.a.	3.8
Poland	6 294	16.3	4.5	n.a.	38.6
Spain	5 776	14.5	2.5	n.a.	39.7
Sweden	591	6.7	1.2	n.a.	8.9
Switzerland	592	8.3	1.3	1.1	7.2
United Kingdom	3 580	6.0	1.2	n.a.	59.8
United States of America	41 821	15.2	1.9	0.9	275.1
OECD median	—	11.0	1.9	1.3	—

Source: Australian Transport Safety Bureau.

## Air accidents

### Accidents and fatalities

Since 1991, the number of aircraft accidents has declined by 49%, from 322 in 1991 to 164 in 2002 (table 22.26). In 2002 there were 34 fatalities, a fall of 33% compared with 2001, and considerably lower than the number of annual fatalities recorded during the early-1990s.

**22.26 AIR TRANSPORT, Accidents and fatalities(a)**

	Accidents	Fatalities
1991	322	54
1992	310	66
1993	318	67
1994	266	64
1995	267	51
1996	243	51
1997	254	38
1998	227	56
1999	196	49
2000	222	46
2001	201	51
2002	164	34

(a) Includes accidents in Australia and to Australian registered aircraft overseas. Excludes ballooning accidents.

Source: Australian Transport Safety Bureau.

## Transport infrastructure

Transport infrastructure comprises three essential elements:

- physical infrastructure — roads, rail track, seaports, airports
- transport equipment — motor vehicles, trains, ships, aircraft
- people with the necessary skills — licensed drivers, pilots, etc.

### Physical infrastructure

The cost of constructing Australia's vast transport infrastructure is very high. The value of transport-related public and private sector new engineering construction done during 2001–02 included: \$5,180m on roads, highways and subdivisions; \$326m on bridges; \$867m on railways; \$320m on harbours; and \$548m on pipelines.

### Length of the road system

The length of Australia's roads is described in table 22.27. New South Wales is the state with the greatest length of 'bitumen or concrete' roads (90,905 km), representing just under half of all roads in that state. The Australian Capital Territory has the highest percentage of total road surface consisting of 'bitumen or concrete' (95%) while South Australia has the lowest percentage of its roads that are constructed of 'bitumen or concrete' (29%).

**22.27 LENGTHS OF ROADS OPEN FOR GENERAL TRAFFIC(a) — 30 June 2003**

	Units	NSW(b)	Vic.(c)	Qld	SA	WA(d)	Tas.(e)	NT(f)	ACT
Bitumen or concrete	km	90 905	75 600	68 482	28 231	50 057	10 485	6 547	2 556
Gravel, crushed stone or other improved surface	km	91 169	53 700	51 482	40 868	55 464	(g)13 129	6 607	128
Formed only	km		26 700	43 209	18 480	29 644	{ 639	7 601	(h)
Cleared only	km		n.a.	—	15 117	9 005		13 140	1 291
<b>Total</b>	<b>km</b>	<b>182 074</b>	<b>156 000</b>	<b>178 290</b>	<b>96 584</b>	<b>148 305</b>	<b>24 253</b>	<b>22 046</b>	<b>2 684</b>
Percentage of total surface with bitumen or concrete	%	49.9	48.5	38.4	29.2	33.8	43.2	29.7	95.2

(a) Road length is defined as follows: for NSW, SA & WA — route (end-to-end) length plus ramps, connections, additional carriageways, etc. All reported lengths include roads, bridges and ferry route lengths. For Vic. — route (end-to-end) length excluding ramps, connections, additional carriageways, etc. All reported lengths include roads and bridges, but exclude ferry route lengths. For Qld — length of the primary through carriageway. For Tas. — point-to-point direct travel distance. For NT — road centre-line length in one direction of travel only. For ACT — route (end-to-end) length plus ramps, connections, additional carriageways, etc. Includes roads and bridges, but excludes forestry, private roads and roads not managed by the ACT Government. (b) Excludes Lord Howe Island, forestry-controlled roads and crown roads. (c) Excludes in excess of 40,000 km of roads in areas such as parks and forests coming under the responsibility of organisations such as the Department of Sustainability and Environment, Parks Victoria and Water Catchment Authorities. Includes VicRoads declared roads as at June 2003 and unclassified roads as at June 2002. (d) Excludes approximately 27,100 km of forestry-controlled roads. (e) Includes an estimate for forestry roads. (f) Excludes roads not managed by the NT Government. (g) Includes local government roads in Formed only and Cleared only categories. (h) Included in gravel, crushed stone or other improved surface.

Source: Derived primarily from Road and Traffic Authorities and local government sources in each state and territory.

## Rail network

Australia's rail systems comprise 41,286 km of broad, standard and narrow gauge track (table 22.28). Australia has a diverse range of rail gauges, reflecting the historical development of state infrastructure. It also reflects private development, such as the 4,150 km narrow gauge system of the Queensland sugar industry. The rail system includes the 250 km tram/light rail network in Melbourne, the 12 km tram line in Adelaide, the 7 km light rail and 4 km monorail lines in Sydney, and the 9 km skitube in the New South Wales Snowy Mountains.

## Seaports

Under Section 15 of the *Customs Act 1901* (Cwlth), Australia has 97 appointed ports, which are points of passenger and cargo entry into Australia or transfer where customs and quarantine activities are carried out. Western Australia has the greatest number of such ports (22), while the Northern Territory has the fewest (3). Of the remaining states, Queensland has 20 ports, South Australia (18), Tasmania (15), New South Wales (14), and Victoria has 5 ports.

## Airports

There are 261 licensed airports in Australia and its external territories. Of these, 12 were operated as international airports servicing scheduled

international airlines. The majority of licensed airports are owned and operated by local councils, state government departments and private companies. The remaining airports are owned and operated by the Department of Defence or leased by the Australian Government to private sector companies or government corporations.

## Air pilot licences

At 30 June 2003 there were 30,676 holders of a current aeroplane pilot licence (including student licences), including 15,507 private pilots, 4,350 commercial pilots and 6,046 air transport pilots.

In addition, there were 1,668 holders of a current helicopter pilot licence (including student licences), of whom there were 372 private pilots, 850 commercial pilots and 395 air transport pilots.

There were licences held by 105 commercial balloonists and 285 flight engineers. These figures show only the highest level of licence held and include only those pilots who have a current medical certificate enabling them to exercise the privileges of the licence. Student pilots who have not progressed to the flight test stage are excluded.

**22.28 AUSTRALIAN TRACK NETWORK(a), Route kilometres operated — 30 June**

Gauge	1999	2000	2001	2002(b)
Narrow				
610 mm	4 150	4 150	4 150	4 150
1067 mm	15 122	15 081	15 054	(c)15 160
Standard				
1435 mm	16 381	16 339	16 343	17 678
Broad				
1600 mm	4 009	4 009	4 017	4 017
Dual	264	265	266	281
<b>Total</b>	<b>39 926</b>	<b>39 844</b>	<b>39 830</b>	<b>41 286</b>

(a) Includes tram and light rail. (b) 2001–02 data is from the 2003 ARA Yearbook and Industry Directory. (c) Includes 4 km of 940 mm narrow gauge monorail in Sydney.

Source: *Australasian Railway Association Inc.*

## Transport equipment

### Registered motor vehicles

There were almost 12.5 million motor vehicles (excluding motor cycles, tractors, plant and equipment, caravans and trailers) registered in Australia at 31 March 2002 (table 22.29). This represents an increase of 3% since the previous census was taken on 31 October 2001.

Approximately 8 out of every 10 vehicles are passenger vehicles. Table 22.30 shows registered motor vehicles by state/territory of registration. New South Wales, Victoria and Queensland are the states having the largest numbers of vehicles with 30%, 27% and 19% of the total vehicle fleet respectively.

The average age of the Australian motor vehicle fleet at 31 March 2002 was 10.5 years (table 22.31). Tasmania recorded the highest average age (12.5 years) while the Northern Territory recorded the lowest average age (9.2 years). Of the different vehicle types, campervans had the oldest average age (19.1 years) while motorcycles recorded the lowest (10 years).

The number of motor vehicles registered per capita, (excluding motor cycles) increased from 582 vehicles per 1,000 persons in 1991 to 652 per 1,000 persons in 2002 (table 22.32). Western Australia had the most registered vehicles per capita in 2002, at 708 per 1,000 persons, being 9% above the Australian average.

### 22.29 REGISTERED MOTOR VEHICLES

Motor vehicle census years(c)	Passenger vehicles(a) '000	Light commercial vehicles '000	Trucks			Buses '000	Total(b) '000	Motor cycles '000
			Rigid '000	Articulated '000	Non-freight carrying '000			
1996	9 022	1 602	341	58	16	59	11 097	304
1997	9 240	1 632	342	59	17	61	11 351	313
1998	9 561	1 686	347	62	18	64	11 738	329
1999	9 720	1 721	347	63	18	66	11 935	334
2001	9 870	1 770	338	63	18	68	12 126	351
2002	10 137	1 820	342	64	19	70	12 451	371

(a) Includes campervans. (b) Excludes motor cycles, tractors, plant and equipment, caravans and trailers. (c) As at 31 March for 2002 and 2001. As at 31 October for all previous years shown.

Source: *Motor Vehicle Census, Australia, 31 March 2002 (9309.0)*.

### 22.30 REGISTERED MOTOR VEHICLES — 31 March 2002

	Passenger vehicles(a) '000	Light commercials '000	Trucks			Buses '000	Total(b) '000	Motor cycles '000
			Rigid '000	Articulated '000	Non-freight carrying '000			
New South Wales	3 095	515	103	15	3	19	3 751	96
Victoria	2 762	424	85	19	5	16	3 311	103
Queensland	1 842	423	69	13	4	15	2 367	79
South Australia	867	130	25	6	2	4	1 035	28
Western Australia	1 072	221	44	8	3	10	1 359	46
Tasmania	249	63	9	2	1	2	326	9
Northern Territory	69	25	3	1	—	3	100	3
Australian Capital Territory	180	18	2	—	—	1	201	7
<b>Australia</b>	<b>10 137</b>	<b>1 820</b>	<b>342</b>	<b>64</b>	<b>19</b>	<b>70</b>	<b>12 451</b>	<b>371</b>

(a) Includes campervans. (b) Excludes motor cycles, tractors, plant and equipment, caravans and trailers.

Source: *Motor Vehicle Census, Australia, 31 March 2002 (9309.0)*.

### 22.31 ESTIMATED AVERAGE AGE OF THE VEHICLE FLEET(a) — 31 March 2002

Type of vehicle	State/territory of registration								
	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Passenger vehicles	9.0	10.5	10.2	11.7	10.5	12.1	8.9	9.9	10.1
Campervans	17.3	19.3	17.2	20.1	21.4	19.8	20.1	19.6	19.1
Light commercial vehicles	10.4	12.3	11.2	12.5	12.0	13.4	9.9	10.9	11.5
Light rigid trucks	11.2	14.1	12.4	14.1	14.1	17.0	7.9	11.8	12.6
Heavy rigid trucks	14.0	17.3	14.9	17.9	17.8	17.5	13.0	11.5	16.0
Articulated trucks	10.8	12.1	11.6	11.1	13.8	11.4	11.7	8.5	11.8
Non-freight carrying trucks	13.4	15.7	11.5	14.6	16.9	17.1	12.4	14.9	14.6
Buses	9.7	10.7	10.4	11.8	9.1	14.3	8.1	10.3	10.2
Motor cycles	9.0	9.6	10.6	(b)9.5	11.9	10.6	8.1	9.4	10.0
<b>Total</b>	<b>9.4</b>	<b>10.9</b>	<b>10.5</b>	<b>11.9</b>	<b>11.1</b>	<b>12.5</b>	<b>9.2</b>	<b>10.0</b>	<b>10.5</b>

(a) Excludes plant and equipment, caravans and trailers. (b) Year of manufacture is frequently not reported for SA motor cycles.

Source: Motor Vehicle Census, Australia, 31 March 2002 (9309.0).

### 22.32 MOTOR VEHICLES(a)(b) ON REGISTER PER 1,000 OF POPULATION

	1991	1993	1995	1996	1997(c)	1998	1999	2001(c)	2002
New South Wales	525	529	545	556	546	581	574	568	578
Victoria	622	642	637	669	661	682	693	690	701
Queensland	569	593	614	624	605	645	659	651	663
South Australia	637	638	653	667	661	693	692	694	699
Western Australia	653	665	679	694	682	725	723	722	731
Tasmania	643	661	676	686	688	684	701	700	708
Northern Territory	507	497	520	529	508	538	535	516	520
Australian Capital Territory	556	591	604	613	637	627	635	634	643
<b>Australia</b>	<b>582</b>	<b>595</b>	<b>606</b>	<b>614</b>	<b>630</b>	<b>612</b>	<b>647</b>	<b>642</b>	<b>652</b>

(a) Excludes motor cycles, tractors, plant and equipment, caravans and trailers. (b) Motor vehicle census years: as at 31 March for 2002 and 2001, as at 31 October for all previous years shown. (c) Revised data.

Source: Motor Vehicle Census, Australia (9309.0).

### Sales of new motor vehicles

After reductions in each of the previous three years, sales of new motor vehicles increased to a record of 824,000 vehicles sold in 2002, (table 22.33).

Passenger vehicles comprised 66% of sales made in 2002, with four wheel drive 'sports utility' vehicles comprising a further 17% of total vehicles sold. This represents continuation of the shift to four wheel drive sports utility type of vehicle which in 1994 accounted for only 7% of total new vehicle sales while passenger vehicles then accounted for 75% of total sales.

### 22.33 SALES OF NEW MOTOR VEHICLES, By type of vehicle

	Passenger vehicles(a)	Other vehicles(b)	Total vehicles
	'000	'000	'000
1994	462	155	<b>616</b>
1995	489	154	<b>643</b>
1996	491	158	<b>649</b>
1997	541	183	<b>723</b>
1998	583	224	<b>807</b>
1999	547	238	<b>784</b>
2000	556	235	<b>791</b>
2001	531	245	<b>775</b>
2002	540	284	<b>824</b>

(a) Includes vehicles designed primarily for the carriage of people, such as cars, station wagons and people movers.  
 (b) Includes trucks, buses, vans, all terrain wagons, pick-up/cab chassis (whether four-wheel drive or not) with a gross vehicle mass of 2.5 to 3.5 tonnes. Also includes heavy trucks and buses, with a gross vehicle mass exceeding 3.5 tonnes, and four-wheel drive passenger vehicles.

Source: Sales of New Motor Vehicles, Australia (Electronic Publication) (9314.0).

After a period of decline, sales of new motor vehicles rose in 2002 (table 22.34). In 2002 New South Wales had the largest sales of new motor vehicles (283,000), representing 34% of total sales in that year, followed by Victoria (27%) and Queensland (19%).

### Rail rolling stock

The number of locomotives, passenger cars and wagons in the Australian rail fleet, is shown in table 22.35. A large number of the narrow gauge diesel locomotives are owned by Queensland operators (Queensland Rail and Sugar Cane Railways), and service the Brisbane to Cairns route or the extensive sugar cane rail network. Queensland Rail has the largest fleet of such locomotives with 326 narrow gauge diesel and 182 narrow gauge electric.

### Shipping fleet

There were 9,040 ships registered in Australia at 30 June 2003 (table 22.36), with Queensland having the largest fleet (2,884 ships). In all states and territories except South Australia and Tasmania, over half the fleets were registered for recreational use. High percentages of the ships registered in South Australia (49%) and Tasmania (41%) were registered for fishing purposes.

The major Australian trading fleet (vessels of 2,000 deadweight tonnes and over) comprised 51 ships at 30 June 2001 (table 22.37). The minor trading fleet, consisting of vessels with gross tonnage of between 150 and 2,000 tonnes, comprised 30 ships.

**22.34 SALES OF NEW MOTOR VEHICLES, By state and territory**

	State/territory of registration								Aust. '000
	NSW '000	Vic. '000	Qld '000	SA '000	WA '000	Tas. '000	NT '000	ACT '000	
1994	225	143	115	40	62	13	6	13	<b>616</b>
1995	235	152	116	42	64	14	8	13	<b>643</b>
1996	231	157	119	42	67	13	7	11	<b>649</b>
1997	257	179	130	47	73	14	8	14	<b>723</b>
1998	286	203	146	53	80	15	9	15	<b>807</b>
1999	282	206	142	48	70	14	8	14	<b>784</b>
2000	282	214	139	47	71	14	8	16	<b>791</b>
2001	271	216	136	48	69	14	7	14	<b>775</b>
2002	283	225	155	53	73	15	7	14	<b>824</b>

Source: Sales of New Motor Vehicles, Australia (Electronic Publication) (9314.0).

### 22.35 AUSTRALIAN RAIL FLEET — 30 June

	2000	2001	2002(a)
LOCOMOTIVES			
Diesel			
Broad gauge	131	142	145
Standard gauge	886	875	912
Narrow gauge	1 050	1 018	747
Electric			
Standard gauge	60	60	58
Narrow gauge	184	184	182
XPT standard gauge	19	21	19
<b>Total</b>	<b>2 330</b>	<b>2 300</b>	<b>2 063</b>
PASSENGER CARS			
Locomotive hauled	711	668	683
Diesel rail cars			
Non-urban	117	117	117
Suburban	106	100	91
<i>Total</i>	223	217	208
Electric railcars			
Interurban(b)	283	283	283
Suburban	2 566	2 593	2 602
<i>Total</i>	2 849	2 876	2 885
Tram/light rail	556	565	601
Charter/heritage	47	40	43
<b>Total</b>	<b>4 386</b>	<b>4 366</b>	<b>4 420</b>
WAGONS			
Revenue			
Broad gauge	2 025	2 020	2 000
Standard gauge	20 703	20 928	22 341
Narrow gauge(c)	19 336	18 614	18 067
<i>Total</i>	42 064	41 562	42 408
Other	1 719	1 650	1 626
<b>Total</b>	<b>43 783</b>	<b>43 212</b>	<b>44 034</b>

(a) 2001–02 data is from the 2003 ARA Yearbook and Industry Directory. (b) Includes 12 tilt cars. (c) Excludes 54,000 610 mm sugar cane wagons.

Source: Australasian Railway Association Inc.

## 22.36 SHIPS REGISTERED(a) IN AUSTRALIA — 30 June 2003

	Nature of registration					Total
	Recreational	Fishing	Government	Demise chartered(b)	Other	
New South Wales	1 832	283	4	6	255	2 380
Victoria	690	202	—	—	96	988
Queensland	1 678	761	18	13	414	2 884
South Australia	281	311	1	—	46	639
Western Australia	640	419	1	3	147	1 210
Tasmania	273	227	1	—	60	561
Northern Territory	284	63	1	—	30	378
<b>Australia</b>	<b>5 678</b>	<b>2 266</b>	<b>26</b>	<b>22</b>	<b>1 048</b>	<b>9 040</b>

(a) Australian-owned commercial or trading ships of 24 metres or more in tonnage length. All ships, regardless of tonnage length, must be registered before departing on a voyage from Australia or from a foreign port where there is an Australian diplomatic representative. (b) Demise charter is the charter of a foreign ship operated by an Australian company in Australian waters. These ships are not necessarily engaged in trade or commerce.

Source: Australian Maritime Safety Authority.

## 22.37 THE AUSTRALIAN TRADING FLEET — 30 June 2001

Ships	no.	Deadweight tonnes(a)	Gross tonnage(b)
<b>Major Australian fleet(c)</b>			
Coastal			
Australian registered	35	1 003 535	725 107
Overseas registered	4	115 144	71 983
<i>Total</i>	39	1 118 679	797 090
Overseas			
Australian registered	10	933 731	796 051
Overseas registered	2	255 899	147 411
<i>Total</i>	12	1 189 630	943 462
<i>Total</i>	51	2 308 309	1 740 552
<b>Minor trading ships(d)</b>			
Australian registered	24	11 798	15 556
Overseas registered	6	3 876	8 190
<i>Total</i>	30	15 674	23 746
<b>Australian trading fleet</b>	<b>81</b>	<b>2 323 983</b>	<b>1 764 298</b>

(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. (c) Greater than 2,000 deadweight tonnes. (d) Between 150 gross registered tonnes and 2,000 deadweight tonnes.

Source: Bureau of Transport and Regional Economics.

### Aircraft fleet

There were 11,788 aircraft in the Australian Civil Aircraft Register, at 31 December 2002 (table 22.38). This included 9,335 aeroplanes and 1,034 helicopters (table 22.38). Over the 10 years

to 2002, the number of aeroplanes has increased by 839 (10%), helicopters by 385 (59%), gliders by 166 (18%), and balloons by 148 (78%).

**22.38 REGISTERED AIRCRAFT(a) — 31 December**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Aeroplanes											
Single engine	6 547	6 565	6 612	6 676	6 738	6 890	7 024	7 196	7 280	7 350	7 403
Multi engine	1 949	1 881	1 884	1 907	1 950	1 950	1 918	1 930	1 971	1 969	1 932
<i>Total</i>	8 496	8 446	8 496	8 583	8 688	8 840	8 942	9 126	9 251	9 319	9 335
Helicopters	649	634	650	680	684	717	751	851	926	967	1 034
Gliders(b)	916	932	952	965	985	1 062	1 069	1 068	1 071	1 082	1 082
Balloons	189	203	223	239	262	282	296	309	322	334	337
<b>Total</b>	<b>10 250</b>	<b>10 215</b>	<b>10 321</b>	<b>10 467</b>	<b>10 619</b>	<b>10 901</b>	<b>11 058</b>	<b>11 354</b>	<b>11 570</b>	<b>11 702</b>	<b>11 788</b>

(a) Includes amateur built aircraft. (b) Includes powered and non-powered gliders.

Source: Civil Aviation Safety Authority, Aircraft Register.

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## COMMUNICATIONS AND INFORMATION TECHNOLOGY

This chapter presents information on the characteristics and performance of industries involved in the production of information and communications technology goods and services. It also provides statistics on Internet activity in Australia and the use of information technology by businesses, farms, households and government organisations.

The communication services industry has been one of the fastest growing industries in Australia. In 2001–02, the communication services industry contributed nearly 3% to Australia's gross domestic product.

The chapter concludes with an article *Use of information technology by Aboriginal and Torres Strait Islander peoples*.

## The communication services industries

The communication services industries encompass telecommunication services, and postal and courier services. These industries comprise the Communication Services Division of the Australian and New Zealand Standard Industrial Classification (ANZSIC).

The Australian national accounts provide some statistics about the communication services industries including a measure of its overall contribution to the total level of economic activity in Australia, gross domestic product (GDP). These are presented in table 23.1. The chain volume measure of gross value added by the communication services industries increased by 3.0% from 2000–01 to 2001–02, which was an improvement over the previous year's small

increase of 0.8%. However, these recent annual increases are substantially below those experienced in earlier years, which were regularly showing around 10% annual growth.

Total factor income is that part of the cost of producing the GDP which consists of gross payments to factors of production (labour and capital) and is equal to the sum of compensation of employees, gross operating surplus and gross mixed income. Examination of the total factor income for the communication services industries shows changes in the share of income accruing to labour (i.e. compensation of employees) compared with the share accruing to capital (i.e. profits). Graph 23.2 shows how the shares accruing to wages and to profits for the communication services industries have changed since 1995–96.

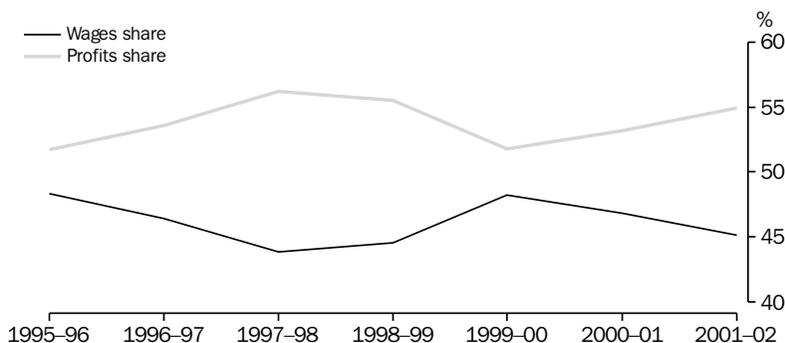
**23.1 COMMUNICATION SERVICES INDUSTRIES, Gross value added(a)**

	Units	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02
<b>At current prices(b)</b>							
Value	\$m	15 615	17 157	18 087	18 129	19 236	19 412
Change from previous period	%	7.1	9.9	5.4	0.2	6.1	0.9
<b>Chain volume measures(c)</b>							
Value	\$m	14 536	16 093	17 844	19 087	19 236	19 814
Change from previous period	%	10.3	10.7	10.9	7.0	0.8	3.0
Contribution to GDP	%	2.5	2.7	2.8	2.9	2.9	2.8

(a) The value of output at basic prices minus the value of intermediate consumption at purchasers' prices. Basic prices valuation of output removes the distortion caused by variations in the incidence of commodity taxes and subsidies across the output of industries. (b) Estimates valued at the prices of the period to which the observation relates. (c) Estimates revalued to remove the direct effects of changes in prices over time. The reference year for chain volume measures is 2000–01.

Source: Australian System of National Accounts, 2001–02 (5204.0).

**23.2 COMMUNICATION SERVICES INDUSTRIES TOTAL FACTOR INCOME(a)**



(a) Current prices.

Source: Australian System of National Accounts, 2001–02 (5204.0).

Table 23.3 shows key measures of industry structure and performance for the communication services industries, compiled from the Australian Bureau of Statistics (ABS) annual Economic Activity Survey of employing businesses. The main features are:

- The number of communication services businesses continued to grow, reaching 4,389 businesses at 30 June 2001. The number of businesses increased by 5% in the year to 30 June 2001, following a 7% increase in the year to 30 June 2000.
- Employment reached a peak in 1995–96 (137,000 persons) and fluctuated within a narrow range over the next few years. In the year to 30 June 2001, employment increased by 0.4% to 120,000 persons.
- Gross operating surplus increased by 5% between 1999–2000 and 2000–01, turning around the decrease of 1% between 1998–99 and 1999–2000.
- Operating profit before tax increased by 5% between 1999–2000 and 2000–01, following a fall of less than 1% between 1998–99 and 1999–2000.
- Net worth grew by 10% in 2000–01, replicating a 10% rise in 1999–2000.

- Capital spending has fluctuated over the years, but increased by 80% between 1999–2000 and 2000–01, following an increase of 30% between 1998–99 and 1999–2000.

## Telecommunication services industry

The telecommunication services industry is made up of businesses mainly providing telecommunication services to the public by wire, cable or radio. The primary activities of the industry include cable and communication channel services, network communication services, operation of radio relay stations, satellite communication services, telecommunications, telephone services, teleprinter and telex services, and operation of television relay stations.

The industry excludes businesses which manufacture telecommunications equipment, businesses engaged in cable laying and transmission line construction, and those providing secretarial services (e.g. personalised telephone answering services or message delivery services). Also, the ABS classifies the provision of radio and television services (as distinct from the operation of radio and television relay stations) as part of the Cultural and Recreational Services Division of ANZSIC.

### 23.3 COMMUNICATION SERVICES INDUSTRIES, Structure and performance

	Units	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01
<b>Industry structure</b>							
Businesses at 30 June	no.	2 363	3 049	3 540	3 899	4 172	4 389
Employment at 30 June	'000	137	125	118	119	119	120
<b>Income statement</b>							
Sales of goods and services	\$m	21 631	23 691	24 696	29 432	32 696	34 407
less Cost of sales	\$m	9 271	11 135	9 827	13 548	17 077	17 469
<i>equals</i> Trading profit	\$m	12 360	12 556	14 869	15 884	15 619	16 938
<i>plus</i> Interest	\$m	179	171	140	155	137	180
<i>plus</i> Other operating income	\$m	624	77	19	252	886	894
less Labour costs	\$m	6 273	6 605	6 122	5 548	5 578	6 071
less Depreciation	\$m	2 791	3 026	2 961	3 354	3 787	3 640
less Other operating expenses	\$m	142	442	426	399	373	1 037
<i>equals</i> Earnings before interest and tax	\$m	3 957	2 731	5 520	6 989	6 904	7 264
less Interest expenses	\$m	723	742	916	836	798	858
<i>equals</i> Operating profit before tax	\$m	3 234	1 989	4 603	6 153	6 105	6 406
Total assets	\$m	34 373	37 964	36 358	40 608	45 798	55 898
Total liabilities	\$m	17 729	23 713	21 196	22 530	25 882	34 039
<i>Net worth</i>	\$m	16 643	14 251	15 162	18 079	19 916	21 858
Capital expenditure	\$m	6 217	5 365	5 304	6 173	8 004	14 373
Gross operating surplus	\$m	6 615	8 351	9 585	11 558	11 447	11 994

Source: *Business Operations and Industry Performance, Australia, 2000–01 (8140.0)*.

The *Telecommunications Act 1997* (Cwlth) allows any person to provide a range of telecommunication services, provided they comply with the provisions of the Act. Providers may use telecommunications capacity acquired from a licensed carrier or, in defined circumstances, from non-carrier infrastructure, to supply a range of local or national telecommunication services to consumer and commercial markets. Service providers typically purchase network capacity from carriers at discounted rates. In theory this allows them to provide either similar services at competitive prices or a variety of value-adding services. These services include basic telephony services, mobile phone services, data and value-adding services, Internet services and other telecommunication services.

Table 23.4 shows summary indicators of the performance of the telecommunication services industry from surveys conducted by the ABS in 1996–97, 1998–99 and 2000–01. The growth in this industry is demonstrated by the increase in total income by 19% (or \$5.1b) between 1998–99 and 2000–01, to reach over \$31b. However, operating profit before tax declined by \$0.6b or 11% between 1998–99 and 2000–01.

## Internet activity

In the September quarter 2000, the ABS commenced a quarterly survey of all identified businesses in Australia providing Internet connectivity services, except for libraries, Internet kiosks and Internet cafes. The survey includes businesses for which telecommunication service provision was a minor part of their business operation. From the March quarter 2002, the

collection frequency of the survey was changed from quarterly to biannual. Table 23.5 shows summary indicators of Internet activity for the March quarters 2001, 2002 and 2003:

- Over the year to the end of March 2003, the total number of Internet service providers (ISPs) fell from 571 to 554, mainly as a result of a decrease in the number of smaller ISPs (those with 101 to 1,000 subscribers). The number of smaller ISPs declined by 25.
- Points of presence of ISPs fell from 2,130 to 1,687 (by 21%) over the year to the end of March 2003, while access lines rose from 447,050 to 857,470 (by 91%). This large increase in access lines is largely attributable to the increase in permanent connection subscribers.
- Data downloaded by subscribers were 3,046 million megabytes (MBs) during the March quarter 2003, up from 1,831 million MBs during the March quarter 2002. On average, each subscriber downloaded 616 MBs during the March quarter 2003.
- The number of subscribers increased from 4.2 million at the end of March 2002 to almost 5.1 million (20%), representing an average of 5.9 subscribers per access line at the end of March 2003.
- Increasing numbers of subscribers are accessing the Internet using permanent (non dial-up) connections, including broadband technologies such as Digital Subscriber Lines (DSL). The number of subscribers using DSL increased from 60,000 to 209,000 over the year to the end of March 2003, with the number of ISPs offering this service increasing from 131 to 310.

### 23.4 TELECOMMUNICATION SERVICES INDUSTRY(a), Summary indicators

Indicator	Units	1996–97	1998–99	2000–01
Businesses at 30 June	no.	411	868	814
Employment at 30 June	no.	79 654	74 471	77 275
Income from ICT services(b)	\$m	19 762	25 398	29 827
Total income	\$m	20 927	26 417	31 505
Total expenses	\$m	19 458	20 637	26 661
Operating profit before tax	\$m	1 473	5 566	4 954

(a) Excludes businesses for which telecommunication service provision was a minor part of their business operation.

(b) Information and communication technology.

Source: *Information Technology, Australia, 2000–01 (8126.0)*.

## 23.5 INTERNET ACTIVITY, Summary indicators

	Units	March quarter		
		2001	2002	2003
Total number of Internet service providers(a)	no.	665	571	554
Internet service providers providing DSL services(a)(b)	no.	52	131	310
Internet access				
Points of presence(a)	no.	2 310	2 130	1 687
Access lines(a)	no.	490 108	447 050	857 470
Total number of subscribers(a)	'000	3 968	4 229	5 076
Subscribers using DSL(a)(b)	'000	27	60	209
Data downloaded(c)	million MBs	1 040	1 831	3 046
Average number of subscribers per access line(a)	no.	8.1	9.5	5.9
Average data downloaded per subscriber(c)(d)	MBs	273	433	616

(a) As at the end of the reference quarter. (b) Digital Subscriber Line. (c) During the three months of the reference quarter.

(d) Calculated by dividing data downloaded with an estimate of the number of subscribers at the midpoint of the reference quarter.

Source: *Internet Activity, Australia (8153.0)*.

## Postal communications

### Australian Postal Corporation

The Australian Postal Corporation (trading as Australia Post) is a government business enterprise owned by the Commonwealth of Australia. It operates under the *Australian Postal Corporation Act 1989* (Cwlth). Australia Post is independent of government funding, achieves a substantial profit from its activities, and pays a full range of taxes and charges. In 2001–02, Australia Post paid \$455m in taxes and government charges (\$459m in 2000–01).

Australia Post offers letter and parcel delivery services within Australia and internationally. It also provides a range of related services including electronic bulk mail handling, advertising mail, bill payment, money order and banking services, express delivery services and philatelic products and services.

Australia Post's legal obligations require it to:

- provide Australians with a universal letter service
- carry standard letters within Australia at a uniform price
- ensure that the letter service meets the social, industrial and commercial needs of the community
- perform its functions according to sound business practice
- perform its functions consistent with the Commonwealth's general policies.

Financial and other operating statistics for Australia Post are shown in tables 23.6, 23.7 and 23.8.

### 23.6 AUSTRALIAN POSTAL CORPORATION, Consolidated financial statement

	Units	1998–99	1999–2000	2000–01	2001–02
Revenue	\$m	3 459	3 739	3 748	3 758
Expenditure	\$m	3 086	3 347	3 346	3 351
Operating profit before income tax	\$m	373	392	402	407
Dividends	\$m	149	156	275	292
Total taxes and government charges(a)	\$m	328	327	459	455
Cost of Universal Service Obligation(b)	\$m	75	82	86	88
Total assets(c)	\$m	2 854	3 037	3 199	3 229
Return on assets(d)	%	13.8	14.0	13.4	12.9

(a) Includes sales tax and customs duty, payroll tax, local government taxes and charges, federal excise duty, and fringe benefits tax. (b) The Universal Service Obligation ensures that all Australians have reasonable access to the letter service; this includes the delivery of standard letters by ordinary post at a uniform price even when the delivery cost is higher. (c) At 30 June of the financial years shown. (d) Operating profit before net interest and income tax divided by average total assets.

Source: *Australian Postal Corporation*.

### 23.7 AUSTRALIAN POSTAL CORPORATION, Mail delivery network and post outlets

	1998-99	1999-2000	2000-01	2001-02
Households receiving mail	7 668 143	7 922 702	8 110 865	8 264 191
Businesses receiving mail	838 009	856 598	901 482	933 107
<b>Total delivery points</b>	<b>8 506 152</b>	<b>8 779 300</b>	<b>9 012 347</b>	<b>9 197 298</b>
Corporate outlets and licensed post offices	3 903	3 887	3 872	3 861

Source: Australian Postal Corporation.

### 23.8 AUSTRALIAN POSTAL CORPORATION, Total postal articles handled

	1998-99	1999-2000	2000-01	2001-02
	million	million	million	million
Posted in Australia for delivery in Australia	4 194	4 461	4 558	4 543
Posted in Australia for delivery overseas	172	193	180	178
Posted overseas for delivery in Australia	164	169	150	150
<b>Total articles through mail network</b>	<b>4 530</b>	<b>4 823</b>	<b>4 888</b>	<b>4 871</b>

Source: Australian Postal Corporation.

## The information and communication technology (ICT) sector

The ICT sector is that part of the economy which produces information and communication technology goods and services. It includes businesses involved in telecommunication services, computer services, and selected manufacturing and wholesale trade industries. The ICT sector overlaps with the Communication Services Division discussed earlier.

Table 23.9 provides statistics for a selection of industries considered to be the prominent contributors to the production and distribution of ICT goods and services. The table is based on ABS surveys conducted in respect of 1998-99 and 2000-01.

At June 2001, there were 22,475 ICT specialist businesses in the industries surveyed. Generally, ICT specialists are those businesses for which the income from the sale, distribution and provision of ICT goods and services forms the greater part of the total income of the business. The number of ICT specialist businesses in 2000-01 increased by 25% (or 4,487) in the two-year period since the previous survey in respect of 1998-99. This increase was mainly due to growth in the numbers

of computer wholesale businesses by 50% (or 775 businesses) and of computer consultancy services businesses by 24% (or 3,350 businesses).

There were 238,521 persons working in ICT specialist businesses at the end of June 2001, a 20% increase since June 1999. The highest increases in employment occurred in the computer services industry grouping (32%) and the wholesale trade industry grouping (30%). Income in the ICT sector continued to grow, and was \$77.5b in 2000-01, an increase of 24% between 1998-99 and 2000-01. During 2000-01, ICT specialist businesses generated a total operating profit before tax of \$4,925m, representing a decline of 35% between 1998-99 and 2000-01.

Total income from the domestic production of selected ICT goods and services was \$50.2b in 2000-01, an increase of 24% between 1998-99 and 2000-01. Imports of selected ICT goods and services totalled \$17.3b during 2000-01, and mainly comprised computer and communications hardware, equipment, cables and other computer parts, and consumables (\$14.3b), imports of which increased by 33% between 1998-99 and 2000-01 (table 23.10).

### 23.9 INDUSTRIES IN THE ICT SECTOR, Employment, income and profit(a)

Industry	Employment		Total income		Operating profit before tax	
	1998-99 no.	2000-01 no.	1998-99 \$m	2000-01 \$m	1998-99 \$m	2000-01 \$m
<b>Manufacturing</b>						
Computer and business machines	3 587	3 398	1 399	1 343	39	39
Telecommunication, broadcasting and transceiving equipment	6 235	8 373	1 681	2 341	81	70
Electronic equipment n.e.c.	—	—	—	—	—	—
Electric cable and wire	998	928	307	470	29	46
<b>Total</b>	<b>10 820</b>	<b>12 699</b>	<b>3 387</b>	<b>4 153</b>	<b>148</b>	<b>155</b>
<b>Wholesale trade</b>						
Computers	26 816	38 656	15 569	20 618	672	185
Business machines and electrical and electronic equipment n.e.c.	12 411	12 327	6 717	6 704	289	-573
<b>Total</b>	<b>39 227</b>	<b>50 983</b>	<b>22 285</b>	<b>27 323</b>	<b>961</b>	<b>-388</b>
<b>Telecommunication services</b>	<b>74 471</b>	<b>77 275</b>	<b>26 417</b>	<b>31 505</b>	<b>5 566</b>	<b>4 954</b>
<b>Computer services</b>						
Data processing	1 829	3 718	143	477	12	52
Information storage and retrieval	920	1 174	101	150	10	12
Computer maintenance	2 544	4 451	294	983	-16	31
Computer consultancy	68 779	88 222	9 972	12 927	840	110
<b>Total</b>	<b>74 072</b>	<b>97 565</b>	<b>10 509</b>	<b>14 538</b>	<b>845</b>	<b>204</b>
<b>Total</b>	<b>198 589</b>	<b>238 521</b>	<b>62 599</b>	<b>77 518</b>	<b>7 520</b>	<b>4 925</b>

(a) The data relates to ICT specialist businesses within the industries in the ICT sector. See source Glossary for definition of ICT specialist businesses.

Source: *Information Technology, Australia, 2000-01 (8126.0)*.

### 23.10 ICT GOODS AND SERVICES, Domestic production and imports

Commodity	Income from domestic production		Imports	
	1998-99 \$m	2000-01 \$m	1998-99 \$m	2000-01 \$m
Computer and communications hardware, equipment and cables	3 620	4 728	10 757	14 328
Packaged software and computer services	11 698	15 560	1 310	1 192
Telecommunication services	25 175	29 910	1 467	1 766
<b>Total</b>	<b>40 492</b>	<b>50 199</b>	<b>13 534</b>	<b>17 286</b>

Source: *Information Technology, Australia, 2000-01 (8126.0)*.

## Research and experimental development (R&D) undertaken by the ICT sector

Chapter 25, *Science and innovation* presents a range of R&D statistics based on various ABS surveys. The data presented in table 23.11 have been drawn from the ABS business sector R&D surveys for all businesses in the ANZSIC industries covered by the ICT sector.

During 2001-02, expenditure on R&D by the ICT sector was \$1,682m, 30% of total business sector R&D expenditure (\$5,546m). In current price terms this expenditure was 12% higher than the level recorded in 2000-01 (table 23.11).

Major ICT research fields where R&D expenditure occurred were Computer software (\$549m) and Communication technologies (\$543m), 33% and 32% respectively of the total.

The bulk of the R&D expenditure in the ICT sector was in the Computer services industry grouping (\$723m or 43%), followed by the Telecommunications service industry grouping (\$360m or 21%) and the Manufacturing industry grouping (\$354.7m or 21%).

### 23.11 R&D EXPENDITURE, By ICT industry groupings and research field

Research field	Manufacturing \$m	Wholesale trade \$m	Telecommunication services \$m	Computer services \$m	Total \$m
2000–01					
Information systems and technologies	13.9	n.p.	n.p.	96.3	122.7
Computer hardware	7.4	n.p.	n.p.	8.2	18.6
Computer software	91.7	33.2	3.8	389.6	518.2
Communication technologies	168.1	n.p.	n.p.	31.9	470.7
Other information, computer and communication technologies	7.9	76.7	80.1	15.4	180.2
<i>Total ICT fields</i>	289.0	n.p.	n.p.	541.4	1 310.4
Other fields	81.3	n.p.	n.p.	87.2	188.0
<b>Total</b>	<b>370.2</b>	<b>233.2</b>	<b>266.3</b>	<b>628.7</b>	<b>1 498.4</b>
2001–02					
Information systems and technologies	12.9	2.8	11.8	109.7	137.2
Computer hardware	7.5	n.p.	n.p.	5.0	18.4
Computer software	85.2	46.4	13.1	404.0	548.6
Communication technologies	124.0	n.p.	n.p.	103.7	543.4
Other information, computer and communication technologies	35.6	n.p.	n.p.	19.8	245.8
<i>Total ICT fields</i>	265.3	n.p.	n.p.	642.2	1 493.5
Other fields	89.4	n.p.	n.p.	80.7	188.5
<b>Total</b>	<b>354.7</b>	<b>244.5</b>	<b>359.9</b>	<b>722.9</b>	<b>1 681.9</b>

Source: ABS data available on request, Survey of Research and Experimental Development — Business Sector.

## Use of information technology

### Business use of information technology (IT)

The growth in the adoption of IT by Australian businesses has slowed compared to previous years (graph 23.12). For the period between June 2001 and June 2002 the proportion of businesses using a computer remained unchanged at 84%. Over the same period, growth in access to the Internet has increased three percentage points to 72% and the proportion of businesses with a web presence increased by two percentage points to 24%. In the year to June 2001, the proportion of businesses using a computer, accessing the Internet and having a web presence, grew by 8, 13 and 6 percentage points respectively.

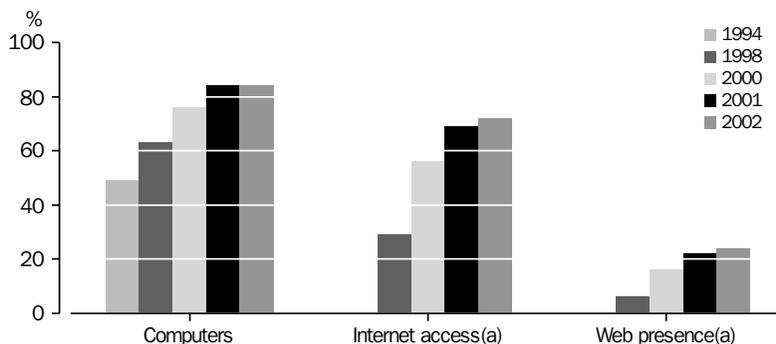
### Adoption of IT by businesses

A strong relationship exists between the employment size of a business and the likelihood that the business is using IT (table 23.13). As employment size increases, so does the proportion of businesses making use of IT. For example, at 30 June 2002 all large businesses (100 or more persons employed) used computers,

99% had access to the Internet and 81% had a web presence. Micro businesses (0–4 persons employed) had a lower level of IT adoption: 79% used computers, 65% had access to the Internet and only 15% had a web presence.

At the end of June 2002, the proportion of businesses using information technologies varied considerably across industries. The proportion of businesses using computers or with access to the Internet was lowest in the Personal and other services industry (70% and 53% respectively) and in the Accommodation, cafes and restaurants industry (72% and 57% respectively). Computer and Internet access was highest in the Property and business services industry (94% and 87% respectively). The highest proportion of businesses with a web presence was in the Cultural and recreation services and the Wholesale trade industries (both 36%), while the lowest proportion was in the Construction industry (9%). It should be noted, however, that at the end of June 2001, the Electricity, gas and water supply industry had the highest computer (95%), Internet access (89%) and web presence (44%), but data for this industry at the end of June 2002 is not available.

### 23.12 BUSINESSES USE OF IT — 30 June



(a) Data not collected for 1993–94 survey.

Source: *Business Use of Information Technology, 2001–02 (8129.0)*.

### 23.13 BUSINESS USE OF SELECTED INFORMATION TECHNOLOGIES — 30 June 2002

	Number of businesses '000	Businesses with(a)		
		Computers %	Internet access %	Web site or home page %
<b>Employment size</b>				
Less than 5 persons	408	79	65	15
5–19 persons	201	91	80	34
20–99 persons	45	98	93	55
100 or more persons	6	100	99	81
<b>Industry</b>				
Mining	2	89	81	30
Manufacturing	55	81	71	29
Electricity, gas and water supply	—	n.p.	n.p.	n.p.
Construction	92	81	63	9
Wholesale trade	46	90	79	36
Retail trade	114	78	63	25
Accommodation, cafes and restaurants	34	72	57	31
Transport and storage	32	81	66	23
Communication services	5	83	64	22
Finance and insurance	26	90	84	25
Property and business services	150	94	87	30
Health and community services	55	89	72	15
Cultural and recreational services	19	87	80	36
Personal and other services	31	70	53	23
<b>Total businesses</b>	<b>661</b>	<b>84</b>	<b>72</b>	<b>24</b>

(a) Proportions are of all businesses in each category.

Source: *Business Use of Information Technology, 2001–02 (8129.0)*.

## Business use of the Internet

The most common method of Internet access by Australian businesses was dial-up via modem with 86% of businesses utilising this method. Less common was the use of Digital Subscriber Line (DSL) (7%), cable modem (7%) and Integrated Services Digital Network (ISDN) (4%). Only a very small percentage of businesses had access to the Internet via a wireless connection (1%).

Despite only a small increase in the proportion of businesses using the Internet, the nature of the activity has changed. For example, while use of the Internet for email remained the most common activity for businesses with Internet access (94%), the proportion accessing banking and financial services increased from 59% during 2000–01 to 69% during 2001–02. There was also an increase in the use of the Internet for information searches, with the proportion of businesses undertaking this activity increasing from 80% to 88% over the period.

## Business use of web sites

While the number of businesses selling via the Internet has decreased, those businesses undertaking selling via the web are becoming more sophisticated. Over the period, more businesses with a web presence offered on-line ordering (14% to 16%), shopping cart facilities (4% to 5%), on-line payment capabilities (5% to 9%) and the capability for secure access or transactions (5% to 7%). The integration of web technology with back-end systems continued to be rare among businesses with a web presence (6%), but has increased from 3% since June 2001. Similar increases occurred over the same period for the proportion of businesses with a personalised page for repeat customers (2% to 5%), account information (4% to 6%), and the facility to track orders (2% to 4%).

## The significance of Internet commerce in Australia

The ABS defines Internet commerce as placing or receiving orders for goods and services via the Internet or web, with or without associated on-line payments.

The proportion of businesses placing orders via the Internet or web, with or without on-line payment, continues to increase, while the proportion receiving orders has declined. During 2001–02, 25% of businesses placed orders via the Internet or web, compared to 20% during 2000–01. The proportion of businesses receiving

orders for goods and services via the Internet or web was 6% during 2001–02, declining from 9% in 2000–01.

While the number of businesses receiving orders via the Internet decreased, the estimated value of income earned from these orders continued to grow. However, there are both conceptual and measurement issues which mean that the estimate of income for orders placed over the Internet or web should be treated with caution. Internet income earned by Australian businesses increased by \$1.9b from \$9.4b in 2000–01 to \$11.3b in 2001–02. The value of this Internet income represented 0.8% of total business income during 2001–02. This increase compares to an increase of \$4.3b between 1999–2000 and 2000–01, when Internet income increased from \$5.1b to \$9.4b. Income from orders received via the Internet or web was more concentrated in larger businesses in 2001–02 than during 2000–01, with those businesses employing 100 or more persons earning 81% of the total Internet income in 2001–02, compared with 58% in 2000–01.

## Business IT security

Only 14% of businesses with a computer reported having no IT security measures in place at June 2002, with 86% reporting some form of IT security. The most common form of IT security reported was anti-virus software or a virus scanner (80%). The next most common form of IT security was physical security (34%), followed by authentication software or hardware (22%) and the use of a firewall (19%).

Of those businesses using a computer, 59% reported that they did not experience a security incident or breach during 2001–02, while 41% reported experiencing some form of breach or incident. A virus was the most common IT security incident or breach reported by businesses using a computer (38%), followed by a trojan or worm (15%). The level of unauthorised network access was small, with only 2% of businesses reporting this form of IT security breach. Caution should be exercised in interpreting these percentages, as businesses may have been reluctant to report security breaches.

## Farm use of IT

There has been steady growth in the use of IT by farms in Australia (table 23.14). At June 2000, 58% of Australian farms with an estimated value of agricultural operations (EVAO) of \$5,000 or more used a computer, compared with 49% at March 1999 and 40% at March 1998.

An estimated 34% of farms in Australia used the Internet at June 2000, compared with 18% at March 1999 and 11% at March 1998. Although fewer farms used the Internet than used a computer at June 2000, the 91% increase in the number of farms using the Internet over the 15 months to June 2000 far exceeded the percentage growth in the use of computers for the same period.

At June 2000:

- the Northern Territory showed the highest proportion of farms using a computer (71%) and the highest proportion of farms using the Internet (49%)
- New South Wales showed the lowest proportion of farms using a computer (53%) and the lowest proportion of farms using the Internet (31%)
- the poultry farming industry showed the highest proportion of farms using a computer (72%) and the highest proportion of farms using the Internet (45%)
- the grain, sheep and beef cattle farming industry showed the lowest proportion of farms using a computer (55%) and the lowest proportion of farms using the Internet (31%)

- there was a strong relationship between farm size, as measured by the EVAO, and the use of a computer and the Internet. As farm size increased so did the proportion of farms using a computer and the Internet. For example, 68% of farms with an EVAO of \$1m or more used the Internet, compared with 25% of those with an EVAO less than \$50,000.

### Household use of IT

The percentage of Australian households with access to a computer at home has increased steadily from 44% in 1998 to 61% in 2002 (graph 23.15). The percentage of Australian households with access to the Internet at home has increased strongly, rising from 16% in 1998 to 46% in 2002.

### Characteristics of households with home Internet access

Households in metropolitan areas, with children under 15 years of age and in the Australian Capital Territory were more likely to have access to computers and the Internet at home (table 23.16).

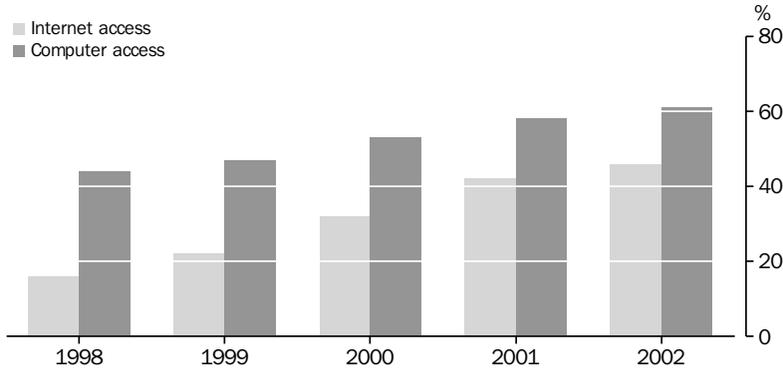
**23.14 FARMS USING A COMPUTER AND THE INTERNET(a)**

	NSW %	Vic. %	Qld %	SA %	WA %	Tas. %	NT %	ACT %	Aust. %
<b>June 2000</b>									
Farms using a computer	53	58	58	64	68	57	71	70	58
Farms using the Internet	31	33	32	40	40	35	49	42	34
<b>March 1999</b>									
Farms using a computer	49	49	45	53	59	49	65	64	49
Farms using the Internet	19	17	16	19	18	22	31	26	18
<b>March 1998</b>									
Farms using a computer	40	37	37	43	49	36	52	55	40
Farms using the Internet	12	10	10	12	10	12	22	20	11

(a) Data were collected in the Agricultural Commodity Survey, reference periods March 1998, March 1999 and June 2000.

Source: *Use of Information Technology on Farms, Australia, June 2000 (8150.0)*.

### 23.15 HOUSEHOLD COMPUTER AND INTERNET ACCESS



Source: Household Use of Information Technology, Australia, 2001-02 (8146.0).

### 23.16 HOUSEHOLD COMPUTER AND INTERNET ACCESS

	Computer access(a)					Internet access(a)				
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
	%	%	%	%	%	%	%	%	%	%
Households										
Without children under 15	36	39	44	51	53	14	18	28	37	40
With children under 15	63	65	71	77	79	20	29	43	54	59
State or territory										
New South Wales	44	45	52	59	61	18	22	32	45	48
Victoria	46	50	56	61	62	15	23	34	43	46
Queensland	43	44	50	55	57	15	20	31	40	42
South Australia	41	45	49	56	58	12	19	29	37	43
Western Australia	44	50	55	58	63	15	22	34	41	48
Tasmania	36	40	45	50	51	10	18	25	31	35
Northern Territory	42	55	54	52	62	16	30	35	38	48
Australian Capital Territory	64	66	70	77	78	27	34	46	60	60
Region										
Metropolitan areas	48	51	55	62	65	19	25	36	47	50
Ex-metropolitan areas	38	40	48	52	54	10	15	26	34	39
All households	44	47	53	58	61	16	22	32	42	46

(a) Proportions are of all households in each category.

Source: Household Use of Information Technology, Australia, 2001-02 (8146.0).

### Characteristics of adult Internet users

The number of adults using the Internet continues to grow rapidly; rising from 31% of all persons 18 years and over in 1998 to 58% in 2002. Strong growth has occurred in all age groups across the years. The likelihood that a person uses the Internet decreases with age.

During 2002, home was the site where adults were most likely to use the Internet (table 23.17). This was particularly the case for those adults with incomes below \$40,000. Those adults with incomes above \$40,000 were considerably more likely to use the Internet at work than those with lower incomes. Adults aged 18-24 years were most likely to use the Internet at sites other than home or work.

**23.17 ADULTS ACCESSING THE INTERNET(a), Main characteristics — 2002**

	Site of Internet access(b)			
	Home %	Work %	Other sites %	Any site %
Age group (years)				
18–24	57	28	69	84
25–34	52	42	49	78
35–44	55	39	29	69
45–54	45	36	19	58
55–64	32	21	12	42
65 or over	10	2	5	13
Personal income				
\$0–\$39,999	37	20	29	52
\$40,000–\$79,999	61	59	36	80
\$80,000 or over	76	78	40	89
All adults	43	30	31	58

(a) Proportions are of all persons in each category. (b) Persons may have accessed the Internet at only one or any number of sites.

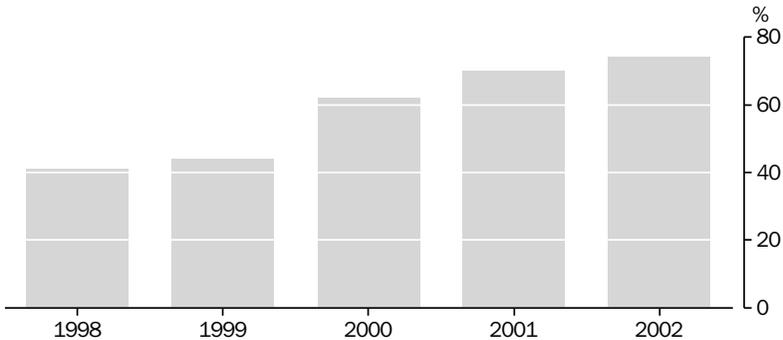
Source: Household Use of Information Technology, Australia, 2001–02 (8146.0).

Over the period 1998 to 2002, home Internet use by adults has increased as a percentage of total use (graph 23.18). In 1998, 59% of those who used the Internet did not use the Internet at home, whereas in 2002 only 26% of those who used the Internet did not use the Internet at home.

**Internet purchasing**

During 2002, 2.2 million or 15% of Australian adults purchased or ordered goods or services via the Internet for private use (graph 23.19). This represents an increase of 34% in the number of Internet shoppers from 2001. Of Internet users, just over one in four (26%) were also Internet shoppers. The largest increase in the percentage of Internet shoppers between 2000 and 2002 occurred in the age group 25–34 years.

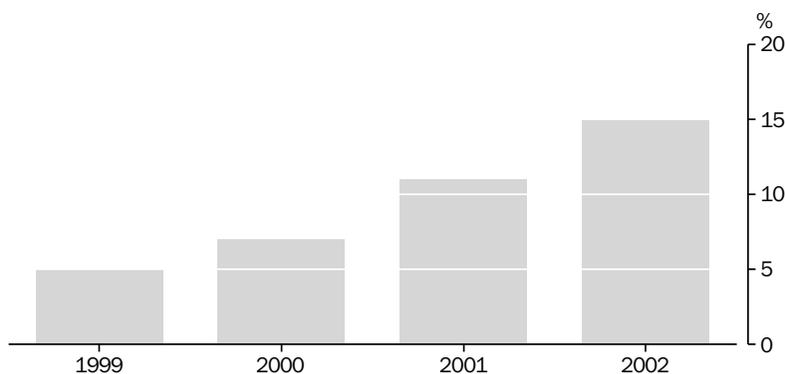
**23.18 PROPORTION OF HOME INTERNET USE(a)**



(a) As a proportion of total Internet use by persons 18 years and over.

Source: Household Use of Information Technology, Australia, 2001–02 (8146.0).

### 23.19 ADULTS PURCHASING/ORDERING VIA INTERNET FOR PRIVATE USE



Source: *Household Use of Information Technology, Australia, 2001–02 (8146.0)*.

#### Accessing government services via the Internet

More than one in five (21%) adult Australians accessed government services via the Internet for private purposes in 2002, compared with one in six (or 16%) in 2001 (graph 23.20). For those adults who accessed government services in 2002 for private purposes, 49% did so to pay bills (compared to 38% in 2001). The next three most popular services accessed were taxation information, employment/unemployment information and submitting tax returns, each being accessed by 20% of adults who accessed government services in 2002.

#### Government use of IT

During 1999–2000, government organisations of all levels spent an estimated \$4.3b, or 5% of total government operating expenditure, on ICT. By level of government, Australian Government expenditure on ICT was 7% of total Australian Government operating expenditure, state/territory expenditure on ICT was 4% of total state and territory operating expenditure, and local government expenditure on ICT was 2% of total local government operating expenditure.

Australian Government departments and agencies accounted for just under half (47%) of the total government expenditure on ICT. State and

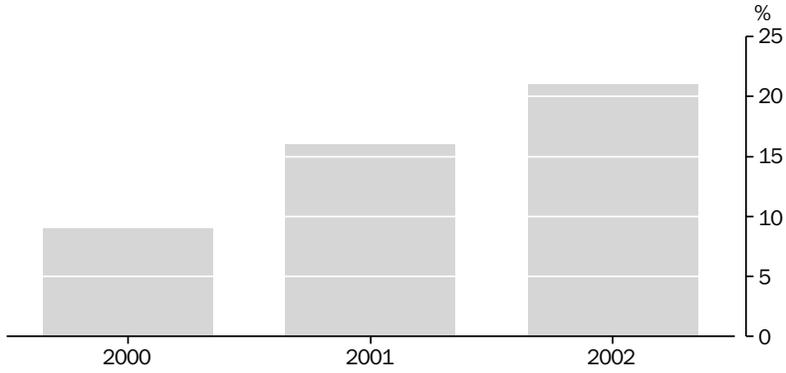
territory departments and agencies accounted for slightly less (45%) and local government accounted for the balance (8%).

ICT outsourcing expenses in 1999–2000 were \$1,168m, or 27% of the total ICT expenditure by government organisations. While the ratio of ICT outsourcing expenses to total ICT operating expenses showed little variation between the Australian Government, and state and territory governments, (29% and 27% respectively), a ratio of only 15% was reported by local government.

During 1999–2000, total ICT operating expenses per employee were \$4,800. However, there was considerable variation across the three levels of government, with total ICT operating expenses estimated at \$9,500 per Australian Government employee, \$3,600 per state/territory government employee and \$2,300 per local government employee.

ICT employees accounted for only 2% of total employment of government organisations at the end of June 2000. Australian Government departments and agencies had the highest proportion of ICT employees to total employment (4%), compared to 1% for both state and territory, and local government departments and agencies.

**23.20 ADULTS ACCESSING GOVERNMENT SERVICES VIA INTERNET**



Source: *Household Use of Information Technology, Australia, 2001-02* (8146.0).

## Bibliography

### ABS publications

*Australian System of National Accounts* (5204.0)

*Business Operations and Industry Performance, Australia* (8140.0)

*Business Use of Information Technology, Australia* (8129.0)

*Government Use of Information Technology, Australia* (8119.0)

*Household Use of Information Technology, Australia* (8146.0)

*Information Technology, Australia* (8126.0)

*Internet Activity, Australia* (8153.0)

*Measures of a Knowledge-based Economy and Society, Australia* (1377.0)

*Use of Information Technology on Farms, Australia* (8150.0)

### Other publications

Australian Postal Corporation trading as: Australia Post, *Annual Report*

National Office for the Information Economy, *Current State of Play — A quarterly information economy statistical report* (available from its web site <<http://www.noie.gov.au>>)

### Web sites

Australian Bureau of Statistics, <<http://www.abs.gov.au>>, for Information Technology Statistics Theme Page, select *Themes* from menu on the home page

Australian Communications Authority (ACA), <<http://www.aca.gov.au>>. The ACA is responsible for regulating telecommunications and radio communications. It licenses telecommunications carriers and monitors service performance and quality.

Australian Competition and Consumer Commission (ACCC), <<http://www.accc.gov.au>>. The ACCC administers the *Trade Practices Act 1974* (Cwlth) and the *Prices Surveillance Act 1983* (Cwlth). Its telecommunications group has prime responsibility for administering the Commission's functions for competition and economic regulation of telecommunications.

Australian Information Industries Association (AIIA), <<http://www.aiia.com.au>>. The AIIA is responsible for leading and representing the information industry to maximise the potential of the Australian economy.

Australian Government Department of Communications, Information Technology and the Arts (DCITA), <<http://www.dcita.gov.au>>. DCITA is responsible for providing strategic advice and professional support to the Australian Government on a wide range of significant policy areas including broadcasting and on-line regulation, post, telecommunications and information and communications technology.

National Office for the Information Economy (NOIE), <<http://www.noie.gov.au>>. NOIE is Australia's leading Australian Government agency for information economy issues. It is responsible for developing, overseeing, and coordinating Australian Government policy on electronic commerce, online services and the Internet.

Telecommunications Industry Ombudsman (TIO), <<http://www.tio.com.au>>. The TIO is an industry funded scheme that is responsible for resolving disputes between telecommunications companies, small business and residential customers.

# Use of information technology by Aboriginal and Torres Strait Islander peoples

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Information on the use of computers and the Internet by Australians was collected in the 2001 Census of Population and Housing.

Data released from the census provides an opportunity to explore the use of information technology (IT) by specific population groups. This article focuses on the Indigenous population of Australia and includes comparisons with the non-Indigenous population.

The 2001 census counted 410,000 Indigenous persons in Australia on 7 August 2001 (2.2% of the total population). The age distribution of the Indigenous population differs from that of the non-Indigenous population with a comparatively greater proportion of the Indigenous population aged under 20 years and lower proportions in age ranges above 40 years. These age structure differences should be borne in mind when assessing IT use comparisons made between the Indigenous and non-Indigenous populations.

## All persons

The first part of this article focuses on the total Indigenous and non-Indigenous populations (excluding those people for whom Indigenous status was unknown). Overall, there was a marked difference in the use of IT between the Indigenous and non-Indigenous populations in the week preceding the 2001 census (table S23.3), as highlighted by the following statistics:

- home computer use — 18% of Indigenous population, 44% of non-Indigenous population
- home Internet use — 9% of Indigenous population, 29% of non-Indigenous population
- Internet use overall — 16% of Indigenous population, 39% of non-Indigenous population.

Generally, the difference in use of IT between males and females within both populations was small.

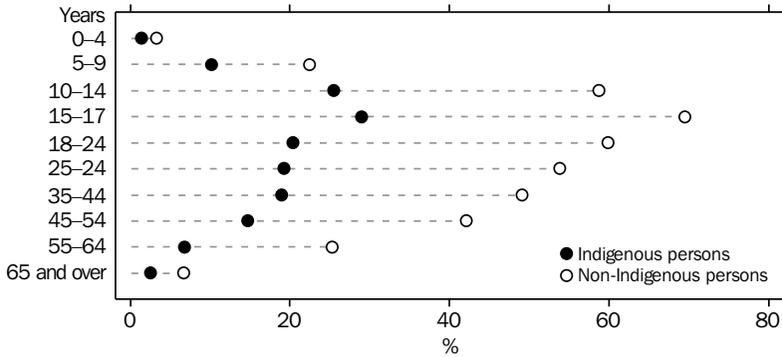
Slightly more Indigenous females (19%) than Indigenous males (17%) had used a computer at home. For the non-Indigenous population, more males (46%) than females (43%) had used a computer at home. This was also the situation with use of the Internet at home or elsewhere, with Indigenous females (17%) having a slightly higher rate of use than Indigenous males (15%).

Rates of IT use were higher among young people than older people. Within both the Indigenous and non-Indigenous populations, 15–17 year olds were the most likely to use IT. However, the difference in the rate of IT use among Indigenous and non-Indigenous youth in this age group was substantial. About one-quarter (28%) of Indigenous 15–17 year olds had used a computer at home, compared with three-quarters (75%) of non-Indigenous teenagers in this age group. The rate of Internet use among Indigenous 15–17 year olds was 29%, compared with 70% of non-Indigenous 15–17 year olds. Similar differences between Indigenous and non-Indigenous rates of IT use were apparent for other age groups (graph S23.1).

While the use of IT by the non-Indigenous population generally remained high across the various geographic areas, they were markedly lower for Indigenous persons living in Remote and Very Remote areas (graph S23.2). Indigenous persons living in Major Cities were the most likely to have used IT. However, their rates of use were around half that of non-Indigenous persons. Of the 123,000 Indigenous persons in Major Cities:

- 28% had used a computer at home
- 15% had used the Internet at home
- 25% used the Internet overall.

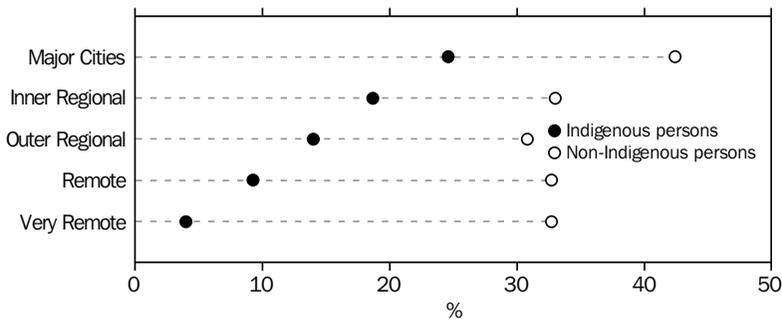
**S23.1 PROPORTION OF PERSONS USING THE INTERNET(a),  
By age group — August 2001**



(a) In the week preceding the 2001 census.

Source: ABS data available on request, 2001 Census of Population and Housing.

**S23.2 PROPORTION OF PERSONS USING THE INTERNET(a),  
By Remoteness Area — August 2001**



(a) In the week preceding the 2001 census.

Source: ABS data available on request, 2001 Census of Population and Housing.

Indigenous persons living in Very Remote areas were least likely to have used IT. Of the 71,100 Indigenous persons in Very Remote areas:

- 3% had used a computer at home (38% for non-Indigenous persons)
- 1% had used the Internet at home (23% for non-Indigenous persons)
- 4% had used the Internet overall (33% for non-Indigenous persons).

Indigenous persons in the Northern Territory and Western Australia recorded the lowest rates of IT use on a state/territory basis. However, it should be noted that these

jurisdictions have a high proportion of their Indigenous population in Remote and Very Remote areas.

**Persons 18 years and over**

The second part of this article focuses on the 18 years and over Indigenous and non-Indigenous populations (table S23.6). The 2001 census counted 222,400 Indigenous persons (54% of the Indigenous population) who were 18 years or over on census night.

Generally, the proportion of persons using IT increased with the level of income earned. This was the case for both the Indigenous and non-Indigenous populations (graph S23.4).

Indigenous persons with income less than \$10,400 per year were the least likely to have used IT. Of the 82,200 Indigenous persons in this income bracket:

- 11% had used a computer at home (35% for non-Indigenous persons)
- 6% had used the Internet at home (24% for non-Indigenous persons)
- 10% had used the Internet overall (29% for non-Indigenous persons).

Within the Indigenous and non-Indigenous populations, IT use was highest for employed persons (i.e. employees, employers, own account workers and contributing family workers), followed by unemployed persons and then persons not in the labour force (graph S23.5).

Of the 88,700 Indigenous employees:

- 25% had used a computer at home
- 15% had used the Internet at home
- 28% had used the Internet overall.

### S23.3 USE OF IT, By Indigenous and non-Indigenous peoples, All persons — August 2001

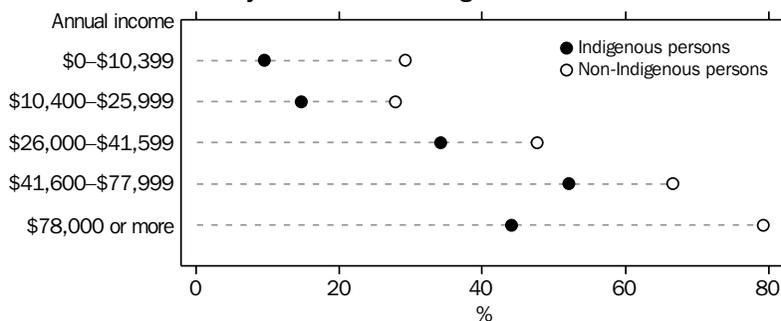
Characteristics	Persons(a)		Proportion of persons					
			Using a computer at home		Using the Internet at home		Using the Internet overall	
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
	no.	no.	%	%	%	%	%	%
All persons	410 003	17 591 489	18.0	44.1	8.6	29.2	15.9	39.0
Males	202 954	8 686 887	17.3	45.7	8.5	31.1	15.0	40.7
Females	207 049	8 904 602	18.6	42.6	8.8	27.3	16.9	37.4
Age group (years)								
0–4	52 681	1 122 807	5.5	15.7	1.1	3.0	1.4	3.3
5–9	56 483	1 224 887	19.2	53.7	5.0	17.1	10.2	22.5
10–14	51 586	1 236 808	27.9	72.8	12.2	45.5	25.5	58.7
15–17	26 712	745 578	28.4	75.2	15.3	56.1	29.0	69.5
18–24	48 508	1 650 538	17.4	55.5	10.2	42.0	20.4	59.9
25–34	63 612	2 561 666	17.9	48.9	10.6	36.5	19.3	53.8
35–44	50 424	2 722 109	20.9	53.4	11.7	37.8	19.0	49.1
45–54	32 234	2 452 619	17.3	45.4	9.4	32.0	14.7	42.1
55–64	16 146	1 678 516	9.4	29.7	4.8	20.1	6.8	25.3
65 and over	11 437	2 195 961	3.7	10.4	1.6	6.0	2.5	6.7
Remoteness Areas(b)								
Major Cities	123 008	11 752 990	27.7	46.3	15.0	32.0	24.6	42.4
Inner Regional	81 832	3 619 547	22.8	40.9	10.5	24.5	18.7	33.0
Outer Regional	91 979	1 735 459	16.0	38.1	6.6	22.3	14.0	30.8
Remote	33 963	254 846	10.2	39.6	3.8	23.5	9.3	32.7
Very Remote	71 065	82 866	2.7	37.8	0.9	22.7	4.0	32.7
State/territory(c)								
NSW	120 047	5 916 340	21.7	43.3	10.6	29.2	17.7	38.3
Vic.	25 059	4 444 048	28.1	44.7	14.9	29.4	25.8	39.8
Qld	112 575	3 278 044	17.8	44.0	8.3	29.0	15.5	38.0
SA	23 377	1 401 649	17.1	42.1	7.3	26.6	17.1	36.5
WA	58 467	1 699 189	12.6	46.1	5.6	30.6	12.0	40.8
Tas.	15 856	428 426	31.1	38.5	15.0	23.1	27.7	34.8
NT	50 845	125 686	5.4	45.7	2.6	30.7	6.4	44.0
ACT	3 548	295 912	41.3	58.4	24.2	41.1	39.6	56.4

(a) Excludes persons whose Indigenous status was inadequately described and not stated. (b) Excludes persons whose location was not stated or was inadequately described, and those classified as Migratory. For a description of Remoteness Areas see 'Statistical Geography, Volume 1: Australian Standard Geographical Classification (ASGC), 2001' (1216.0).

(c) Excludes persons classified to Other Territories.

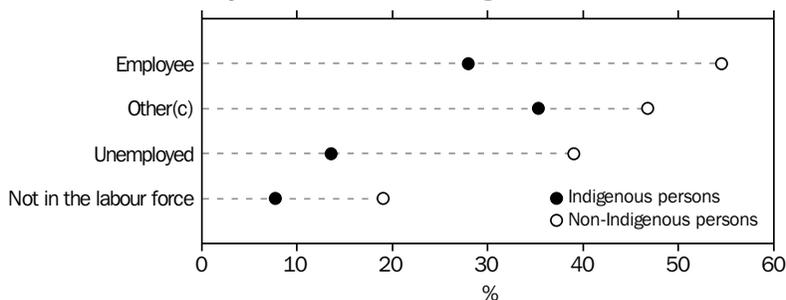
Source: ABS data available on request, 2001 Census of Population and Housing.

**S23.4 PROPORTION OF PERSONS(a) USING THE INTERNET(b),  
By annual income — August 2001**



(a) All persons aged 18 years and over. (b) In the week preceding the 2001 census.  
Source: ABS data available on request, 2001 Census of Population and Housing.

**S23.5 PROPORTION OF PERSONS(a) USING INTERNET(b),  
By labour force status — August 2001**



(a) All persons aged 18 years and over. (b) In the week preceding the 2001 census.  
(c) Employers and self employed persons.  
Source: ABS data available on request, 2001 Census of Population and Housing.

People with a non-school qualification had a higher rate of IT use than those without a qualification. Of the 7,200 Indigenous persons with a bachelor degree or higher qualification:

- 60% had used a computer at home
- 40% had used the Internet at home
- 67% had used the Internet overall.

Their rates of IT use were around 10 percentage points lower than those of non-Indigenous persons with the same level of qualification, but more than four times higher than Indigenous persons without a qualification. Of the 156,600 Indigenous persons without a non-school qualification:

- 13% had used a computer at home (33% for non-Indigenous persons)

- 7% had used the Internet at home (23% for non-Indigenous persons)
- 13% had used the Internet overall (30% for non-Indigenous persons).

Among employed people, those in highly skilled occupations (e.g. managers, administrators and professionals) were the most likely to have used IT. Of the 14,800 Indigenous persons in highly skilled occupations:

- 45% had used a computer at home
- 29% had used the Internet at home
- 52% had used the Internet overall.

Their rates of IT use were around 20 percentage points lower than those of non-Indigenous persons in the highest skilled occupations, but twice as high as Indigenous persons in occupations requiring the lowest skill level (e.g. intermediate and elementary clerical, sales and service workers, production and transport workers and labourers). Of the 56,000 Indigenous persons in these occupations:

- 20% had used a computer at home (43% for non-Indigenous persons)
- 11% had used the Internet at home (30% for non-Indigenous persons)
- 21% had used the Internet overall (42% for non-Indigenous persons).

### S23.6 USE OF IT, By Indigenous and Non-Indigenous peoples, 18 years and over — August 2001

Characteristics	Persons(a)		Proportion of persons					
			Using a computer at home		Using the Internet at home		Using the Internet overall	
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
	no.	no.	%	%	%	%	%	%
All persons aged 18 years and over	222 361	13 261 409	17.0	41.2	9.7	29.5	17.0	40.0
Annual individual income(b)								
\$0-\$10,399	82 189	3 197 824	11.2	34.5	6.0	24.3	9.6	29.3
\$10,400-\$25,999	74 779	4 175 909	15.9	32.2	8.3	21.6	14.7	27.9
\$26,000-\$41,599	29 402	2 716 811	29.3	45.8	17.8	32.8	34.2	47.7
\$41,600-\$77,999	12 632	1 976 411	44.9	60.9	29.5	45.8	52.1	66.6
\$78,000 or more	2 390	565 861	41.5	71.9	30.4	58.1	44.1	79.3
Labour force status(c)								
Employee	88 675	6 452 939	24.8	51.6	14.9	37.6	28.0	54.5
Other employed(d)	6 565	1 451 041	42.8	53.0	27.7	38.7	35.3	46.8
Unemployed	22 636	581 790	15.0	42.1	7.3	29.5	13.6	39.0
Not in the labour force	97 117	4 605 625	9.7	24.1	5.0	16.1	7.7	19.0
Occupation skill level(e)								
High	14 763	2 249 808	44.8	67.6	29.0	51.2	52.4	72.8
Medium	19 979	2 239 762	32.0	49.8	20.0	36.0	35.6	51.1
Low	56 033	3 264 019	19.9	42.9	11.4	30.2	20.6	41.5
Highest non-school qualification(f)								
Bachelor degree or above	7 218	1 902 449	60.0	70.6	40.3	54.3	67.0	76.3
Advanced diploma or degree	6 190	880 421	42.9	60.3	26.8	44.3	47.3	60.3
Certificate	22 998	2 291 365	30.5	42.5	18.2	29.7	31.1	39.4
No qualification	156 631	7 080 649	13.4	32.6	7.3	22.6	12.9	30.2

(a) Excludes persons whose Indigenous status was inadequately described and not stated. (b) Excludes persons with negative income and income not stated. (c) Excludes persons whose Labour force status was not stated. (d) Includes employer, own account worker, contributing family worker. (e) Employed persons only, excluding those persons whose skill levels were inadequately described. Criteria for determining Occupation skill level are outlined in 'ASCO — Australian Standard Classification of Occupations, Second Edition, 1997' (1220.0). (f) Excludes persons whose qualifications were inadequately described.

Source: ABS data available on request, 2001 Census of Population and Housing.



## ENVIRONMENT

Australia's environment is unique, with an exceptional number of species, and a high proportion of endemic species. The marine area is one of the world's largest and home to the most diverse mangrove and seagrass ecosystems, and one of the largest areas of coral reef.

The chapter provides information on people's views and behaviour in relation to the environment. It notes the increase in household recycling during the 1990s. In 2000, nearly three-quarters of Australia's workforce and students drove a vehicle on their journey to work or study — an unchanged proportion from that in 1996. Data are presented on the adoption of energy saving measures by households. The section concludes with information relating to household water supply, people's view of drinking water quality, and water conservation methods adopted by households.

One of the major land degradation issues presently facing Australia is discussed in *Salinity and land management*. Air pollution is the greatest environmental issue concerning Australians. The section *Air pollution* examines both outdoor and indoor pollution, with a particular focus on ozone and fine particle pollution.

Australia experiences many of nature's more extreme and destructive climatic phenomena, particularly droughts, floods, tropical cyclones, severe storms and bushfires. Severe drought conditions have been experienced throughout much of Australia recently. The section *Drought* focuses on rainfall deficiencies as the primary indicator of drought and provides rainfall information for the height of the drought, the period July 2002 to June 2003. The bushfires which occurred mainly at the end of 2002 and the beginning of 2003 were among the most protracted and extensive experienced since European settlement. The section *Bushfires* outlines the causes of bushfires and describes some of Australia's most destructive fires over the years. It concludes with information relating to the 2002–03 bushfires and the damage resulting from them.

The Australian national accounts are sometimes criticised for including in the overall value of economic production in a given period, the value of goods and services produced and the income generated through the use of environmental assets but not reflecting the economic cost of depleting environmental assets or the damage that arises from economic activity. The section *Environmental assets* examines how the environment is treated in the Australian national accounts and provides experimental annual estimates whereby the accounts are adjusted for depletion of assets.

## Environmental views and behaviour

### Household waste management

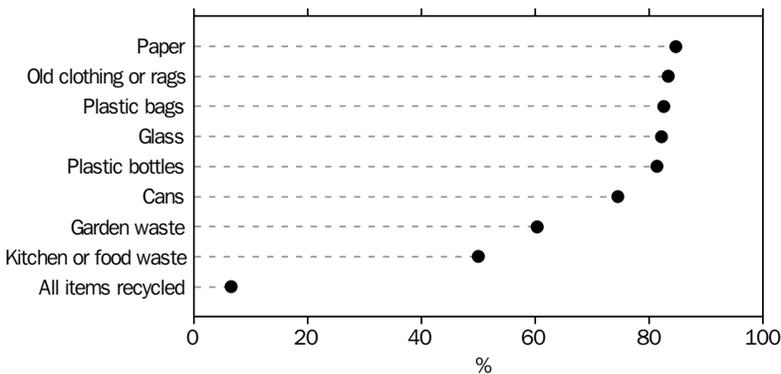
Households generate wastes, some of which are hazardous, and the recycling of household wastes and the proper disposal of hazardous waste are important environmental issues. Recycling conserves resources, reduces environmental pollution and reduces the volume of garbage going to landfill, while the proper disposal of hazardous waste prevents toxic materials from entering the environment where they can potentially impact on ecosystems and on humans.

Household recycling in Australia has increased during the past decade. In 1992 around 85% of people recycled at least one item of their

household waste and by 2000, nearly all Australian households (97%) were doing this. Paper, old clothing, plastic bags and glass were the items most commonly recycled (graph 24.1).

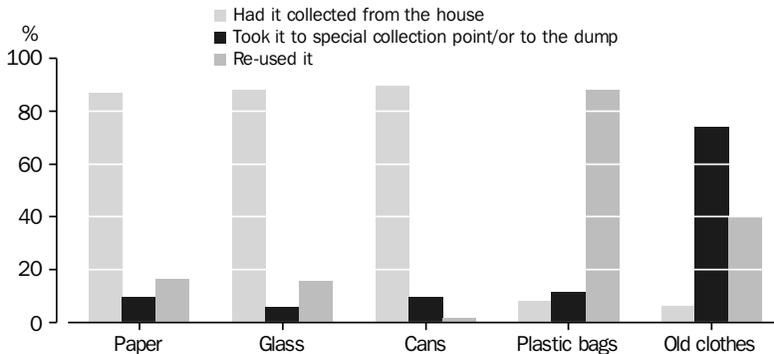
A collection service from dwellings was the most common means of recycling household materials for paper (87% of households), glass (88%), cans and plastic bottles (both 89%) (graph 24.2). For plastic bags, reuse was the most popular option. Around two-thirds of Australian households composted or mulched their kitchen or food waste (67%) and garden waste (71%). Old clothes or rags were usually taken to a central collection point such as a charity depot (73% of households).

**24.1 HOUSEHOLDS INVOLVED IN RECYCLING, Items recycled — March 2000**



Source: *Environmental Issues: People's Views and Practices, 2000 (4602.0)*.

**24.2 METHODS OF RECYCLING — March 2000**



Source: *Environmental Issues: People's Views and Practices, 2000 (4602.0)*.

The percentage of households disposing of hazardous waste via the usual garbage collection service has increased from 62% in 1996 to 85% in 2000. Fewer households took their household hazardous waste to the dump or a central collection point in 2000 (21%) than in 1996 (30%). These changes were despite the fact that households were more aware of the availability of facilities in their area for the safe disposal of household hazardous waste (31% in 1996 and 37% in 2000).

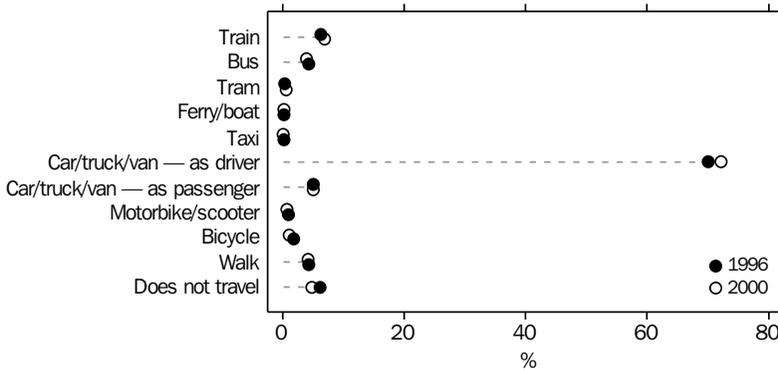
### Transport use

The majority of Australia's workforce and students (72% in 2000) drove a car, truck, or van on their journey to work or study (graph 24.3). About 12% used public transport to get to work or study,

mainly on trains and buses (7% and 4% respectively). Use of public transport was highest in New South Wales (17%) and Victoria (12%), and by people between the age of 18 and 24 (23%). The three main reasons given for using public transport to travel to work or study were: not owning a car (34%); parking problems (32%); and proximity of home to public transport (29%).

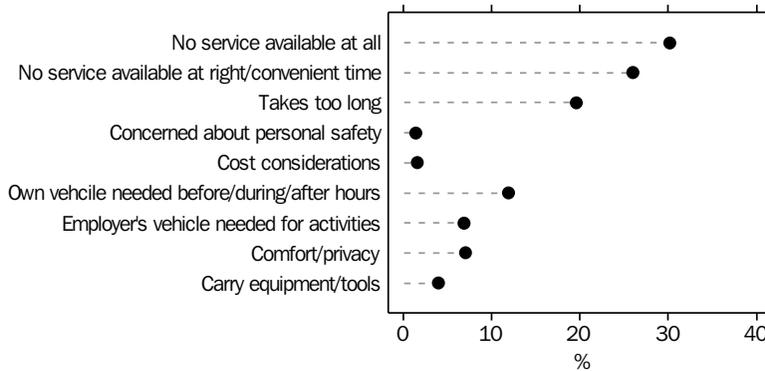
The two main reasons for not using public transport were a lack of access to public transport (30%) and the non-availability of transport service at the right or convenient time (26%) (graph 24.4). Other reasons given were excessive travel time (20%) and the need for a vehicle before, during or after work or study hours (12%). Personal safety (1%) was hardly an issue in the non-use of public transport.

**24.3 MAIN FORM OF TRANSPORT TO WORK OR STUDY**



Source: *Environmental Issues: People's Views and Practices, 2000 (4602.0)*.

**24.4 REASONS FOR NOT USING PUBLIC TRANSPORT — March 2000**



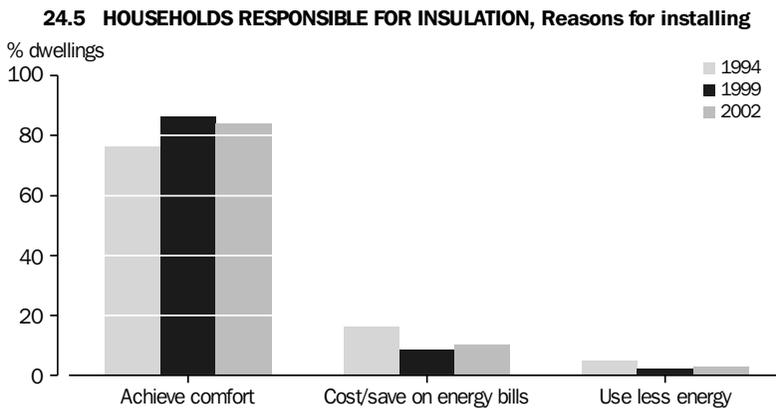
Source: *Environmental Issues: People's Views and Practices, 2000 (4602.0)*.

## Energy conservation measures

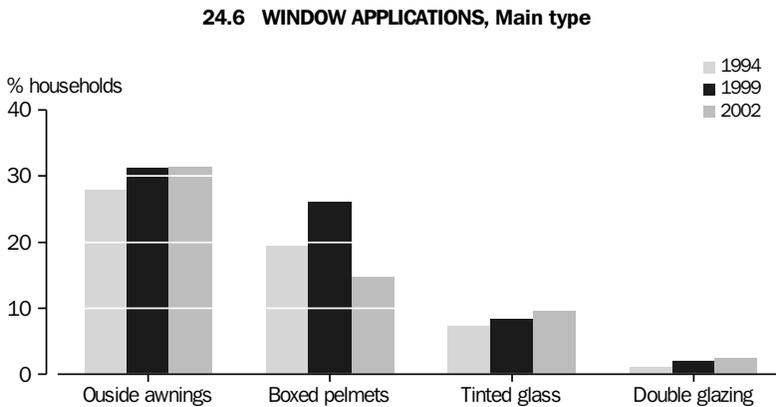
There has been widespread adoption of some energy saving measures in Australian households (graph 24.5). These seem to have been motivated by lifestyle choices and a desire to reduce energy costs, rather than any environmental benefits. For example, there has been a modest increase in the use of insulation in dwellings, from 52% in 1994 to 58% in 2002, but the main reason given for insulating dwellings was to achieve comfort all year round (84% of people who were responsible for insulating their dwellings). Saving energy was not high on the list of reasons for installing insulation and only 3% of the respondents said

this was a factor. The main obstacle to installing insulation was cost and this was reported by 24% of dwellings without insulation.

Almost half of all Australian households (49%) used at least one measure to regulate heat through windows (graph 24.6). Outside awnings and/or shutters were the principal form of window protection applied in over 30% of dwellings in Australia, with the highest rates of use in South Australia (42% of dwellings) and Victoria (39%). Boxed pelmets were most used in Victoria (22%) and Tasmania (21%), while tinted glass or solar guarding were mostly applied in Queensland (17%) and Northern Territory (10%).



Source: *Environmental Issues: People's Views and Practices, 2002 (4602.0)*.



Source: *Environmental Issues: People's Views and Practices, 2002 (4602.0)*.

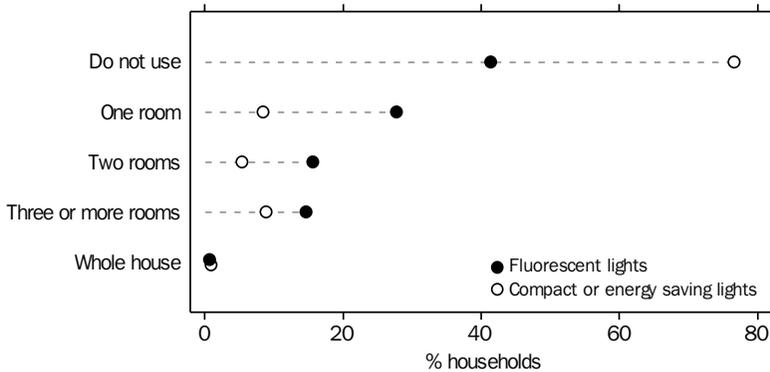
Fluorescent lights were used in at least one room of a dwelling by close to 60% of Australian households (graph 24.7). This represented a marginal increase from 1999, although there were notable declines in usage in the Australian Capital Territory (from 55% in 1992 to 48% in 2002) and Tasmania (from 49% in 1992 to 42%). Around 23% of Australian households had at least one room illuminated by compact or energy saving lights in 2002.

More households in Australia used cold water in washing machines in 2002 than in 1994 or 1999 (graph 24.8). In the most recent survey (2002) two-thirds of the respondents (68%) reported

they usually use cold water in washing machines, an increase from 61% in 1994 and from 65% in 1999.

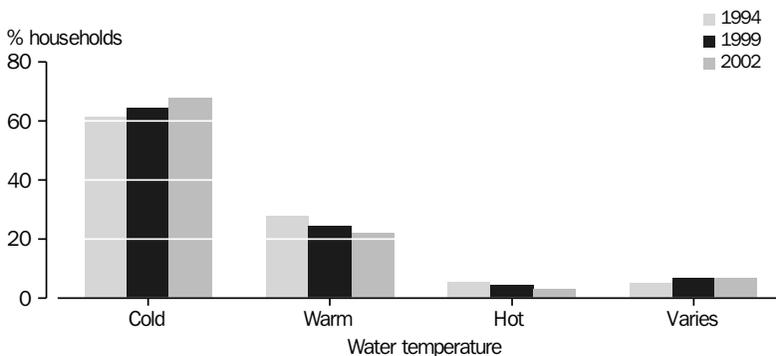
Solar energy was used mainly for heating water and was utilised by 4% of Australian households in 2002. The Northern Territory was the largest consumer of solar energy with more than half of its households using it to heat water. Western Australia was the second largest user of solar energy (16%), although there was a decline of five percentage points between 1994 and 2002. Around 92% of solar water heaters were boosted by electricity.

**24.7 USE OF FLUORESCENT AND ENERGY SAVING LIGHTS — March 2002**



Source: *Environmental Issues: People's Views and Practices, 2002 (4602.0)*.

**24.8 DWELLINGS WITH WASHING MACHINES, Temperature of water used**



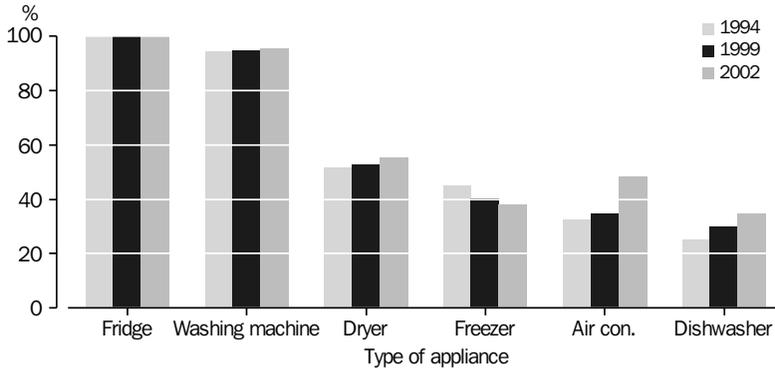
Source: *Environmental Issues: People's Views and Practices, 2002 (4602.0)*.

## Household appliances

Almost all households in Australia have a refrigerator (99.7%) and a washing machine (94.2%) (graph 24.9). Since 1994, there has been a rise in acquisition of almost all types of household appliances in Australia, except for separate freezers which have declined from 45% in 1994 to 38% in 2002. The most significant rise was in the possession of air-conditioners, from 33% in 1994 to 48% in 2002.

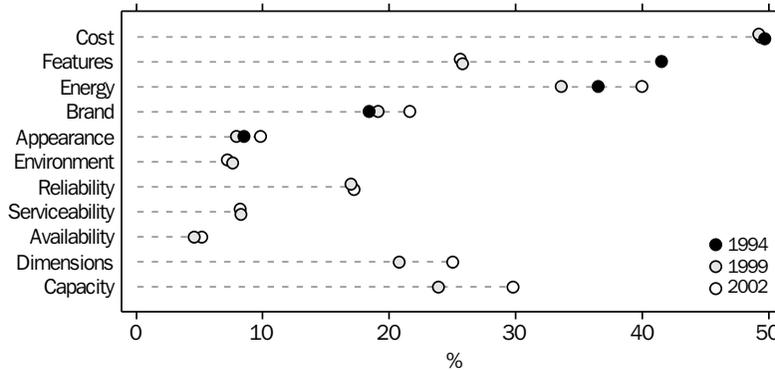
Cost, energy rating efficiency and capacity were the three main factors considered by households across Australia in buying or replacing appliances (49%, 40% and 30% respectively) (graph 24.10). Through the years, more emphasis has been placed on energy rating when buying appliances but environmental considerations were hardly a factor in buying appliances (it ranked tenth of the eleven categories in the survey; availability being the last ranked category).

**24.9 WHITE GOOD APPLIANCES IN DWELLINGS**



Source: *Environmental Issues: People's Views and Practices, 2002 (4602.0)*.

**24.10 FACTORS CONSIDERED IN BUYING APPLIANCES**



Source: *Environmental Issues: People's Views and Practices, 2002 (4602.0)*.

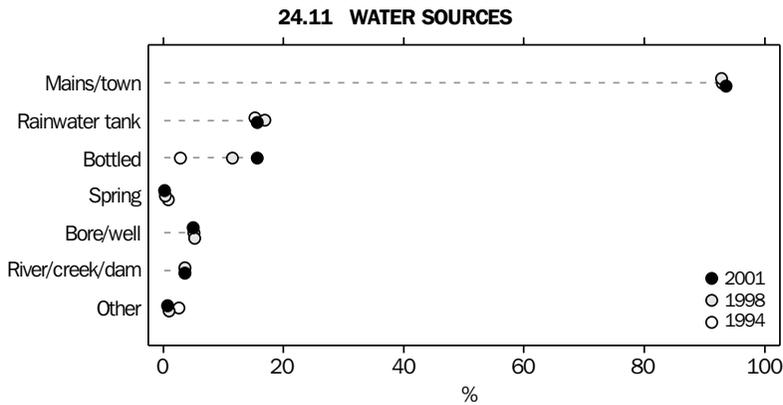
## Water supply, quality and conservation

### Water supply

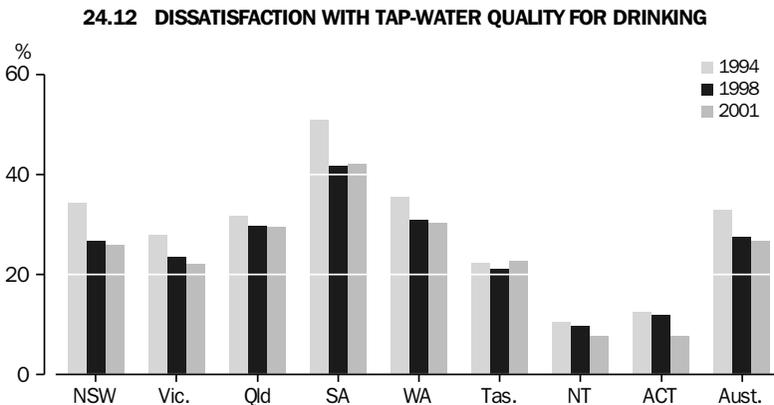
Over nine in ten (94%) Australian households received their domestic water supply from mains or town water suppliers in 2001 (graph 24.11). Mains water was connected to all households in the Australian Capital Territory. In Tasmania, 87% of the households were connected to mains water supply, the lowest level of any state or territory. Rainwater tanks and bottled water were the next most important sources of water (both 16%). South Australians were the most likely to depend on these sources of water (rainwater 52% of households and bottled water 27%).

### Water quality

Water quality can be affected by a number of factors including bacterial contamination and physical or chemical changes such as turbidity, colour and acidity. Treating water with chlorine can affect its taste. In 2001, over a quarter (27%) of Australians were not satisfied with the quality of tap-water for drinking (graph 24.12). South Australians were the most dissatisfied (42%), to the extent that 10% of people indicated they did not drink any tap-water at all. This was four times the national average. Dissatisfaction with the quality of tap-water for drinking has declined in most states and territories, the exceptions being South Australia and Tasmania. People in the Northern Territory were the most satisfied with the quality of tap-water for drinking (90%).



Source: *Environmental Issues: People's Views and Practices, 2001 (4602.0)*.



Source: *Environmental Issues: People's Views and Practices, 2001 (4602.0)*.

Several problems affected the quality of mains tap-water for drinking. Half of those who expressed dissatisfaction with the quality of drinking water (52%) nominated taste as the reason for their dissatisfaction (graph 24.13). About a third stated chlorine as a problem (32%). Other common complaints included: dirty water (16%); odour (16%); colour (15%); and microbial or algae contamination (14%). Since 1998, the proportion of Australians concerned about the different problems associated with water quality declined, except in relation to chlorine, which registered a small increase in concern (30% in 1998; 32% in 2001).

South Australian households registered the highest levels of dissatisfaction with taste (65%), followed by Western Australian households (58%). Northern Territorians were the most likely to complain that the tap-water was salty (5%). About 4% of South Australians also mentioned this problem. This corresponds with research by the Commonwealth Scientific and Industrial Research Organisation which found that salt concentrations in several Adelaide Hills catchments periodically exceeds Australian drinking water guidelines (Newton et al. 2001).

**Water conservation**

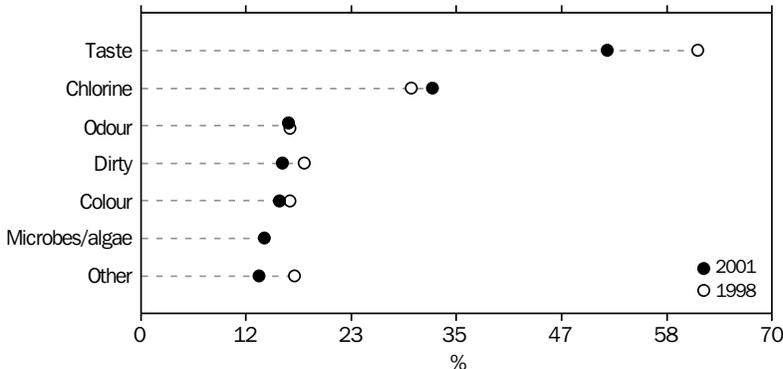
Australian households used 1.8 million megalitres of water in 1996–97, making households the second largest user of water after the agriculture sector (*Water Account for Australia* (4610.0)). As such, water conservation methods in homes can make a significant contribution to reducing the total amount of water consumed.

Household water conservation can be achieved through both the use of devices such as dual flush toilets and reduced flow shower heads, and behavioural practices like having shorter showers. Use of water conserving devices has increased, with 64% of households having a dual flush toilet in 2001 (up from 55% in 1998) and 35% of households having a reduced flow shower head in 2001 (up from 32% in 1998) (graph 24.14). Just over a quarter of Australian households (27%) did not have either of these items.

Turning off or repairing dripping taps was the most common water saving practice reported by Australian households in 2001 (20%). The second most common practice was having full loads of washing (16%), followed by having shorter showers (14%). The overall commitment to saving water in the household by behaviour modification has slipped slightly over the years, with 56% of households reporting that they did not adopt any behavioural practice to conserve water in 2001. This compares with 53% in 1998 and 54% in 1994.

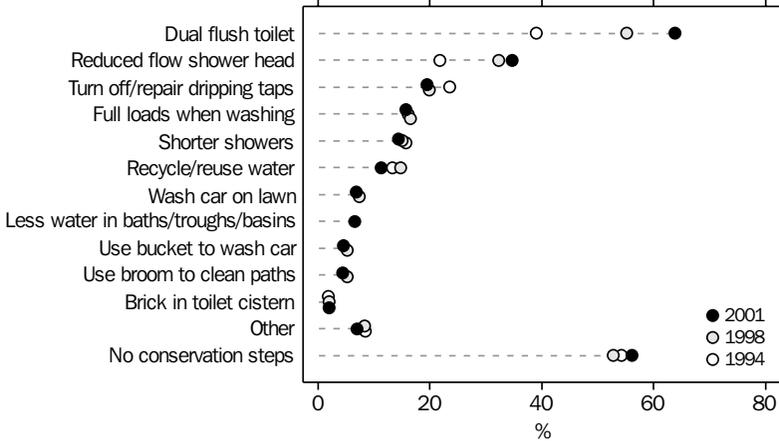
Just over half (58%) of Australian households with a garden reported that they regularly conserve water in the garden, with a further 3% reporting that they sometimes use water-saving measures. The main method used by Australian home gardeners was to water either early in the morning or late in the evening when it was cooler (graph 24.15). The next two most common practices were to water less frequently but for longer periods (20%), and to use recycled water (18%). Around one in ten households with a garden reported that they did not water the garden at all.

**24.13 QUALITY PROBLEMS WITH MAINS TAP-WATER FOR DRINKING**



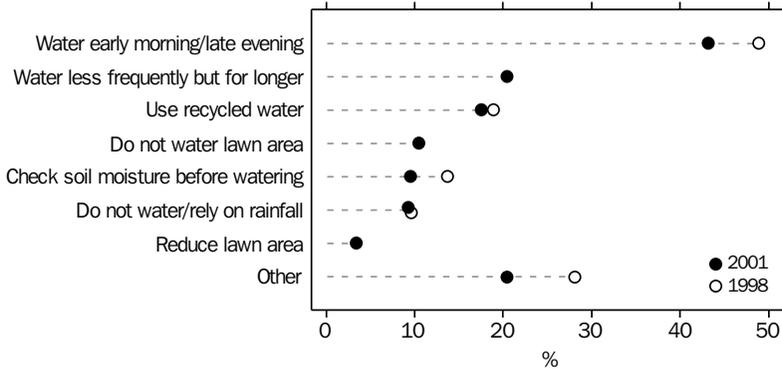
Source: *Environmental Issues: People's Views and Practices, 2001* (4602.0).

#### 24.14 WATER CONSERVATION METHODS, Devices and behavioural practices



Source: *Environmental Issues: People's Views and Practices, 2001 (4602.0)*.

#### 24.15 WATER CONSERVATION METHODS IN THE GARDEN



Source: *Environmental Issues: People's Views and Practices, 2001 (4602.0)*.

Over two-thirds (69%) of Australian households with a garden used mulch in 2001. Nearly three-quarters of those using mulch in the garden did it to conserve water (74%), while over a third mulched to reduce weeds (36%). Around 58% of households with gardens planted native trees or shrubs, however, only around 18% of households planted natives for their water conserving attributes.

### Salinity and land management

Salinity is one of the major land degradation issues presently being faced in Australia.

Land and water are essential for agricultural production. Since European settlement of Australia around 100 million hectares (ha) of forest and woodland have been cleared, mostly for agricultural production (NFI 1998). Today, around 456 million ha, or 59% of land in Australia, are used for agriculture, making it the dominant form of land use. However, agricultural production has led to the degradation of soil and water quality in many regions. This degradation has taken many forms, including increasing levels of soil salinity, sodicity and acidity.

In recent years salinity has gained prominence as a national environmental issue (MDBC 1999; Commonwealth of Australia 2000; NLWRA 2001). While salinity, or the build-up of salts in the soil is a naturally occurring condition of the Australian landscape, it has been exacerbated by agricultural activities. There are two main forms of salinity, dryland and irrigated salinity. Dryland salinity is far more widespread. Salinity is caused by rising water tables brought about by the removal of vegetation and the excessive application of irrigation water.

The annual cost of salinity to agricultural industries through lost production in 2000 was estimated to be approximately \$187m. While this cost is low compared to other land degradation issues, the impact of salinity is expected to increase in extent and severity in the coming years (NLWRA 2002a).

The impacts of salinity also extend beyond the agriculture sector. Roads, houses and water supply infrastructure are all degraded by it. In four states (New South Wales, Victoria, South Australia and Western Australia) the roads, buildings and/or water supply infrastructure of almost 70 towns are at risk of damage from salinity. Salinisation of freshwater rivers used for drinking water is increasingly an issue. It has been predicted that without effective salinity management, by 2020 the quality of Adelaide's drinking water will exceed health standards for salt around 40% of the time (MDBC 1999). Biodiversity is also at risk through the loss and degradation of native vegetation. Across Australia around 630,000 ha of native

vegetation and 80 wetlands, including wetlands of international importance, are at risk (NLWRA 2001).

## 2002 Land Management and Salinity Survey

In May 2002, the Australian Bureau of Statistics (ABS) conducted the Land Management and Salinity Survey as a supplement to the 2001 Agricultural Census. This survey was the largest of its type conducted in Australia. It collected information from farmers on the extent of land showing signs of salinity, the strategies used by farmers to manage and prevent salinity and some of the reasons and barriers to land management change.

The survey found almost 20,000 farms and 2 million ha of agricultural land were showing signs of salinity, with approximately 820,000 ha of land unable to be used for production (table 24.16). Western Australia had the highest number of farms (6,900 farms) and the greatest area of land (1.2 million ha) showing signs of salinity.

Farms primarily involved with the production of beef cattle, sheep and grains accounted for 16,000 farms (or 82%) showing signs of salinity, and 1.9 million ha or 97% of the agricultural land showing signs of salinity (table 24.17). Non-irrigated farms accounted for 1.8 million ha or 93% of the agricultural land showing signs of salinity.

**24.16 FARMS WITH LAND SHOWING SIGNS OF SALINITY — May 2002**

	Farms with land showing signs of salinity no.	Proportion of total farms(a) %	Land showing signs of salinity ha	Proportion of total farm area(b) %	Salinised land unable to be used for production ha	Proportion of land showing signs of salinity(c) %	Proportion of total farm area(d) %
New South Wales/ Australian Capital Territory	3 108	7.4	124 110	0.2	44 204	35.6	0.1
Victoria	4 834	13.7	138 540	1.1	60 222	43.5	0.5
Queensland	993	3.4	106 644	0.1	39 927	37.4	—
South Australia	3 328	21.6	*350 140	0.6	105 351	30.1	0.2
Western Australia	6 918	51.3	1 240 643	1.1	567 376	45.7	0.5
Tasmania	390	9.1	6 213	0.3	1 688	27.2	0.1
Northern Territory	8	2.0	2 316	—	2 253	97.3	—
<b>Australia</b>	<b>19 579</b>	<b>13.9</b>	<b>1 968 606</b>	<b>0.4</b>	<b>821 022</b>	<b>41.7</b>	<b>0.2</b>

(a) Farms with land showing signs of salinity as a proportion of total farms in the state/territory/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census. (b) Land showing signs of salinity as a proportion of total farm land in the state/territory/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census. (c) Salinised land unable to be used for production as a proportion of land showing signs of salinity. (d) Salinised land unable to be used for production as a proportion of total farm land in the state/territory/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census.

Source: *Salinity on Australian Farms, 2002 (4615.0)*.

**24.17 LAND SHOWING SIGNS OF SALINITY, By industry — May 2002**

	Farms with land showing signs of salinity	Proportion of total farms in industry(a)	Land showing signs of salinity	Proportion of total farm area in industry(b)	Salinised land unable to be used for production	Proportion of land showing signs of salinity(c)	Proportion of total farm area in industry(d)
	no.	%	ha	%	ha	%	%
<b>Irrigated farms</b>							
Nurseries and flowers	*35	1.6	*543	0.5	*118	21.8	0.1
Vegetables	*349	8.3	2 685	0.3	1 165	43.4	0.1
Grapevines	*504	8.3	2 766	0.6	*1,133	41.0	0.2
Fruit	217	3.6	1 697	0.2	662	39.0	0.1
Grain	411	17.9	18 393	0.6	*10 585	57.6	0.3
Mixed grain and beef/sheep	364	23.8	24 897	0.8	8 001	32.1	0.3
Beef and/or sheep	698	11.7	58 360	0.6	13 697	23.5	0.2
Dairy	1 005	15.8	19 895	1.3	7 361	37.0	0.5
Other livestock	*47	7.2	*1 150	0.4	*852	74.1	0.3
Cotton	81	10.4	n.a.	0.1	n.a.	n.a.	0.2
Other crops	287	9.0	4 314	0.6	1 560	36.2	0.2
Other industries	51	7.7	*1 318	0.7	*451	34.2	0.2
<i>Total irrigated farms</i>	<i>4 049</i>	<i>10.2</i>	<i>137 539</i>	<i>0.6</i>	<i>50 369</i>	<i>36.6</i>	<i>0.2</i>
<b>Non-irrigated farms</b>							
Nurseries and flowers	*57	4.3	487	0.4	**240	49.2	0.2
Vegetables	*13	1.5	*89	0.1	*32	35.9	0.0
Grapevines	**84	11.0	**2 851	5.1	**2 780	97.5	4.9
Fruit	**18	0.7	*263	0.2	**260	98.9	0.2
Grain	4 692	33.5	627 616	2.5	398 657	63.5	1.6
Mixed grain and beef/sheep	4 578	31.8	375 145	1.6	179 981	48.0	0.7
Beef and/or sheep	5 396	10.5	809 124	0.2	180 964	22.4	0.1
Dairy	300	4.6	4 927	0.2	1 488	30.2	0.1
Other livestock	125	4.1	4 654	0.1	*3 275	70.4	0.1
Cotton	**33	15.4	*960	0.4	*24	2.5	0.0
Other crops	173	4.9	1 827	0.2	*842	46.1	0.1
Other industries	63	1.7	3 124	0.2	*2 111	67.6	0.1
<i>Total non-irrigated farms</i>	<i>15 530</i>	<i>15.4</i>	<i>1 831 067</i>	<i>0.4</i>	<i>770 653</i>	<i>42.1</i>	<i>0.2</i>
<b>Total agriculture</b>	<b>19 579</b>	<b>13.9</b>	<b>1 968 606</b>	<b>0.4</b>	<b>821 022</b>	<b>41.7</b>	<b>0.2</b>

(a) Farms with land showing signs of salinity as a proportion of total farms in the industry. Source for the denominator is data from the ABS 2001 Agricultural Census. The denominator is either total irrigated farms or total non-irrigated farms, as per irrigated/non-irrigated farm split in table. (b) Land showing signs of salinity as a proportion of total farm land in the industry. Source for the denominator is data from the ABS 2001 Agricultural Census. The denominator is either total irrigated farms or total non-irrigated farms, as per irrigated/non-irrigated farm split in table. (c) Salinised land unable to be used for production as a proportion of land showing signs of salinity. (d) Salinised land unable to be used for production as a proportion of total farm land in the industry. Source for the denominator is data from the ABS 2001 Agricultural Census. The denominator is either total irrigated farms or total non-irrigated farms, as per irrigated/non-irrigated farm split in table.

Source: *Salinity on Australian Farms, 2002 (4615.0)*.

Salinity management practices have been implemented on nearly 30,000 farms, including on just over 7,000 irrigated farms that changed irrigation practices for salinity management purposes. Various activities are being used by farmers to manage or prevent salinity with the type of management adopted dependent on the nature of the farm. For example, cattle farmers adopt practices different from those used by orchardists. The main salinity management strategies used by farmers to manage or prevent salinity were: planting crops, pastures and fodder plants (e.g. lucerne, deep rooted perennials and saltbush); fencing off saline areas; planting trees; and building earthworks such as drains (table 24.18).

The main motivations for implementing salinity management practices were for farm sustainability (66% of farmers implementing change indicated this was of high importance), environmental protection (56%), and to increase or maintain agricultural production (54%) (table 24.19).

The main barriers to changing land management practices were lack of financial resources and lack of time (35% and 21% of farmers, respectively, reporting these as very limiting). Lack of information or doubts about likely success were not considered by the majority of farmers to be barriers to change (only 6% and 7% of farmers respectively reported these as very limiting) (table 24.20).

#### 24.18 SALINITY MANAGEMENT STRATEGIES(a) — May 2002

	Crops, pastures and fodder plants ha	Trees ha	Land fenced from grazing ha	Earthworks km
New South Wales/Australian Capital Territory	1 095 711	91 424	17 227	42 557
Victoria	*679 820	39 696	40 147	37 469
Queensland	331 204	125 862	*26 612	14 635
South Australia	452 028	14 443	28 788	*12 633
Western Australia	633 398	499 670	352 018	97 900
Tasmania	*7 264	4 562	1 370	*2 700
Northern Territory	*5 973	303	10	*65
<b>Australia</b>	<b>3 205 398</b>	<b>775 960</b>	<b>466 174</b>	<b>207 959</b>

(a) Any land management practice undertaken wholly or partly for the management or prevention of salinity.

Source: *Salinity on Australian Farms, 2002 (4615.0)*.

#### 24.19 REASONS FOR CHANGING LAND MANAGEMENT PRACTICES(a) — May 2002

	Not a reason %	Low importance %	Medium importance %	High importance %	Total %
Increased productivity	18.6	6.7	20.5	54.2	100.0
Increased land value	28.8	15.4	27.7	28.1	100.0
Improved risk management	33.2	12.1	25.8	28.9	100.0
Farm sustainability	13.5	*3.9	16.3	66.3	100.0
Improved environment protection	12.6	5.1	26.8	55.6	100.0
Other	—	*0.7	**22.5	76.9	100.0

(a) Farms managing for salinity and/or with land showing signs of salinity that have changed land management practices because of salinity or to prevent salinity.

Source: *Salinity of Australian Farms, 2002 (4615.0)*.

**24.20 BARRIERS TO CHANGING LAND MANAGEMENT PRACTICES(a) — May 2002**

	Not a factor %	Not very limiting %	Limiting %	Very limiting %	Total %
Lack of financial resources	23.8	7.9	32.8	35.5	100.0
Lack of time	29.7	13.4	36.1	20.8	100.0
Insufficient or inadequate information	52.1	24.8	17.4	5.8	100.0
Doubts about likely success	51.8	23.1	18.3	6.8	100.0
Age or poor health	70.6	12.5	10.3	6.6	100.0
Other	—	7.8	20.1	72.1	100.0

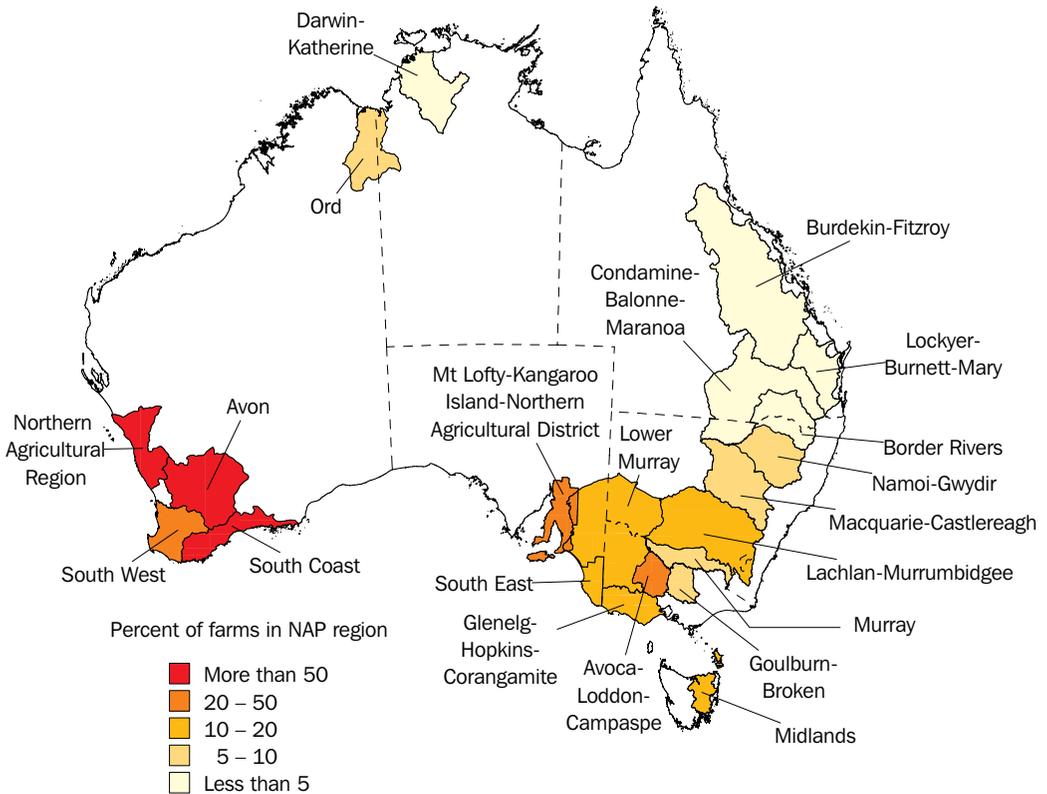
(a) Farms managing for salinity and/or with land showing signs of salinity.

Source: *Salinity on Australian Farms, 2002 (4615.0)*.

The Australian, and state and territory governments have adopted the National Action Plan for Salinity and Water Quality (NAP). The NAP has identified 21 high priority regions throughout Australia (map 24.21). Farms within the NAP regions account for 17,000 farms or 87% of total

farms showing signs of salinity and 1.3 million ha or 66% of the total area showing signs of salinity. The proportion of salinity affected farms within each region varies, with the most affected regions in southern Western Australia and in the lower reaches of the Murray-Darling basin (map 24.21).

**24.21 NAP REGIONS, Proportion of farms affected by salinity — 2002**



Source: ABS data available on request, *Land Management and Salinity Survey, 2002*.

The 2002 Land Management and Salinity Survey produced estimates for both irrigated and non-irrigated farms at the NAP region level. Tables 24.22 and 24.23 show the extent of land showing signs of salinity on irrigated and non-irrigated farms, by NAP region. Overall, the NAP region most affected by salinity was Avon (Western Australia) with 2,279 farms and 450,000 ha showing signs of salinity.

Almost 80% of farms and 90% of the farm area showing signs of salinity within the NAP regions is non-irrigated, which is expected given the NAP was established to address dryland salinity. However, the amount of salinity covered by the NAP regions varies between irrigated and non-irrigated farms. While 94.8% of all irrigated land with salinity is within the NAP regions, only 64% of non-irrigated land with salinity is within these regions.

#### 24.22 IRRIGATED FARMS WITH LAND SHOWING SIGNS OF SALINITY, By NAP region — May 2002

	Non-irrigated farms with land showing signs of salinity	Proportion of total non-irrigated farms in NAP region(a)	Land showing signs of salinity	Proportion of total non-irrigated farm area in NAP region(b)	Salinised land unable to be used for production	Proportion of land showing signs of salinity(c)	Proportion of total irrigated farm area in NAP region(d)
	no.	%	ha	%	ha	%	%
Avoca-Loddon-Campaspe	777	39.1	30 217	4.3	9 813	32.5	1.4
Avon	18	73.6	*808	8.9	*693	85.8	7.6
Border Rivers	*13	1.7	n.a.	—	n.a.	n.a.	0.3
Burdekin-Fitzroy	*56	4.0	*1 110	0.1	*835	75.2	0.1
Condamine-Balonne-Maranoa	*31	2.8	*531	—	*48	9.0	—
Darwin-Katherine	—	—	—	—	—	—	—
Glennelg-Hopkins-Corangamite	60	8.7	1 283	0.8	*379	29.5	0.2
Goulburn-Broken	283	9.3	3 237	0.6	879	27.2	0.2
Lachlan-Murrumbidgee	353	14.6	*17 140	0.6	1 983	11.6	0.1
Lockyer-Burnett-Mary	87	3.3	693	0.1	*266	38.4	—
Lower Murray	539	11.1	36 001	1.8	18 973	52.7	0.9
Macquarie-Castlereagh	*62	9.6	*2 006	0.3	**1 022	51.0	0.1
Midlands	130	15.1	2 256	0.4	449	19.9	0.1
Mt. Lofty-Kangaroo Island-Northern Agricultural District	*550	24.2	7 979	2.8	*2 533	31.8	0.9
Murray	202	12.2	8 361	0.4	1 685	20.2	0.1
Namoi-Gwydir	*51	8.1	*1 933	0.3	*50	2.6	—
Northern Agricultural District	*10	7.8	**1 089	1.8	**1 045	96.0	1.8
Ord	*9	12.2	*88	0.4	**20	22.7	0.1
South Coast	74	40.3	1 341	1.5	642	47.9	0.7
South East	*57	5.4	*10 770	1.6	1 109	10.3	0.2
South West	112	8.9	3 422	1.4	774	22.6	0.3
<b>Total NAP</b>	<b>3 473</b>	<b>12.5</b>	<b>130 361</b>	<b>0.7</b>	<b>47 408</b>	<b>36.4</b>	<b>0.3</b>
<b>Total non-NAP</b>	<b>576</b>	<b>4.8</b>	<b>7 178</b>	<b>0.2</b>	<b>2 961</b>	<b>41.3</b>	<b>0.1</b>
<b>Australia</b>	<b>4 049</b>	<b>10.2</b>	<b>137 539</b>	<b>0.6</b>	<b>50 369</b>	<b>36.6</b>	<b>0.2</b>

(a) Irrigated farms with land showing signs of salinity as a proportion of total irrigated farms in the NAP region/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census. (b) Land showing signs of salinity as a proportion of total irrigated farm area in the NAP region/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census. (c) Salinised land unable to be used for production as a proportion of land showing signs of salinity. (d) Salinised land unable to be used for production as a proportion of total irrigated farm area in the NAP region/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census.

Source: *Salinity on Australian Farms, 2002 (4615.0)*.

## 24.23 NON-IRRIGATED FARMS WITH LAND SHOWING SIGNS OF SALINITY, By NAP region — May 2002

	Non-irrigated farms with land showing signs of salinity		Proportion of total non-irrigated farms in NAP region(a)		Land showing signs of salinity		Proportion of total non-irrigated farm area in NAP region(b)		Salinised land unable to be used for production		Proportion of land showing signs of salinity(c)		Proportion of total irrigated farm area in NAP region(d)		
	no.	%	no.	%	ha	%	ha	%	ha	%	ha	%	ha	%	
Avoca-Loddon-Campaspe	*477	19.0	8 351	0.6	3 122	37.4	0.2	2 279	79.9	450 236	5.8	284 371	63.2	3.6	
Avon	*137	5.0	n.a.	0.2	n.a.	n.a.	0.3	Border Rivers	*96	3.0	**35 244	0.2	**19 656	55.8	0.1
Burdekin-Fitzroy	*132	2.6	**27 713	0.2	**2 133	7.7	—	Condamine-	1	0.9	2 023	—	2 023	100.0	—
Condamine-	1 378	19.7	30 047	1.2	9 967	33.2	0.4	Balonne-Maranoa	229	9.2	4 195	0.5	845	20.1	0.1
Balonne-Maranoa	1 124	14.8	*29 620	0.4	3 508	11.8	0.1	Darwin-Katherine	168	3.8	*1 196	—	*650	54.4	—
Darwin-Katherine	1 119	18.9	74 734	0.4	36 752	49.2	0.2	Glenelg-	435	8.4	6 988	0.1	*2 519	36.1	—
Glenelg-	*188	16.0	*2 583	0.4	**885	34.3	0.1	Hopkins-Corangamite	1 451	28.4	*51 469	1.2	**22 751	44.2	0.5
Hopkins-Corangamite	104	5.8	*3 244	0.2	468	14.4	—	Murray	226	6.9	*4 901	0.2	*652	13.3	—
Murray	868	59.2	151 944	2.8	91 391	60.2	1.7	Namoi-Gwydir	—	—	—	—	—	—	—
Namoi-Gwydir	1 354	63.6	73 618	2.4	42 242	57.4	1.4	Northern Agricultural District	209	13.8	50 631	4.9	*9 250	18.3	0.9
Northern Agricultural District	1 681	50.0	153 150	5.3	78 522	51.3	2.7	Ord	1 354	63.6	73 618	2.4	42 242	57.4	1.4
Ord	—	—	—	—	—	—	—	South Coast	209	13.8	50 631	4.9	*9 250	18.3	0.9
South Coast	1 354	63.6	73 618	2.4	42 242	57.4	1.4	South East	209	13.8	50 631	4.9	*9 250	18.3	0.9
South East	1 681	50.0	153 150	5.3	78 522	51.3	2.7	South West	1 681	50.0	153 150	5.3	78 522	51.3	2.7
South West	13 658	19.8	1 171 475	0.9	623 708	53.2	0.5	Total NAP	1 873	5.9	659 592	0.2	146 945	22.3	0.1
Total NAP	1 873	5.9	659 592	0.2	146 945	22.3	0.1	Total non-NAP	15 530	15.4	1 831 067	0.4	770 653	42.1	0.2
Total non-NAP	15 530	15.4	1 831 067	0.4	770 653	42.1	0.2	Australia	15 530	15.4	1 831 067	0.4	770 653	42.1	0.2

(a) Non-irrigated farms with land showing signs of salinity as a proportion of total non-irrigated farms in the NAP region/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census. (b) Land showing signs of salinity as a proportion of total non-irrigated farm area in the NAP region/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census. (c) Salinised land unable to be used for production as a proportion of land showing signs of salinity. (d) Salinised land unable to be used for production as a proportion of total non-irrigated farm area in the NAP region/Australia. Source for the denominator is data from the ABS 2001 Agricultural Census.

Source: *Salinity on Australian Farms, 2002 (4615.0)*.

### Comparisons with other data

Farmer assessments of the extent of salinity may differ from assessments made by scientific means, but are an indication of the level of salinity occurring on farms that can be provided rapidly and cost-effectively. The results from the 2002 Land Management and Salinity Survey show a lower level of saline land than other sources (table 24.24). Factors most likely to be contributing to differences are the different concepts, assessment methods and coverage used in each study. While farmers' perceptions of the area will differ from scientific assessments, they are more or less consistent with the other studies, in terms of the relative area affected by salinity in

each state and territory. In all studies, Western Australia is the state most affected by salinity and Northern Territory, Australian Capital Territory and Tasmania are the least affected.

It is important to note that the 2002 Land Management and Salinity Survey provides information for agricultural land only. Agricultural land occupies approximately 456 million ha, representing 59% of land use in Australia, but salinity and salinity management also occur on non-agricultural land. Non-agricultural land was out of scope for the 2002 Land Management and Salinity Survey.

## 24.24 AREA AFFECTED BY SALINITY, Comparison of ABS results with other estimates

	PMSEIC 1999	NLWRA 2001	ABS 2002
	Area of salinity affected land(a)	Area at risk of salinity(b)	Area showing signs of salinity(c)
	'000 ha	'000 ha	'000 ha
New South Wales/Australian Capital Territory	120	181	124
Victoria	120	670	138
Queensland	10	n.a.	106
South Australia	402	390	*350
Western Australia	1 802	4 363	1 241
Tasmania	20	54	6
Northern Territory	—	—	2
<b>Australia</b>	<b>2 476</b>	<b>5 658</b>	<b>1 969</b>

(a) As determined by experts. (b) As estimated from water table heights. (c) As reported by farmers.

Source: *Salinity on Australian Farms, 2002 (4615.0)*.

## Air pollution

Air pollution is the greatest environmental issue concerning Australians (*Environmental Issues: Peoples Views and Practices (4602.0)*). Poor air quality can have a number of negative impacts on both environmental and human health (EPAV 2000). For example, increases in atmospheric nitrogen oxides (oxides of nitrogen) contribute to acid rain, and exposure can lead to a fatal excessive fluid build up in the lung tissues (pulmonary oedema) in humans (NPI 2003a). This section examines both outdoor and indoor air pollution.

### Outdoor air pollution

The extent and intensity of localised outdoor air pollution depends on a number of factors: meteorological, geographical and human activities. The most important meteorological influences include rain, wind and temperature inversions. Key geographical influences include proximity to the ocean, as sea breezes tend to carry pollution inland, and topography, as valleys tend to trap pollution in winter in an inversion (Manins et al. 2001). Major human activities affecting air quality include transport use, generation of electricity by fossil fuels and woodsmoke.

Air pollutants are grouped into two broad categories; hazardous air pollutants and indicator (or criteria) air pollutants. Hazardous air

pollutants are also known as air toxics. Air toxics are defined as gaseous, aerosol or particulate pollutants which are present in the air in low concentrations with characteristics hazardous to human, plant or animal life (EA 2001a). Hazardous air pollutants include heavy metals, volatile and semi volatile organic compounds, polycyclic aromatic hydrocarbons and aldehydes.

The sources of hazardous air pollutants are primarily related to human activities, for example industry, motor vehicles and wood heaters. Motor vehicles are typically the largest source of hazardous air pollutants in urban areas and are the largest source of benzene, toluene, 1,3-butadiene and lead. Woodheaters also contribute, especially in winter. Emissions from domestic fuel combustion include benzene, aldehydes and metals (EA 2001a).

The effects of exposure to hazardous air pollutants vary but cases of cancer, birth defects and respiratory disorders have been linked to exposure to air toxics (EPAV 1999). A list of the priority hazardous air pollutants and their health effects are outlined in table 24.25. In order to reduce exposure to hazardous air pollutants a strategy is being developed under the National Environment Protection Measure (NEPM) program.

## 24.25 SELECTED HAZARDOUS AIR POLLUTANTS AND THEIR EFFECTS

Air pollutant	Health and environment effects
Benzene	Cancer causing, causes anaemia
1,3-Butadiene	Cancer causing
Polycyclic aromatic hydrocarbons (PAH)	Cancer causing, environmentally persistent
Arsenic and compounds	Cancer causing, environmentally persistent
Chromium and compounds	Cancer causing, affects respiratory system, inhalation can damage nose, throat, lungs, stomach and intestines, environmentally persistent. May lead to asthma, other allergic reactions, stomach upsets, ulcers, convulsions and kidney damage
Nickel and compounds	Cancer causing, can affect the respiratory system, environmentally persistent
Cadmium and compounds	Cancer causing linked to prostate and kidney cancer in humans and also to lung and testicular cancer in animals. Smoke from burning cadmium or cadmium oxide can, in severe cases, affect respiratory system, environmentally persistent
Dioxins and furans	Cancer causing, skin disease, environmentally persistent and bioaccumulates
Mercury	Can cause reproductive problems, environmentally persistent, bioaccumulates
Dichloromethane	Probable cancer causing agent, moderately persistent in the environment. High concentrations may cause unconsciousness and death. Exposure may irritate lungs, cause pulmonary oedema and irregular heartbeat. Long-term exposures at high level may damage the liver and brain
Formaldehyde	Cancer causing, irritates the skin, eye and respiratory system, and can exacerbate asthma
Styrene	Possible cancer causing agent
1,4-Dichlorobenzene	Probable cancer causing agent, moderately persistent in the environment
Tetrachloroethylene	Probable cancer causing agent
Manganese compounds	Can affect brain function, moderately persistent in the environment

Source: EPAV 1999.

### Indoor air pollution

Indoor air pollution is of particular concern as Australians spend up to 90% of their time inside (*How Australians Use Their Time* (4153.0)). However, information currently available on the level of indoor pollutants, their sources and the health effects, are not comprehensive enough to allow a confident evaluation of these issues at this stage (EA 2001a). Several research projects are currently being conducted, including the BTEX (benzene, toluene, ethylbenzene, and xylene) personal exposure monitoring study, to address these gaps in knowledge (EA 2001b).

Generally, air pollution is greater indoors than outside and several factors influence the level of air pollution build up in buildings. These include the level of ventilation and the presence of toxic substances. Newer buildings are particularly at risk of hazardous air pollution due to low ventilation rates and 'off gassing' of new building materials. 'Off gassing' refers to the releases of toxic fumes from furniture, carpets, paints, glues and sealants used in building products. These fumes are greatest in new buildings and may remain high for several months (EA 2001a).

Another major source of indoor emissions is the use of gas cookers and unflued gas heaters. As a result of studies linking these appliances to indoor air pollution, unflued gas heaters are now being systematically replaced in all New South Wales

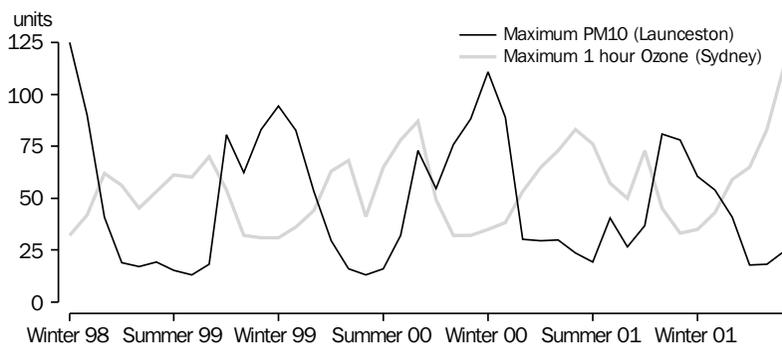
schools. Outdoor air quality can also impact on indoor air quality due to the air exchange rate which varies with climate, lifestyle and building design (EA 2001a).

### Levels of air pollution

Air quality monitoring indicates that overall Australia currently has fairly good air quality. There is little evidence of air pollution problems from sulfur dioxide, nitrogen dioxide or lead in the urban areas of Australia at present. Carbon monoxide is a problem in some areas but is unlikely to be of concern in the future (Manins et al. 2001). However, the levels of particulate matter and ozone are of concern and the next section examines these two pollutants.

The factors influencing air quality vary considerably. The main factors influencing metropolitan air quality include motor vehicles and industry while air quality in regional areas is influenced by localised factors such as mining and domestic heating. As a result of these different influences the seasonal occurrence of air pollution tends to be different in different parts of Australia. For example, in Sydney one of the main air quality issues is photochemical smog (measured as surface ozone), which occurs mainly in summer. However, in Launceston (Tasmania) one of the main air quality issues is high levels of particulate matter less than ten micrometres in diameter, which occur mainly in winter (graph 24.26).

### 24.26 SEASONAL CONCENTRATION OF PM10 AND OZONE(a) — 1998–2001



(a) Randwick monitoring station.

Source: NSW EPA 1998–2001; DPIWE unpublished data.

Photochemical smog is formed by emissions of oxides of nitrogen and hydrocarbons reacting with sunlight to eventually form ozone (*Australia's Environment: Issues and Trends, 2001* (4613.0)). The levels of surface ozone in major cities is of particular concern as it has been correlated with increases in mortality (EPAV 2000). Although the levels of ozone concentrations have remained fairly steady from 1999 to 2001 (table 24.27), the surface ozone exceedences are likely to become less frequent over time as older motor vehicles are phased out and are replaced by newer vehicles that are subject to more stringent emission controls. These controls set upper levels of emissions for pollutants such as sulfur dioxide and oxygenates. However, even with these controls it is possible that as vehicle usage and numbers continue to rise, the volume of emissions may lead to increasing levels of ozone (Manins et al. 2001).

The most important air quality issue for non-metropolitan areas of Australia is airborne particles (Manins et al. 2001). Fine particles of particulate matter (PM10) are particles of any substance less than ten micrometers in diameter and include sulfates, nitrates, carbon and silica (*Measuring Australia's Progress* (1370.0)). Particle pollution is a major health concern as it can exacerbate respiratory and cardiovascular illnesses, including bronchitis, pneumonia and asthma, leading to increased hospital admissions (Atech 2001). Particles have also been linked to the deaths of up to 2,400 people a year in Australia, carrying an associated cost of \$17.2b (EA 2001c).

Fine particles mostly come from burning fossil fuels or wood but there are also a number of important natural sources of PM10 including sea salt, dust, emissions from vegetation, pollen and bushfires (NEPC 1998). The sources of particle pollution differ between areas (graph 24.28).

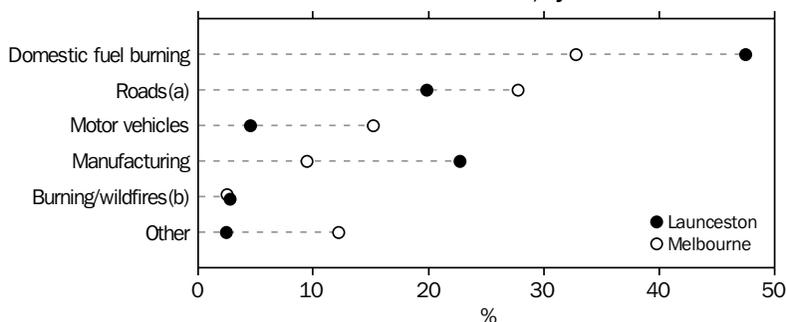
### 24.27 MAXIMUM FOUR HOUR OZONE CONCENTRATIONS, By location

	Sydney, Rozelle	Melbourne, Alphington	Perth, North East Metro	Brisbane, Rocklea
	ppm	ppm	ppm	ppm
1999	0.050	0.070	0.080	(a)0.102
2000	0.070	0.060	0.058	0.072
2001	(a)0.083	0.062	0.079	0.071

(a) Indicates NEPM exceeded once in that year.

Source: NEPC 1999–2001.

## 24.28 PROPORTION OF TOTAL PARTICLE POLLUTION, By source — 2001–02



(a) Paved and unpaved roads (including dust borne particles, street sweeping and road building).

(b) Burning sources include: fuel reduction, regeneration and agriculture.

Source: NPI 2003b.

Particle levels are influenced by climate and topographical conditions. In warmer regions, such as Sydney and South-East Queensland dry conditions can contribute to bushfires and windblown dust. Bushfires cause the levels of fine particles to rise above the air NEPM. The peak levels of fine particulate pollution are usually around 70 microgram per cubic metre or less (Manins et al. 2001). In Armidale (New South Wales), Launceston and Canberra the use of domestic wood fires for heating in winter can lead to high levels of particles (EA 2001c) and, in 2000 in Launceston, the highest measured level was 111 micrograms per cubic metre (DPIWE 2002) (table 24.29).

All levels of government have undertaken measures to try and reduce the ambient particle levels in Australia. These measures include:

- the setting of a national ambient air quality standard for particles under the air NEPM (NEPC 1998)
- legislation for higher fuel quality standards and setting stricter emission standards for motor vehicles
- imposing tighter emission standards for new wood heaters and providing educational materials on their correct operation
- implementing the Australian Minerals Industry Code for Environmental Management to reduce dust emissions from mining areas
- encouraging better coordination between responsible authorities to limit air pollution from essential hazard reduction burns (EA 2001c).

## 24.29 MAXIMUM DAILY PM10(a) CONCENTRATIONS, By location

	1999	2000	2001
MICROGRAMS PER CUBIC METRE			
Sydney, Lidcombe	37.0	52.5	65.3
Melbourne, Alphington	52.0	57.0	72.6
Perth, North Metro	35.2	29.8	53.5
SE Queensland, Springwood	48.2	46.3	39.0
Canberra, Monash(b)	n.a.	56.4	70.6
Launceston, Ti Tree Bend	94.0	111.0	80.9
NUMBER OF EXCEEDENCES			
Sydney, Lidcombe	0	1	1
Melbourne, Alphington	1	1	2
Perth, North Metro	0	0	1
SE Queensland, Springwood	0	0	0
Canberra, Monash(b)	n.a.	1	4
Launceston, Ti Tree Bend	43	39	28

(a) Particulate matter are particles of any substance less than ten micrometres in diameter. (b) Indicates high volume sampler.

Source: NEPC 1999–2001.

## National Pollutant Inventory

The National Pollutant Inventory (NPI) is a database designed to provide the community, industry and government with information on the levels of certain pollutants emitted to the environment from industry and other sources. However, the purpose of the NPI is not to examine the direct environmental or health effects of emissions. This database provides information on the quantities of pollutants emitted as well as their source and location. The NPI currently holds emission data for close to 3,000 facilities, 32 airsheds and 29 catchments around Australia. Currently facilities estimate their own emissions annually (by completing a reporting form), with 'aggregated emissions' from households and other sources being estimated by government agencies (NPI 2002).

## Drought

Severe drought conditions have been experienced throughout much of Australia recently. Defining exactly when droughts begin and end is a difficult task. One problem is that droughts are defined and measured in different ways. Because of this, this section focuses on rainfall deficiencies as the primary indicator of drought and uses 1 July 2002 to 30 June 2003 as the reference period.

### Defining and measuring drought

Drought is a term that has no universal definition. While the Bureau of Meteorology (BOM) defines drought as a 'prolonged, abnormally dry period when there is not enough water for users normal needs', it is not simply an acute shortage of water (BOM 2003a).

Drought is defined and measured, in various ways by different users, for different purposes. To meteorologists, drought is defined by rainfall deficiencies over extended periods of time. For example, BOM measures rainfall over time and produces maps that show areas considered to be suffering from serious or severe rainfall deficiencies.

Drought can also be defined by its impacts on primary industries, in particular agriculture. This can be illustrated by the evaluation process of *Drought Exceptional Circumstances* (DEC), which forms part of the National Drought

Policy (NDP), a joint Commonwealth and state government initiative. The DEC evaluation process involves the integration of climatic, agricultural production and economic data from a range of government agencies to assess the severity and impact of drought on farm businesses and families, to determine if government assistance is required.

Scientists (e.g. hydrologists, soil scientists and botanists) define and measure drought in terms of changes and impacts on surface and groundwater levels, soil moisture and plant growth. Social scientists can define drought in terms of social expectations, perceptions and impacts on rural communities.

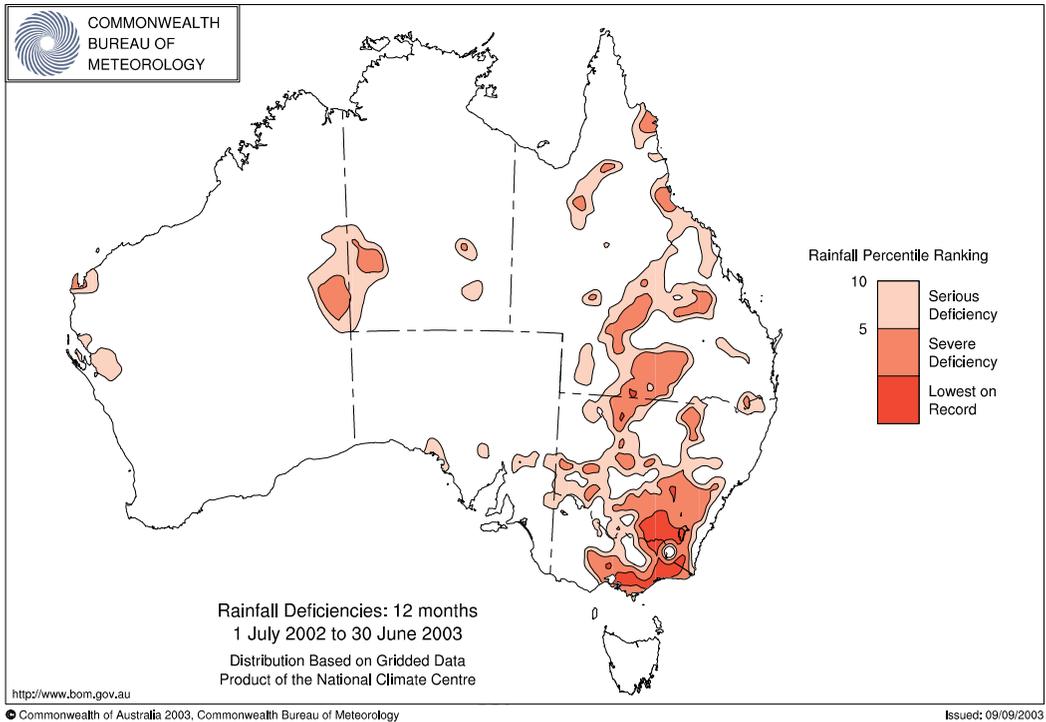
### Rainfall deficiencies

The Australian climate of 2002 was characterised by dry and warm conditions. It was the fourth driest year on record, while maximum temperatures across the continent were the warmest on record (BOM 2003b). Droughts and higher than average temperatures are often linked (Jones & Trewin 2000).

The rainfall deficiency map produced by BOM (map 24.30) illustrates the areas and severity of rainfall deficits over the period July 2002 to June 2003. According to BOM, an area is determined to be suffering from a serious rainfall deficiency when rainfall is between the lowest 5 and 10% recorded rainfall for the period in question. Severe rainfall deficiency is when rainfall is among the lowest 5% for the period in question. Rainfall deficiency maps produced by BOM also show areas where rainfall is the lowest on record for the time period. This map shows how severe rainfall deficiencies occurred over most of eastern Australia during the period July 2002 to June 2003, with many areas experiencing the driest periods on record.

All states and territories were affected by rainfall deficiencies in the approach to the 2002–03 year. By December 2002, serious to severe rainfall deficiencies covered more than half of Victoria, and much of Queensland and New South Wales. Inland South Australia and central Northern Territory were also affected by rainfall deficiencies, while areas in the south-west of Western Australia were experiencing rainfall deficits for the third successive year (BOM 2003d).

## 24.30 RAINFALL DEFICIENCY — July 2002–03



Source: BOM 2003c.

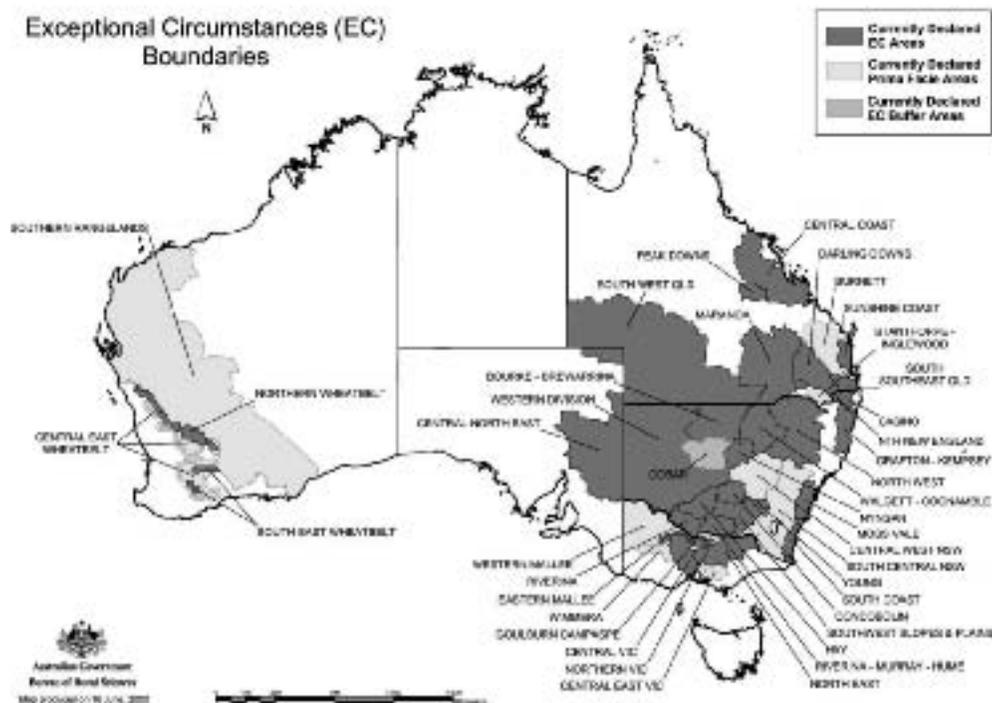
While widespread above average rainfalls were recorded in February 2003 and temporarily relieved many areas suffering from rainfall deficiencies, by March serious to severe rainfall deficits occurred from far north Queensland through to most of New South Wales (including the Australian Capital Territory) and Victoria, and east South Australia (BOM 2003e). Parts of Tasmania, Western Australia and Northern Territory were also affected by rainfall deficits. Below average Autumn rainfalls exacerbated the dry conditions across the country. By June 2003, longer term serious to severe rainfall deficiencies continued across most of eastern Australia, parts of central Australia and Western Australia.

It is difficult to compare this drought, of which part has occurred during 2002–03, to other droughts in Australia on record until this event is considered concluded. However, analysis by BOM suggests that this drought is among the worst on record in terms of short to medium duration drought events both for the spatial extent of rainfall deficiencies and the average level of dryness (BOM 2003f).

### Drought declared and exceptional circumstance areas

At the national level, the Bureau of Rural Sciences (BRS) produced maps of declared *Drought Exceptional Circumstances* (DEC) areas, that reflect an integrated evaluation of drought indicators involving physical, economic and social indicators (map 24.31). These maps are used to direct Australian Government assistance to areas determined to be affected by drought. However, drought declaration in Australia is primarily the responsibility of state governments, who take into account a variety of factors including rainfall deficiencies in determining an area drought affected. For example, during 2002–03 both New South Wales and Queensland had significant areas of land declared drought affected by their respective state governments. In July 2003 the entire state of New South Wales and almost two-thirds of Queensland was declared to be in drought.

## 24.31 EXCEPTIONAL CIRCUMSTANCES (EC) BOUNDARIES — June 2003



Source: BRS 2003.

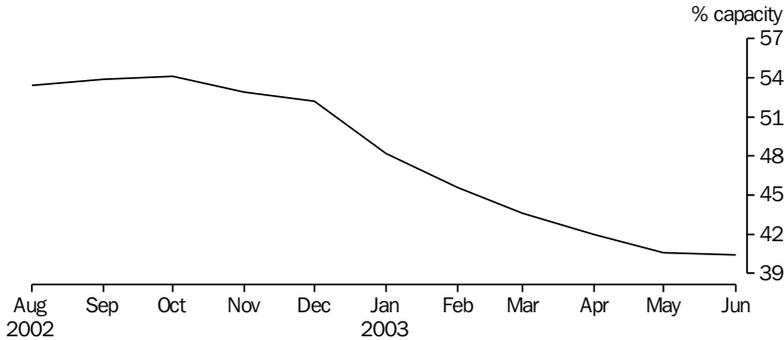
### Water storage levels and water restrictions

One of the measurable impacts of drought is a reduction in water storage levels. Changes in water storage levels can lead to the introduction of water restrictions, which limit the volume and way users can utilise water, especially in urban settlements.

Substantial decreases in water storage levels were experienced in eastern Australia over 2002–03. Graph 24.32 shows the changes that occurred in the water storage capacity of Melbourne Water reservoirs in the period August 2002 to June 2003. The declining volume of water in the storages of Melbourne are typical of those of in many parts of eastern Australia.

As a result of low levels of water in storage, water restrictions were introduced in most capital cities around Australia during 2002–03. These water restrictions varied from voluntary reductions of water use to mandatory restrictions of use. Sydney, Melbourne, Perth, Hobart and Canberra all experienced water restrictions during 2002–03. Restrictions were introduced in Adelaide from July 2003. Brisbane had permanent restrictions on the times residents were able to use sprinklers. The only capital city not affected by water restrictions during 2002–03 was Darwin. Water restrictions were also introduced in rural areas and farmers in drought affected regions had their water allocations greatly reduced in the 2002–03 irrigation season.

### 24.32 MELBOURNE WATER STORAGE LEVELS, By month



Note: Total capacity is 1,773,000 ML.

Source: Melbourne Water 2003a, 2003b.

### Economic impact of drought in 2002–03

Drought can have a significant impact on the economy, in particular through the decline of agricultural production. Based on forecasts by the Australian Bureau of Agriculture and Resource Economics (ABARE), the ABS has estimated the impact of drought on gross domestic product (GDP) growth.

The latest estimates by the ABS suggest that the direct effect of the current drought on agricultural production has had a downward impact on GDP growth of 1.0 percentage point between 2001–02 and 2002–03 (see *Impact of the drought on Australian production in 2002–03, Chapter 29, National accounts*). Gross value added at basic prices for the agriculture industry fell by 28.5% in 2002–03 compared with the level in the preceding year.

Drought can also have indirect effects on the economy which are not quantified in this analysis. These indirect effects can include negative impacts of falling agricultural production on downstream industries, particularly transport, wholesale trade and industries involved in the manufacturing of products from agricultural outputs. Any reduction in the inputs of these industries can also lead to a reduction in the production of other Australian industries. In addition, any reduction in agricultural income can lead to a fall in expenditure by farmers and others who draw an income from these industries.

### Bushfires

The bushfires which occurred at the end of 2002 and beginning of 2003 were among the most protracted and extensive experienced since European settlement of Australia. Fires burnt large tracts of land throughout Australia, caused damage to property, killed livestock and caused the loss of lives.

### Causes of bushfires

Data collected between 1976–77 and 1995–96 on the causes of bushfires on public land in Victoria shows that lightning strikes lead to the highest number of fires each year, followed by fires that are deliberately lit, those that escape from agricultural burning, and escapes from campfires (table 24.33). Similarly, the majority of area burnt in Victoria over the 20 year sample period, was initiated by lightning, followed by public utilities (e.g. from power lines), and deliberately lit fires.

### Past major bushfires

Bushfires have been part of the Australian environment since before human settlement of the continent. Some Australian flora and fauna has evolved to coexist with bushfires, and in the case of eucalypt forest, fire forms an integral part of its regeneration cycle. Aboriginal arrival to Australia resulted in an increased frequency in the incidence of bushfires, a pattern which was replicated upon European settlement (Florence 1996).

### 24.33 CAUSES OF BUSHFIRES IN VICTORIA — 1976–77 to 1995–96

Fire cause	Average no. of	Proportion of	Average	Proportion of
	fires each year	total fires	area burnt	total area burnt
	no.	%	ha/yr	%
Lightning	149	26	53 096	46
Deliberate	145	25	15 649	14
Agricultural	96	16	7 799	7
Campfires	59	10	1 466	1
Cigarettes/matches	41	7	444	<1
Cause unknown(a)	37	6	2 974	3
Miscellaneous(b)	26	5	10 009	9
Machinery/exhausts	15	3	2 551	2
Prescribed burn escapes(c)	9	2	5 274	5
Public utilities(d)	7	1	16 256	14
<b>Total(e)</b>	<b>584</b>	<b>100</b>	<b>115 518</b>	<b>100</b>

(a) Includes fires where investigators could not ascertain the cause, as well as fires where the cause was not investigated.

(b) Includes causes like: burning houses, burning buildings and fireworks. (c) Management of parks and forests includes the use of planned fires for a variety of purposes such as natural fuel management and the maintenance of flora and fauna habitat. Sometimes these fires burn beyond the planned perimeter. (d) Includes ignitions from trains and power transmission. (e) All figures are rounded; hence may not add up to column totals.

Source: DSE 2003a.

The areas which experience the most severe bushfires usually occur in the south-eastern corner of Australia, south of a line from Sydney to Adelaide. This is because the most severe fire weather (hot, dry, strong winds) generally occurs in this part of the country. In association with this climatic influence, the south eastern areas of mainland Australia, Tasmania, and the south western corner of Western Australia also produce the tallest forests and heavy fuel loads. When these usually wet forests dry out the heavy fuel loads produce the most intense and devastating bushfires (*Year Book Australia 1995* (1301.0)).

Bushfires caused significant damage in the 19th and 20th centuries. Vast areas of grassland and forest have been burnt, large numbers of livestock were killed, houses and other buildings were destroyed and many human lives were taken. Several of the fires are etched on the memories of Australians, despite the passing of the years.

The 'Black Thursday' fires of 6 February 1851 in Victoria, burnt the largest area (approximately 5 million ha) in European-recorded history and killed more than one million sheep and thousands of cattle as well as taking the lives of 12 people (CFA 2003a; DSE 2003b). On 'Red Tuesday', 1 February 1898 in Victoria 260,000 ha were burnt, 12 people were killed and 2000 buildings were destroyed (DSE 2003b).

Between December 1938 to January 1939, 1.5–2.0 million ha were burnt, 71 people were killed and over 1000 homes destroyed in Victoria (DSE 2003b, 2003c). The most devastation occurred on 'Black Friday', 13 January 1939, when

strong northerly winds intensified fires burning in almost every part of the state. Townships were destroyed and others badly damaged. So much ash and smoke was generated that ash fell as far away as New Zealand (DSE 2003c). Five years later in 1944, bushfires in Victoria burnt an estimated one million ha, killed between 15 and 20 people and destroyed more than 500 houses (DSE 2003b).

The 'Ash Wednesday' fires of 16 February 1983 caused severe damage in Victoria and South Australia. In Victoria, 210,000 ha were burnt, 2,080 houses destroyed, more than 27,000 stock lost and 47 people lost their lives (CFA 2003a; DSE 2003b, 2003d). Property-related damage was estimated at over \$200m and more than 16,000 fire fighters, 1,000 police and 500 defence personnel fought the fires in Victoria. In South Australia, 208,000 ha were burnt, 383 houses were destroyed, 28 people were killed and property-related damage was estimated to be more than \$200m (DSE 2003d).

Serious bushfires occurred in New South Wales in 1951–52, 1968–69, 1984–85 and 1993–94. In 1968–69 over one million ha were burnt and three people were killed (Linacre & Hobbs 1977; RFS 2003a). In 1984–85, 3.5 million ha were burnt, four lives were lost, 40,000 livestock were killed and \$40m damage to property was caused (RFS 2003a). In 1993–94, bushfires burnt 800,000 ha, destroyed 287 residential properties and other premises and killed four people (*Year Book Australia 1995* (1301.0)). At the height of the 1993–94 fires, over 20,000 firefighters were deployed (RFS 2003a).

Other states have also suffered serious bushfires. For example, Tasmania suffered their worst bushfires on 'Black Tuesday' 7 February 1967 when 110 fires that were within a 40 kilometre radius of Hobart converged during a seven-hour period, fanned by extreme weather conditions. Approximately 264,000 ha were burnt, 1,700 houses destroyed and 61 people were killed (*Year Book Australia 1995* (1301.0)). Western Australia experienced serious bushfires during 1960–61 when 359,000 ha were burnt (Linacre & Hobbs 1977).

The Northern Territory experiences fires annually on a scale which dwarfs those in southern Australia. For example, in 1974–75, following lush vegetation growth due to heavy rainfall in the previous two years, over 117 million ha or 15% of the total land area of the continent was burnt in central Australia during the fire season (*Year Book Australia 1995* (1301.0)). Extensive fires occurred in the Northern Territory in the 1920s, 50s and mid-70s. A number of the fires were caused by lightning strikes associated with seasonal change (Bushfires Council of the Northern Territory 2003). These fires are part of the natural cycle and also a tradition in Aboriginal people of the region. Up to 50% of the northern Australian landscape is burnt each year, and most areas are burnt at least once in every three years (Anderson 1999).

When considering fire statistics, fires with larger areas do not necessarily translate into more serious impacts on human settlements. For example, of all the fires that occurred during January 1994 in New South Wales, one of the most damaging was one of the smallest, burning just

476 ha but destroying 101 houses. This was more than half of the total houses lost in New South Wales during that bushfire emergency period.

### The 2002–03 bushfire season

Bushfires wreaked havoc in south eastern Australia during the spring and summer of 2002–03 (table 24.34). The period leading up to this was characterised by severe rainfall deficiencies and high temperatures (see *Drought* earlier in this chapter). The fires devastated sensitive alpine ecosystems, seriously threatened major urban centres and caused significant financial losses. The location of fires in New South Wales, Australian Capital Territory, Tasmania and alpine Victoria is depicted in map 24.35. Some significant fires, for example, which burnt in Victoria, like the Big Desert fire that burnt 181,400 ha in north west Victoria in December 2002 (DSE 2003e), are not included.

There are some difficulties when collecting information relating to bushfires. In most states and territories several agencies pool their resources to fight bushfires, and in some cases individual agencies report information relating specifically to their fire fighting efforts. In other cases an agency will report more comprehensive information incorporating other organisations. The data that is reported in this article is the most comprehensive and contemporary available, and generally the data reported from one agency per state was used to reduce duplication. If data from two agencies is available concerning the same aspect (e.g. in Victoria) a range has been reported.

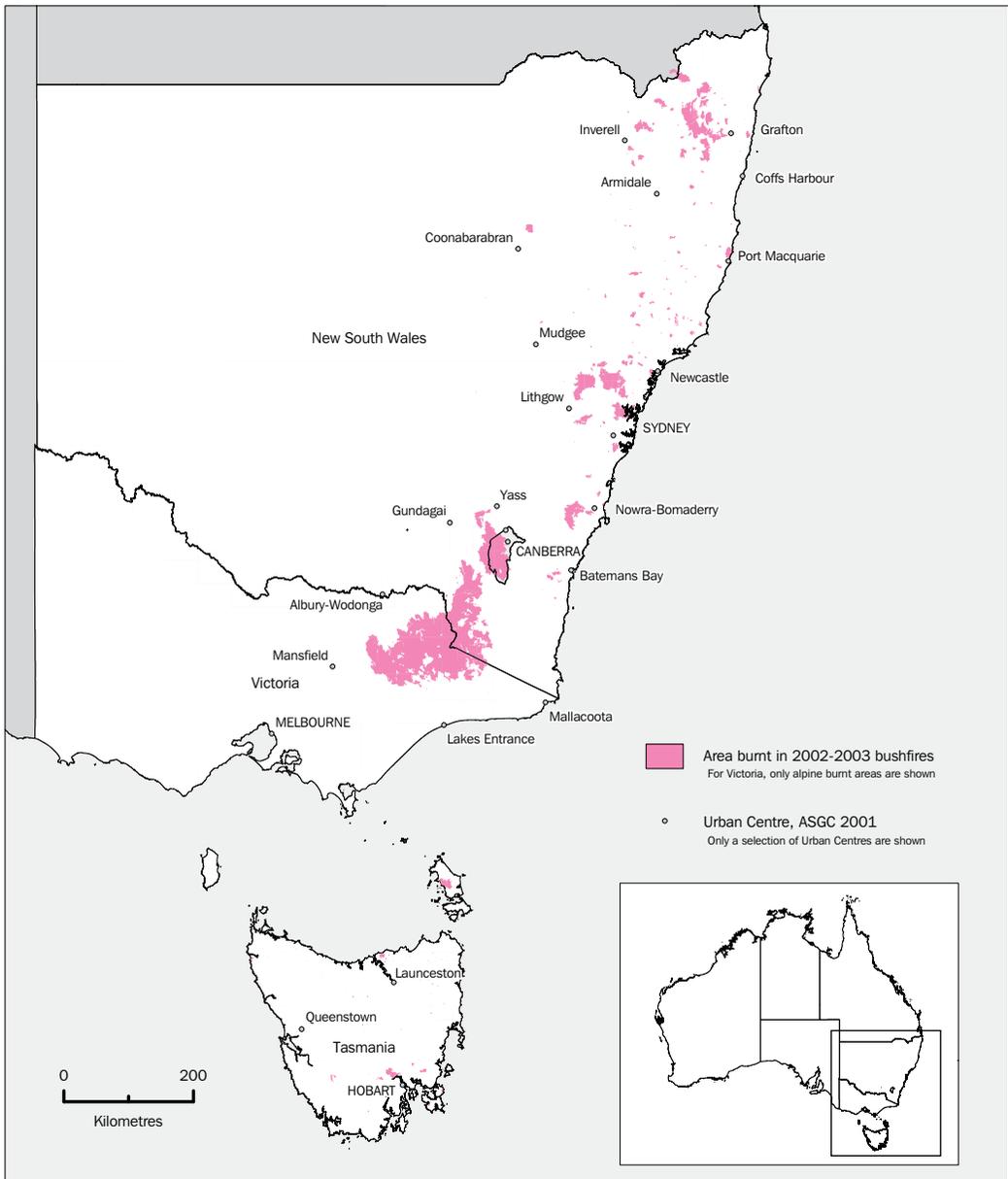
**24.34 KEY BUSHFIRE SEASON STATISTICS — 2002–03**

	Bushfires attended by relevant agency(a)	Area burnt	Fatalities resulting from a bushfire	Houses destroyed	Stock lost
	no.	'000 ha	no.	no.	no.
New South Wales(b)	459	1 465	3	86	3 400
Victoria	843	1 346	(c)—	41–43	10 000–11 000
Queensland	2 618	1 056	n.a.	6	n.a.
South Australia	1 419	50	—	(d)4	27
Western Australia	656	2 112	—	n.a.	n.a.
Tasmania	n.a.	52	—	(d)6	n.a.
Northern Territory(e)	n.a.	15 000	n.a.	n.a.	n.a.
Australian Capital Territory	n.a.	160	4	501	n.a.
<b>Total</b>	<b>5 999</b>	<b>21 241</b>	<b>7</b>	<b>644–646</b>	<b>13 427–14 427</b>

(a) The definition of a bushfire may differ between states. However, the most reliable and contemporary information was reported. (b) NSW data applies to the period from 1 July 2002 to 28 February 2003. (c) One Victorian firefighter died as a result of a flash flood while returning from fighting a fire. (d) Houses that were damaged or destroyed. (e) NT data applies to the period from August to November 2002.

Source: AFAC 2002; CALM 2003; CFA 2003b; DSE 2003f, 2003g, 2003j; EPA and QPWS 2002; McLeod 2003 and Brinkworth, Chuter, Dowling and Kirk pers. comm.

**24.35 BURNT AREA IN NEW SOUTH WALES, AUSTRALIAN CAPITAL TERRITORY, TASMANIA AND ALPINE VICTORIA — 2002-03**



Source: NSW Rural Fire Service; Department of Sustainability and Environment and Forestry Tasmania.

## New South Wales

In New South Wales, 1.46 million ha were burnt over 151 consecutive days from 27 September 2002 to 24 February 2003 (A. Brinkworth, New South Wales Rural Fire Service 2003, pers. comm. 15 August 2003; RFS 2003b). The fires spread from the north east of the state in September, to the south east in February. New South Wales had the most protracted fire season of all the states and territories (Brinkworth op. cit.).

A Rural Fire Service (RFS) Task Force is a group of five fire trucks and crew, often from different districts, which attends incidents outside their local area for a 72-hour period under the control of a task force commander. Over the duration of the season, 485 task forces were deployed in New South Wales, incorporating 11,836 RFS personnel and involving 43,481 firefighter/days. At the height of the bushfire activity, in one day, 53 multi-agency task forces were deployed. In addition to firefighters, 180 personnel from all agencies were used as Incident Controllers and 6,698 RFS personnel were used in Incident Management Teams (IMT). In total, it is estimated that 35,000 personnel from all agencies were used for fire fighting (including task forces and local resources) and IMTs during the season. Interstate assistance to New South Wales included 1,157 firefighters and IMT personnel (Brinkworth op. cit.).

At the height of the season the RFS used 103 aircraft, and in total 121 carried out 2,098 taskings, comprising approximately 80% rotary wing and 20% fixed wing. Some 86 residential properties were destroyed throughout New South Wales; 28 were substantially damaged. In addition, 33 other major structures, and 188 sheds, garages and outbuildings were destroyed (Brinkworth op. cit.).

Three civilians died during bushfire emergencies. In excess of 400 significant injuries were reported by firefighters; those which required treatment by a health professional — typically heat stress, dehydration, smoke inhalation, cuts, strains and sprains (Brinkworth op. cit.). No firefighter deaths resulted from the bushfire emergencies. However three deaths during time on duty have been recorded since 1 July 2002.

## Victoria

Throughout Victoria, 1.35 million ha were burnt by 843 wildfires on public land during the 2002–03 season (DSE 2003f). The most activity occurred

during a 59 day period from the 8 January to 7 March 2003 when the fires were declared 'contained' (DSE 2003g; CFA 2003b). These were the state's largest bushfires since 1939 when more than 1.5 million ha were burnt (DSE 2003h). Most of the area burnt was in national parks and state forest areas, although some 90,000 ha of private land was burnt (DSE 2003i).

Responsibility for the management of rural bushfires in Victoria lies with the Department of Sustainability and Environment, Department of Primary Industries and Country Fire Authority. The former are responsible for managing and protecting state forests, national parks and crown land which cover 7.7 million ha. The CFA is responsible for fire suppression on approximately 15 million ha of private land in rural and regional Victoria, including provincial cities and towns (DSE 2003i). At the peak of the fires there were more than 6,070 personnel fighting the fires from various Victorian state government agencies, CFA volunteers, as well as interstate and international firefighters. 81 four wheel drive fire tankers, and 46 aircraft were used to combat the fires, of which approximately two-thirds of the latter were fixed wing and one-third were helicopters (DSE 2003g).

One DSE firefighter was killed while returning from fighting fires (CFA 2003b; DSE 2003j).

The fires burned: 41–43 homes, destroyed 3 bridges, 200–213 other buildings and structures, and 3,000 km of fencing. Estimates of livestock killed range between 10–11,000 (CFA 2003c; DSE 2003g).

## Queensland

In Queensland, information about all vegetation fires, large or small is stored either on the Rural, or Urban Incident Databases depending on the fire locality. Because there is scope for duplication of information when rural and urban fire crews attend the same fires, the Rural Incident Database information has been used for Queensland. As the submission of incident reports by rural brigades is not complete, the extent of their work may be underestimated (K. Kirk, Queensland Fire and Rescue Service, 2003, pers. comm. 8 August 2003).

There were 2,618 fires in Queensland from July 2002 until June 2003 covering over one million ha. The largest fire burnt an area of 200,000 ha (Kirk op. cit)

## South Australia

In 2002–03 the South Australia Country Fire Service (CFS) attended 34 forest fires, 677 scrub and grass fires, and 706 grass and stubble fires. The area burnt covered an area of almost 50,000 ha. This is more than double the total area burnt in the previous season. Most of the bushfires in South Australia were contained and extinguished on the same day, but there were several large fires that continued to burn for four to seven days. In total 36,413 personnel and 6,125 appliances were involved in rural fire fighting during the 2002–03 fire season. The CFS aerial water bombers were used at 87 incidents during the season (Y. Dowling, South Australia Country Fire Service, 2003 pers. comm. 8 July 2003).

There were no fatalities, but scrub fires caused damage to a small number of houses and other buildings, some vehicles and fencing. There was little loss of stock (Dowling op. cit.).

## Western Australia

The 2002–03 bushfire season in the southern half of Western Australia have been described as the one of the most severe in 42 years (CALM 2003). A total of 656 wildfires burnt 2.11 million ha of land managed by the Department of Conservation and Land Management (CALM). Of this, more than half (1.15 million ha) occurred in other crown lands, 0.53 million ha in National Parks, 0.16 million ha in nature reserves and 0.15 million ha in private property.

The cost of suppressing the fires on the state's conservation lands was \$12.3m, a three-fold increase on the average cost of fire fighting over the past five years. This was due to the large number of fires, and the difficulty in controlling and securing the fires under the severe weather conditions and very dry fuel loads (CALM 2003). Despite the hazardous conditions during bushfire suppression and during prescribed burning operations there was only one fire fighter seriously injured.

CALM contracted six fixed wing water bomber aircraft during the summer months of the 2002–03 season, and in addition Fire and Emergency Services Authority of Western Australia (FESA) contracted two helicopters. The fixed wing aircraft dropped 1,151 loads (over 2.8 million litres) of water and foam during 642 operational hours and it was estimated that they saved public and private assets and natural resources worth \$10.6m (CALM 2003).

## Tasmania

In mid-January 2003, bushfires destroyed 52,000 ha of grassland and forest in Tasmania during some of the state's worst bushfires since 1967 (D. Chuter, Forestry Tasmania, 2003, pers. comm. 17 April 2003; *Statistics Tasmania, 2003*). This included: 29,500 ha of private property, 16,500 ha of National Parks and State Reserves, and 6,000 ha of state forest. The longest running fire lasted about four weeks (Chuter op. cit.). There were no fatalities associated with these fires and loss of property was relatively minor.

## Northern Territory

Central Australia experienced bushfires which burnt more than 15 million ha of the region between August and November 2002. This exceeded the previous record fire event which occurred in the mid-1970s. The fires were caused by a combination of factors including an increased fuel load in the past three years caused by above average rainfall, followed by a record dry period from February to November 2002. Frosts that occurred throughout winter killed many leaves, further dehydrating trees and enhancing fuel load volatility (AFAC 2002).

## Australian Capital Territory

The Bureau of Meteorology described weather conditions leading up to January 2003 in their submission to the inquiry into the Australian Capital Territory bushfires (McLeod 2003). The drought prevailing at the time was described as one of the most severe in the nation's recorded history. Significant areas of the country were experiencing serious or severe rainfall deficiencies, below normal atmospheric humidity and cloudiness, and daytime temperatures were at record high levels. Rainfall in the Australian Capital Territory from October to December 2002 was less than one-third (40.2 mm) of the median (150.4 mm) and average maximum temperatures in November 2002 were five degrees above average. The Bureau identified this period of time as being critical in the lead-up to the January 2003 bushfire event.

On 18 January 2003, the most severe fires approached and then devastated some suburbs of Canberra. They were driven by strong winds and the fire's intensity was increased by high temperatures, low humidity and high fuel loads. By mid-afternoon, at the height of the fires, winds were gusting to 78 km/h, relative humidity was below 10%, and the air temperature was in the high 30 degrees celsius (McLeod 2003).

During the period 8–30 January, 2003 bushfires burnt approximately 160,000 ha, 66% of Australian Capital Territory's land area, including 110,000 ha of nature reserves and national parks, 27,000 ha of farmland and rural housing, and 11,000 ha of plantation forestry (ACT Bushfire Recovery Taskforce 2003a; Environment Business 2003). A further 100,000 ha were burnt in adjoining New South Wales (McLeod 2003). The 2003 fires burnt a significantly larger area than the 1957–58 fires (104,000 ha), the previous largest area burnt in the Australian Capital Territory (ACT Emergency Services Bureau 2003a).

The 2003 fires killed four people and over 500 homes were destroyed (ACT Bushfire Recovery Taskforce 2003b) including 87 rural houses and 414 located in urban areas (McLeod 2003). A further 175 houses suffered damage. It was estimated that 419 km of fencing was destroyed (ACT Chief Minister's Department 2003). The estimated cost from damage to rural properties, parks and forests, houses and urban infrastructure was approximately \$300m (McLeod 2003). Eight of the properties (less than 2%) were uninsured which was lower than the 18% of owner-occupied households that were found to be uninsured after the 1994 Sydney bushfires (ACT Bushfire Recovery Taskforce 2003c).

## Environmental assets

The economy has a complex relationship with the environment. It provides the raw materials and energy for the production of goods and services that support our lifestyles, but the environment also sustains damage through the activities of households and businesses. The national accounts are sometimes criticised for including the value of goods and services produced and the income generated through the use of environmental assets, but not reflecting the economic cost of depleting environmental assets or the damage that arises from economic activity. Thus,

...a country could exhaust its mineral resources, cut down its forests, erode its soil, pollute its aquifers, and hunt its wildlife to extinction, but measured income would not be affected as these assets disappeared (Repetto et al. 1989).

This anomaly is well recognised by national accountants, as are a number of other deficiencies relating to the use of national accounts as a comprehensive measure of the 'wellbeing' of society. For example, the value of unpaid housework is excluded from GDP.

This section discusses how the environment is currently treated in the Australian national accounts (*Australian System of National Accounts, 2000–01* (5204.0)), and gives a broad overview of the work being done by the ABS to extend the core national accounts in what could be called a satellite account for the environment.

## Environmental assets in the Australian national accounts

For an asset to be included in the Australian 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. Economic environmental assets 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 economic assets 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. However, 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.

The environmental assets in the Australian national and sector balance sheets are land, significant subsoil assets, plantation timber, and native standing timber available for exploitation. Land valuations are available through administrative sources, and net present value techniques (which take into account current production rates, prices, costs, and discount rates) are used to value both subsoil and native forest assets. Plantation standing timber is also considered an environmental asset and plantations are included in the balance sheet as inventories because timber growth is controlled. Water and fish stocks have not been included on the Australian national balance sheet due to a lack of available data.

The Australian national balance sheet recorded \$3,797b worth of assets at 30 June 2002, of which \$1,364b (36%) were economic environmental assets (table 24.36).

### 24.36 AUSTRALIA'S TOTAL ASSETS(a) — 30 June

	1994	1995	1996	1997	1998	1999	2000	2001	2002
	$b	$b	$b	$b	$b	$b	$b	$b	\$b
Financial	169	185	193	230	300	325	426	484	472
Buildings and structures	973	1 024	1 066	1 107	1 159	1 236	1 319	1 427	1 479
Machinery and equipment	257	265	268	274	291	301	316	322	335
Other produced	104	108	107	110	114	121	133	139	141
Other non-produced	—	—	—	—	—	—	3	6	6
Environmental	678	727	747	833	904	984	1 079	1 202	1 364
<b>Total assets</b>	<b>2 180</b>	<b>2 309</b>	<b>2 382</b>	<b>2 554</b>	<b>2 767</b>	<b>2 968</b>	<b>3 277</b>	<b>3 580</b>	<b>3 797</b>

(a) At current prices.

Source: Australian System of National Accounts, 2001–02 (5204.0).

While land accounts for 81% of the value of Australia's economic environmental assets, the value of rural land accounts for only 12% of the total value of land (table 24.37). Subsoil assets account for 18% and timber (native and plantation) account for 1% of Australia's economic environmental assets. No values are included for other environmental assets. The value of environmental assets in current prices grew strongly during the 1990s, doubling between 30 June 1994 and June 30 2002. Much of this growth, however, was due to rising prices. Environmental assets grew in chain volume terms by 10% during the same period.

### Measuring depletion

Depletion is defined in the international *System of National Accounts 1993* (SNA93) as the:

...reduction in the value of deposits of subsoil assets as a result of the physical removal and using up of the assets, ... the depletion of water resources, and the depletion of natural forests, fish stocks in the open seas and other non-cultivated biological resources as a result of harvesting, forest clearance, or other use (SNA93, 12.29 and 12.30).

Depletion in an economic sense results because the value of the resource stock has been lowered through its use in a productive activity, and the 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 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. Generally, one has to resort to capital theory to undertake this valuation. More detail of the theory and calculations used by the ABS are presented in *Environment by Numbers, 2003* (4617.0).

### 24.37 AUSTRALIA'S ENVIRONMENTAL ASSETS(a) — 30 June

	1994	1995	1996	1997	1998	1999	2000	2001	2002
	$b	$b	$b	$b	$b	$b	\$b	\$b	\$b
Rural land	65	68	86	91	101	105	110	120	134
Other land	532	558	557	619	668	730	797	871	974
Oil and gas	44	55	60	67	70	72	82	101	118
Other subsoil	28	38	36	47	56	68	81	98	127
Native standing timber	2	2	2	2	2	2	3	3	3
Plantation standing timber	6	6	6	7	7	7	8	8	8
<b>Total assets</b>	<b>678</b>	<b>727</b>	<b>747</b>	<b>833</b>	<b>904</b>	<b>984</b>	<b>1 079</b>	<b>1 202</b>	<b>1 364</b>

(a) At current prices.

Source: Australian System of National Accounts, 2001–02 (5204.0).

## Subsoil assets

The 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. A discovery occurs when previously unknown stocks of minerals are found and delineated. In the national accounts the value of a new discovery in itself is not considered as production or income because it is a gift of nature. Graph 24.38 shows that depletions are increasing at a relatively constant rate, whereas discoveries are erratic. The end result is that in some years more subsoil resources are found than are depleted, while in other years the reverse is true and in some years depletions and discoveries are more or less equal in value.

## Land

If land is used sustainably, it has an infinite life and therefore no adjustment for 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 deducting price rises due to inflation). The details of this are presented in *Environment by Numbers, 2003* (4617.0).

Changes in the value of agricultural land can be determined from data on market values or land rates data. However, data for land values are

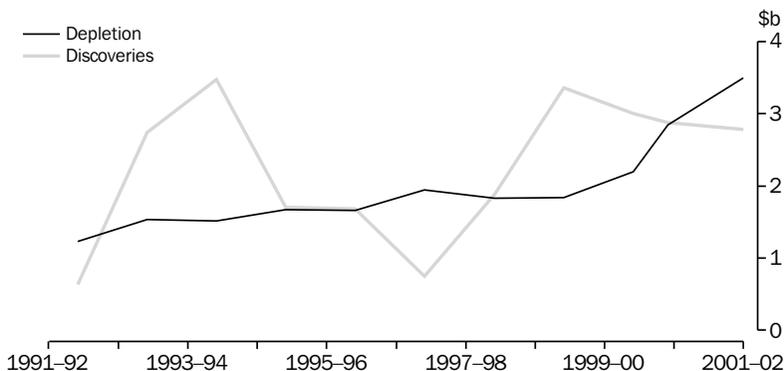
affected by a host of factors other than changes in productive capacity from the impact of land degradation, including inflation, technological advances and changes in land use due to re-zoning, subdivision and 'lifestyle' considerations (Roberts 1997).

Two recent national studies used different approaches to measuring economic losses due to land degradation.

- Kemp and Connell (2001) 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 \$14.2b in 1999. This represents the total accumulated value of losses in land value due to degradation.
- The National Land and Water Resources Audit (NLWRA 2002b) used models to estimate the 'yield gap' that is, the difference between profits with and without soil degradation. Lost profit at full equity due to salinity, sodicity and acidity was estimated as \$2.6b in 1996–97.

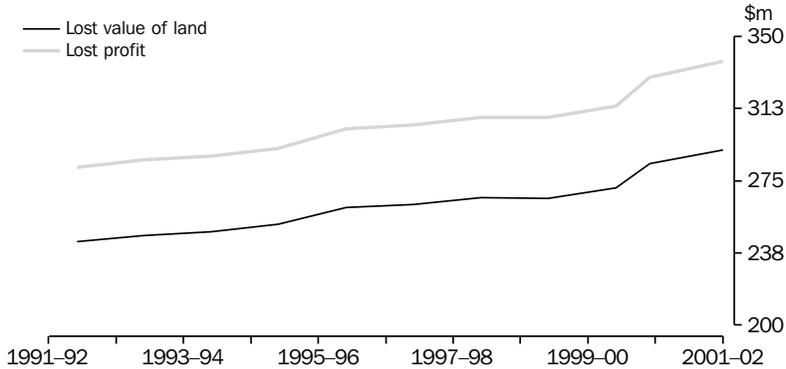
The ABS has used the data from these studies to produce estimates of the effect of land degradation on the value of land and the lost profits from agricultural production. The results of this are presented in graph 24.39.

**24.38 SUBSOIL DEPLETION AND DISCOVERIES**



Source: ABS data available on request, Australian National Accounts.

## 24.39 LAND DEGRADATION



Source: ABS data available on request, Australian National Accounts.

### 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 depletion of native forests are not yet available. However, given the value of native forests on the national balance sheet is \$3.1b compared with \$246b for subsoil assets, it is expected that depletion will be relatively insignificant. 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.

### Adjusting the Australian national accounts

There is currently an asymmetry in the national accounts between the treatment of produced assets such as buildings, and plant and natural

(non-produced) assets. Depreciation of produced assets (termed consumption of fixed capital in the national accounts (COFC)) is deducted to derive the various 'net' income measures in the national accounts such as net domestic product (NDP), net operating surplus (NOS), net national income and net saving. No such deduction is made for natural 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 Australian national accounts in this respect.

The experimental estimates derived for the value of depletions and discoveries 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 illustrated in table 24.40. 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.

## 24.40 PRODUCTION AND CAPITAL INCOME ADJUSTED FOR DEPLETION AND ADDITIONS(a)

	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	$m	$m	$m	$m	$m	$m	\$m
<i>plus</i>							
Subsoil depletion	1 660	1 942	1 826	1 837	2 198	2 845	3 497
Land degradation	302	304	308	308	314	329	337
<i>less</i>							
Subsoil additions	1 681	751	1 882	3 363	3 009	2 879	3 662
<i>plus</i>							
Cost of mineral exploration	1 685	2 001	2 049	1 706	1 400	1 727	1 545
<i>less</i>							
COFC on mineral exploration	1 199	1 248	1 316	1 364	1 448	1 509	1 543
<i>equals</i>							
<b>Net depletion adjustment</b>	<b>767</b>	<b>2 248</b>	<b>985</b>	<b>-876</b>	<b>-545</b>	<b>-513</b>	<b>174</b>
GDP	502 828	529 886	561 229	591 917	628 917	669 307	712 980
<i>less</i>							
Consumption of fixed capital	78 584	80 330	86 072	91 216	97 821	104 927	112 507
<i>equals</i>							
NDP	424 244	449 556	475 157	500 701	531 096	584 380	600 473
<i>less</i>							
Net depletion adjustment	767	2 248	985	-876	-545	-513	174
<i>equals</i>							
<b>Depletion adjusted NDP</b>	<b>423 477</b>	<b>447 308</b>	<b>474 172</b>	<b>501 577</b>	<b>531 641</b>	<b>563 867</b>	<b>600 299</b>
GOS and GMI(b)	202 687	210 158	227 762	235 465	252 924	265 261	285 564
<i>less</i>							
Consumption of fixed capital	78 584	80 330	86 072	91 216	97 821	104 927	112 507
<i>equals</i>							
NOS	124 103	129 828	141 690	144 249	155 103	160 334	173 057
<i>less</i>							
Net depletion adjustment	767	2 248	985	-876	-545	-513	174
<i>equals</i>							
<b>Depletion adjusted NOS</b>	<b>123 336</b>	<b>127 580</b>	<b>140 705</b>	<b>145 125</b>	<b>155 648</b>	<b>159 821</b>	<b>172 883</b>
Net saving	10 750	19 646	20 654	18 836	23 068	20 471	23 610
<i>less</i>							
Net depletion adjustment	767	2 248	985	-876	-545	-513	174
<b>Depletion adjusted saving</b>	<b>9 983</b>	<b>17 398</b>	<b>19 669</b>	<b>19 712</b>	<b>23 613</b>	<b>19 958</b>	<b>23 436</b>

(a) At current prices. (b) Gross operating surplus and gross mixed income.

Source: ABS data available on request, Australian National Accounts.

The net saving levels are changed by the same amount as for NOS, but the nation's net lending position is left unchanged.

Adjusting the Australian national accounts for depletion and additions of subsoil assets also affects growth rates, which may increase or decrease. As table 24.41 shows, the adjustments have the biggest impact on both NDP and NOS in 1994-95, due to the low value of subsoil asset additions in that year compared with the previous one.

### Future work on environmental accounting

The work program on environmental satellite accounting is continuing. The ABS hopes to extend the depletion adjustment to include native forests. Other areas of work will be to highlight environmental protection expenditures and to look at extending the economic asset boundary to include the value of water and possibly fish. Work on the valuation of environmental damage (externalities associated with human and economic activity) is an undeveloped field of research at present.

**24.41 CHANGES IN PRODUCTION AND CAPITAL INCOME GROWTH AFTER ADJUSTMENT FOR DEPLETION AND ADDITIONS(a)**

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	%	%	%	%	%	%	%	%
GDP	5.4	6.7	5.4	5.9	5.5	6.3	6.4	6.5
NDP	5.9	7.4	6.0	5.7	5.4	6.1	6.3	6.4
Depletion adjusted NDP	5.2	7.4	5.6	6.0	5.8	6.0	6.1	6.5
<b>Net change in NDP growth</b>	<b>-0.6</b>	<b>—</b>	<b>-0.3</b>	<b>0.3</b>	<b>0.4</b>	<b>-0.1</b>	<b>-0.2</b>	<b>0.1</b>
GOS and GMI(b)	3.4	5.5	3.7	8.4	3.4	7.4	4.9	7.7
NOS	3.4	7.1	4.6	9.1	1.8	7.5	3.4	7.9
Depletion adjusted NOS	1.4	7.0	3.4	10.3	3.1	7.3	2.7	8.2
<b>Net change in NOS growth</b>	<b>-2.0</b>	<b>—</b>	<b>-1.3</b>	<b>1.2</b>	<b>1.3</b>	<b>-0.3</b>	<b>-0.7</b>	<b>0.2</b>

(a) At current prices. (b) Gross operating surplus and gross mixed income.

Source: ABS data available on request, Australian National Accounts.

## Nature conservation

Australia has a long history of establishing and managing conservation reserves, such as national parks. Recently there has been greater attention placed on the establishment of programs aimed at conserving habitats and species on private land. This is significant because almost 63% of all land in Australia is privately owned. Around 23% of land is publicly owned, with the remainder owned by Aboriginal and Torres Strait Islanders (AUSLIG 1993). Information is presented on public conservation reserves as well as initiatives designed to promote conservation on private land, including the activities of non-government organisations involved in nature conservation.

### Collaborative Australian Protected Areas Database

The Collaborative Australian Protected Areas Database (CAPAD) records the area of conservation reserves in each state and territory, using the World Conservation Union (IUCN) classification system of protected areas (Environment Australia 2003a). The classification system comprises seven categories based on the main (or primary) management intent of protected areas as follows:

- IA — Strict nature reserve: managed mainly for science
- IB — Wilderness area: wilderness protection
- II — National park: ecosystem conservation and recreation

- III — National monument: conservation of specific natural features
- IV — Habitat/species management area: conservation through management intervention
- V — Protected landscape/seascape: landscape/seascape conservation and recreation
- VI — Managed resource protected areas: sustainable use of natural ecosystems.

Table 24.42 shows the amount of protected land in each IUCN category by state and territory. Most of the land recorded in CAPAD is public land.

### Conservation on private land

Private land occupies around 4.8 million square kilometres or 63% of Australia's land mass (AUSLIG 1993). A number of programs have been developed to increase the amount of area of private land dedicated to nature conservation. These programs are administered by state government departments and non-government organisations (NGOs). Some NGOs operate within a single state while others operate throughout Australia. Table 24.43 describes the different programs or mechanisms for implementing conservation on private land.

Consideration is being given to including in CAPAD data from several state and territory government operated programs as well as those operated by NGOs, for example, Australian Wildlife Conservancy, Birds Australia, Bush Heritage Trust and Earth Sanctuaries Limited.

## 24.42 PROTECTED AREAS, By state and territory — December 2002

	IUCN category							Total(a)
	IA	IB	II	III	IV	V	VI	
AREA ('000 ha)								
New South Wales	735	1 546	(b)2 957	1	48	5	22	(c)5 336
Victoria	224	202	2 778	70	46	—	104	3 424
Queensland	21	—	6 663	35	52	1	348	7 120
South Australia	(d)6 812	2 216	2 645	187	1 890	506	10 988	25 244
Western Australia	10 810	—	5 929	74	15	1	10 340	27 169
Tasmania	21	—	1 505	18	174	91	744	2 550
Northern Territory	44	—	(e)6 164	7	—	185	90	6 490
Australian Capital Territory	—	—	128	—	—	—	—	128
<b>Australia</b>	<b>(d)18 668</b>	<b>3 963</b>	<b>28 767</b>	<b>391</b>	<b>2 225</b>	<b>789</b>	<b>22 636</b>	<b>(c)77 462</b>
PROPORTION (%)								
New South Wales	0.9	1.9	3.7	—	0.1	—	—	6.7
Victoria	1.0	0.9	12.2	0.3	0.2	—	0.5	15.0
Queensland	—	—	3.9	—	0.0	—	0.2	4.1
South Australia	6.9	2.3	2.7	0.2	1.9	0.5	11.2	25.7
Western Australia	4.3	—	2.4	0.3	0.1	—	4.1	10.8
Tasmania	0.3	—	22.0	0.3	2.5	1.3	10.9	37.3
Northern Territory	—	—	4.6	—	—	0.1	0.1	4.8
Australian Capital Territory	—	—	54.4	—	—	—	—	54.4
<b>Australia</b>	<b>2.4</b>	<b>0.5</b>	<b>3.7</b>	<b>0.1</b>	<b>0.3</b>	<b>0.1</b>	<b>2.9</b>	<b>10.1</b>

(a) Column and row totals may not tally exactly due to rounding. (b) Includes 6,000 ha which are Commonwealth-managed National Parks. (c) Includes 23,000 ha to be advised. (d) Includes 565,000 ha of Heritage Agreement Areas. (e) Includes 2,113,000 ha which are Commonwealth-managed National Parks.

Source: *Environment Australia 2003b –2003j*.

## 24.43 PRIVATE LAND CONSERVATION PROGRAMS/MECHANISMS

Program/ mechanism	Description	States/territories where programs/mechanisms operate
Land acquisition	Land is acquired through purchase or bequest and gazetted or proclaimed as a new, or addition to an existing, nature conservation reserve. They are managed in accordance with nature conservation objectives.	NSW, Vic., Qld, SA, WA, Tas., NT
Conservation covenants	A covenant placed upon a property through agreement between the land holder and relevant organisation. It is usually voluntary, binding in perpetuity and registered on the land title, however it may expire with a lease. They aim to protect natural values of the area which is reflected in the management which subsequently occurs. Often a management agreement for the property is negotiated in association with the covenant attachment.	NSW, Vic., Qld, SA, WA, Tas., NT
Revolving funds	Land is purchased by an organisation, a conservation covenant attached, and the property sold to provide revenue for future land purchases.	NSW, Vic., Qld, SA, WA
Non-binding agreements	Voluntary programs which invite landholders to register their property and receive information and advice regarding ecologically-sound land management. They aim to integrate conservation with other land management objectives. Also, included in this category are management agreements which offer landholders payments to carry out restoration works that conserve important conservation areas, but do not necessarily protect the land in perpetuity.	NSW, Vic., Qld, WA, Tas., NT

Source: ABS data available on request, *Environment Collection*.

The data contained in the latest version of CAPAD (CAPAD 2002) does not include a significant amount of areas registered under these programs. One of the reasons for this was that majority of programs did not conform easily to the IUCN categories and/or the information was not available when CAPAD 2002 was being formulated. However, some information from the following programs was included, for example: South Australian Department of Environment and Heritage (DEH) Heritage Agreements and Tasmanian Department of Primary Industries, Water and Environment covenants, as implemented through the Private Forest Reserves Program. Some information from land acquisition programs was also included from: NSW National Parks and Wildlife Service, Department of Sustainability and Environment; Queensland Parks and Wildlife Service, South Australian DEH; Western Australian Department of Conservation and Land Management.

## National NGOs

Many NGOs are involved in obtaining private land and implementing programs to conserve flora and fauna, habitats and ecosystems. Most are non-profit, rely on volunteers for administration and on-ground works, and obtain finance through government funding, public donations and bequests. Some examples of major environmental organisations that have increased the amount of private land managed for nature conservation in more than one state or territory are presented in table 24.44.

The Australian Wildlife Conservancy (AWC) is a charitable organisation that was established in 1991, when Karakamia Sanctuary in the Perth Hills was purchased (AWC 2003). At June 2002, AWC owned 10 sanctuaries (table 24.44) including

properties in: Western Australia (five), South Australia (three), Queensland (one), and New South Wales (one). Five reserves were purchased in 2001–02, comprising a total area of 123,624 ha (AWC 2002).

Birds Australia began as the Royal Australasian Ornithologists Union (RAOU) in 1901. It is dedicated to the conservation, study and enjoyment of Australia's native birds and their habitats (Birds Australia 2003a). The organisation owns two former pastoral leases, Gluepot (South Australia) and Newhaven (Northern Territory) (table 24.44).

The Bush Heritage Trust was established in 1990 to acquire land of high conservation significance using funding provided by public donations and funding organisations (BHT 2002, 2003). In June 2002, the organisation had 12 reserves in four states (table 24.44) (BHT 2002). However, the addition of one property covering 68,619 ha in Western Australia in January 2003 boosted the total to 129,964 ha (R. Leeman, Bush Heritage Trust, 2003, pers. comm. 11 March 2003). This property is now called the Charles Darwin Reserve.

Earth Sanctuaries Limited (ESL) is a publicly listed conservation company that purchases land which they actively manage for conservation by eradicating feral pests, erecting feral-proof fencing and implementing revegetation programs (ESL 2003a). At June 2002 the organisation owned Little River Earth Sanctuary (Victoria) and managed Hanson Bay (Kangaroo Island, South Australia) (table 24.44) (ESL 2003b, 2003c). In May 2003, ESL purchased Waratah Park (Sydney) (ESL 2003d).

### 24.44 AREAS OF CONSERVATION ESTATE OWNED AND MANAGED BY MAJOR ENVIRONMENTAL ORGANISATIONS — 2002

State	Australian Wildlife Conservancy	Birds Australia	Bush Heritage Trust	Earth Sanctuaries Limited
New South Wales	65 000	—	963	12
Queensland	38 000	—	59 615	—
Victoria	—	—	—	1 200
South Australia	20 624	54 390	—	(a)34
Western Australia	450 066	—	(b)389	—
Tasmania	—	—	417	—
Northern Territory	—	262 600	—	—
Australian Capital Territory	—	—	—	—
<b>Total</b>	<b>573 690</b>	<b>316 990</b>	<b>(b)61 384</b>	<b>(a)1 246</b>

(a) Does not include the 3,960 ha reserve managed but not owned in South Australia. (b) An additional 69,008 ha reserve was purchased in January 2003.

Source: AWC 2002; BHT 2002; Birds Australia 2003b, 2003c; B. Jackson, Earth Sanctuaries Limited, 2003, pers. comm., 26 June 2003.

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## SCIENCE AND INNOVATION

The application of science and innovation to business processes influences the strength and competitiveness of industry by providing a basis for innovative change and encouraging economic growth and development.

Australia has a range of statistics relating to science and innovation, many of which are compiled by the Australian Bureau of Statistics (ABS). The key indicators relate to Australia's research and development effort and the extent to which businesses innovate. Australia's statistics in this field are based on international standards, particularly the *Frascati Manual* developed by the Organisation for Economic Co-operation and Development, which is the basic international source of methodology for collecting and using research and development statistics.

A number of additional indicators on science and innovation, not included in this chapter, are compiled by the Australian Government Departments of Industry, Tourism and Resources, and Education, Science and Training.

## Expenditure and human resources devoted to R&D

The ABS defines research and development (R&D) as 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.

Statistics on the amount of expenditure and human resources devoted to R&D in the business sector are collected annually through a survey of all likely R&D performers. Comparable statistics

on the higher education, government (national and state/territory) and private non-profit sectors are collected biennially.

Tables 25.1 and 25.2 summarise the latest statistics available. The data show that after increasing by only 2% in the period 1996–97 to 1998–99, gross expenditure on R&D increased by 16% from \$8,940m in 1998–99 to \$10,344m in 2000–01. All sectors showed an increase in R&D expenditure compared with 1998–99.

### 25.1 EXPENDITURE ON R&D

Sector	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02
	\$m	\$m	\$m	\$m	\$m	\$m
Business	4 234.7	4 221.1	4 094.7	4 112.4	4 917.4	5 545.5
Government						
Commonwealth	1 266.6	n.a.	1 207.1	n.a.	1 424.8	n.a.
State/territory	797.7	n.a.	862.8	n.a.	943.6	n.a.
Total	2 064.3	n.a.	2 070.0	n.a.	2 368.4	n.a.
Higher education(a)	2 307.6	n.a.	2 555.1	n.a.	2 774.6	n.a.
Private non-profit	185.8	n.a.	220.1	n.a.	283.2	n.a.
<b>Total</b>	<b>8 792.4</b>	<b>n.a.</b>	<b>8 939.9</b>	<b>n.a.</b>	<b>10 343.5</b>	<b>n.a.</b>

(a) Data for the calendar year ending within the financial year shown.

Source: *Research and Experimental Development, All Sector Summary, Australia (8112.0)*; *Research and Experimental Development, Businesses, Australia (8104.0)*.

### 25.2 HUMAN RESOURCES DEVOTED TO R&D

Sector	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02
	'000 person years	'000 person years	'000 person years	'000 person years	'000 person years	'000 person years
Business	26.4	24.8	25.1	26.5	28.3	30.4
Government						
Commonwealth	10.4	n.a.	9.5	n.a.	9.7	n.a.
State/territory	8.8	n.a.	9.2	n.a.	8.7	n.a.
Total	19.2	n.a.	18.7	n.a.	18.4	n.a.
Higher education(a)	42.7	n.a.	45.5	n.a.	46.3	n.a.
Private non-profit	2.4	n.a.	2.5	n.a.	2.7	n.a.
<b>Total</b>	<b>90.7</b>	<b>n.a.</b>	<b>91.8</b>	<b>n.a.</b>	<b>95.7</b>	<b>n.a.</b>

(a) Data for the calendar year ending within the financial year shown.

Source: *Research and Experimental Development, All Sector Summary, Australia (8112.0)*; *Research and Experimental Development, Businesses, Australia (8104.0)*.

## Expenditure on R&D — how does Australia compare internationally?

The most commonly used indicator for comparison purposes is the ratio of expenditure on R&D to gross domestic product (GDP). As table 25.3 shows, in 2000–01 Australia's R&D expenditure was 1.53% of its GDP, ranking it below Sweden (3.65%), Finland (3.40%), Japan (2.98%), Iceland (2.77%), United States of America (2.72%), Republic of (South) Korea (2.65%), Switzerland (2.63%), Germany (2.49%), Denmark (2.19%), France (2.18%), Belgium (1.96%), the Netherlands (1.94%), Canada (1.87%), the United Kingdom (1.85%), Austria (1.84%) and Norway (1.65%).

In terms of business enterprise R&D, Australia's ratio of R&D expenditure to GDP (0.72%) is again below the ratios for the industrialised countries referred to earlier, and is also below the rates for the Czech Republic and Ireland.

For government sector R&D as a percentage of GDP, Australia ranks higher. An R&D to GDP ratio of 0.35% places it fifth in the group of Organisation for Economic Co-operation and Development (OECD) member countries, behind only Iceland (0.71%), France (0.38%), New Zealand (0.37%) and Finland (0.36%). Government sector R&D as a percentage of GDP is much higher for Australia than for the United States of America, Canada or the United Kingdom.

For the higher education sector, Australia ranks in the top half. With an R&D to GDP ratio of 0.41%, Australia ranks behind Sweden (0.78%), Finland (0.61%), Switzerland (0.60%), the Netherlands (0.57%), Canada (0.55%), Norway (0.47%), Belgium (0.47%), Iceland (0.45%), Japan (0.43%) and Denmark (0.43%).

**25.3 EXPENDITURE ON R&D AS A PERCENTAGE OF GDP, OECD countries — 2000–01**

Country	Business %	Government %	Higher education %	All sectors(a) %
Sweden(b)	2.74	0.12	0.78	3.65
Finland	2.41	0.36	0.61	3.40
Japan	2.11	0.29	0.43	2.98
Iceland	1.56	0.71	0.45	2.77
United States of America	2.04	0.18	0.38	2.72
Korea, Republic of (South)	1.96	0.35	0.30	2.65
Switzerland	1.95	0.03	0.60	2.63
Germany	1.75	0.34	0.40	2.49
Denmark(b)	1.42	0.32	0.43	2.19
France	1.37	0.38	0.41	2.18
Belgium(b)	1.40	0.06	0.47	1.96
Netherlands	1.11	0.25	0.57	1.94
Canada	1.09	0.22	0.55	1.87
United Kingdom	1.21	0.22	0.38	1.85
Austria	n.a.	n.a.	n.a.	1.84
Norway(b)	0.92	0.25	0.47	1.65
<b>Australia</b>	<b>0.72</b>	<b>0.35</b>	<b>0.41</b>	<b>1.53</b>
Czech Republic	0.80	0.34	0.19	1.33
Ireland	0.83	0.09	0.23	1.15
Italy	0.53	0.20	0.33	1.07
New Zealand(b)	0.31	0.37	0.35	1.03
Spain	0.50	0.15	0.28	0.94
Hungary	0.36	0.21	0.19	0.80
Portugal	0.22	0.19	0.29	0.79
Poland	0.25	0.23	0.22	0.70
Greece(b)	0.19	0.15	0.33	0.67
Slovak Republic	0.44	0.17	0.06	0.67
Turkey	0.21	0.04	0.39	0.64
Mexico(b)	0.11	0.19	0.11	0.43

(a) Includes private non-profit. (b) Data for 1999–2000.

Source: OECD, 'Main Science and Technology Indicators, 2003/1'.

## Source of funds for expenditure on R&D

In 2000–01, the business sector funded 46% of all Australian expenditure on R&D. This compares with 41% recorded in 1990–91. The Australian (Commonwealth) Government funded 38% of R&D in 2000–01 (down from 44% in 1990–91) and the state and territory governments funded 8% (down from 11% in 1990–91).

In 2000–01, 92% of funding for R&D carried out by businesses came from the business sector (down from 95% in 1990–91). Commonwealth Government organisations provided 3% of funding for business R&D expenditure in 2000–01.

About 85% of Commonwealth Government sector R&D was funded by Commonwealth Government organisations in 2000–01. The Commonwealth Government proportion of self-funding has dropped from 91% 10 years ago.

About 69% of state government expenditure on R&D was funded by state government organisations in 2000–01. This is significantly lower than a decade earlier, when the proportion was 79%.

About 86% of higher education R&D funding in 2000–01 came from the Commonwealth Government (compared with 89% in 1990–91). Business enterprises provided 5% of the funding in 2000–01, up from 2% a decade earlier.

Commonwealth Government organisations funded 26% of the R&D of the private non-profit sector in 2000–01, while the contribution by state governments was 11%.

Tables 25.4 and 25.5 show the data for 2000–01 and 1990–91 respectively.

**25.4 EXPENDITURE ON R&D, Source of funds — 2000–01**

Sector	Commonwealth Government		State government		Businesses		Other Australian(a)		Overseas		Total
	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m
Business	168.5	3.4	8.4	0.2	4 504.5	91.6	28.3	0.6	207.6	4.2	4 917.4
Government											
Commonwealth	1 213.2	85.1	27.5	1.9	76.9	5.4	73.0	5.1	34.2	2.4	1 424.8
State/territory	71.4	7.6	650.1	68.9	54.5	5.8	159.9	16.9	7.7	0.8	943.6
Total	1 284.6	54.2	677.6	28.6	131.4	5.5	232.9	9.8	41.9	1.8	2 368.4
Higher education(b)	(c)2 395.6	86.3	87.9	3.2	136.2	4.9	94.2	3.4	60.7	2.2	2 774.6
Private non-profit	72.5	25.6	29.8	10.5	18.4	6.5	136.2	48.1	26.3	9.3	283.2
<b>Total</b>	<b>3 921.2</b>	<b>37.9</b>	<b>803.7</b>	<b>7.8</b>	<b>4 790.5</b>	<b>46.3</b>	<b>491.6</b>	<b>4.8</b>	<b>336.5</b>	<b>3.3</b>	<b>10 343.5</b>

(a) Includes funds provided via government levies. (b) Data for calendar year 2000. (c) Includes \$1,746m of General University funds, the majority of which is funding from the Commonwealth Government.

Source: *Research and Experimental Development, All Sector Summary, Australia, 2000–01 (8112.0)*; *Research and Experimental Development, Businesses, Australia 2000–2001 (8104.0)*.

## 25.5 EXPENDITURE ON R&D, Source of funds — 1990–91

Sector	Commonwealth Government		State government		Businesses		Other Australian(a)		Overseas		Total
	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m	% of total	\$m
Business	54.2	2.6	8.8	0.4	1 991.4	94.8	6.0	0.3	39.3	1.9	2 099.8
Government											
Commonwealth	939.5	90.9	8.5	0.8	74.6	7.2	2.5	0.2	9.1	0.9	1 034.0
State/territory	73.9	11.0	526.9	78.6	44.6	6.7	21.1	3.1	3.4	0.5	670.0
Total	1 013.3	59.5	535.4	31.4	119.2	7.0	23.6	1.4	12.5	0.7	1 704.0
Higher education(b)	1 190.6	89.3	29.6	2.2	29.9	2.2	73.4	5.5	9.3	0.7	1 332.8
Private non-profit	24.3	28.5	12.0	14.1	7.7	9.0	38.3	44.9	3.0	3.5	85.5
<b>Total</b>	<b>2 282.4</b>	<b>43.7</b>	<b>585.8</b>	<b>11.2</b>	<b>2 148.2</b>	<b>41.1</b>	<b>141.4</b>	<b>2.7</b>	<b>64.2</b>	<b>1.2</b>	<b>5 222.0</b>

(a) Includes funds provided via government levies. (b) Data for calendar year 1990.

Source: Research and Experimental Development, All Sector Summary, Australia, 1990–91 (8112.0).

## Resources devoted to R&D

### Business sector

Business expenditure on R&D (BERD) in Australia in 2001–02 (table 25.6) was estimated to be \$5,546m at current prices, 13% higher than that recorded in 2000–01. This represented the highest level recorded to date and is the second successive year of significant increase following the declines from 1995–96 to 1998–99 and the levelling off between 1998–99 and 1999–2000. In volume terms, with the effect of changes in prices and wages and salaries removed, BERD increased by 8% in 2001–02 compared with 2000–01 and was 4% above the previous peak level of 1995–96.

Human resources (in person years) devoted to R&D in 2001–02 was 7% higher than in 2000–01.

In 2001–02, BERD was 0.78% of GDP compared to 0.73% in 2000–01. This is the second successive increase in BERD as a percentage of GDP following decreases between 1995–96 and 1999–2000. However, the percentage remains well below the high of 0.87% in 1995–96.

The increase in expenditure on R&D between 2000–01 and 2001–02 was attributable to a 16% increase by the Mining industry, a 10% increase by the Manufacturing industry and a 15% increase by Other industries in total. It should be noted that mineral exploration is excluded from the definition of R&D.

Major research fields in which BERD took place were: Computer software (14%); Communications technologies (11%); Automotive engineering (8%); Manufacturing engineering (8%); Other information, computing and communication sciences (7%); Information systems (6%); and Medical and health sciences (6%) (table 25.7).

A slightly different pattern applied to human resources devoted to R&D, with 20% in Computer software; 10% in Automotive engineering; 8% in Communications technologies; 8% in Manufacturing engineering; 7% in Other information, computing and communication sciences; 6% in Other engineering and technology; and 6% in Information systems (table 25.7).

## 25.6 BUSINESS R&D RESOURCES, By industry

	Businesses		Expenditure on R&D		Effort on R&D	
	2000-01	2001-02	2000-01	2001-02	2000-01	2001-02
	no.	no.	\$m	\$m	'000 person years	'000 person years
Mining (incl. services to mining)	92	108	462	534	1.2	0.8
Manufacturing						
Food, beverage and tobacco	139	136	202	214	1.1	1.3
Textile, clothing, footwear and leather	51	43	27	22	0.2	0.2
Wood and paper product	34	33	100	82	0.3	0.3
Printing, publishing and recorded media	33	40	17	16	0.1	0.1
Petroleum, coal, chemical and associated product	351	349	387	417	2.5	2.4
Non-metallic mineral product	51	52	41	76	0.3	0.3
Metal product	171	174	200	235	1.0	1.0
Motor vehicle and part and other transport equipment	136	127	473	553	3.0	3.4
Photographic and scientific equipment	165	138	184	230	1.4	1.5
Electronic and electrical equipment and appliance	376	361	430	412	3.1	3.0
Industrial machinery and equipment	241	231	108	128	0.9	1.0
Other manufacturing	83	76	21	18	0.2	0.2
<i>Total</i>	1 831	1 760	2 190	2 403	14.3	14.7
Other industries						
Wholesale and retail trade	289	334	370	422	2.5	2.8
Finance and insurance	40	51	278	224	1.0	0.8
Property and business services	943	1 041	867	1 049	6.7	7.5
Scientific research	166	214	243	308	1.4	1.7
Other n.e.c.	193	251	506	605	1.2	2.1
<i>Total</i>	1 631	1 891	2 265	2 609	12.8	14.9
<b>Total all industries</b>	<b>3 554</b>	<b>3 759</b>	<b>4 917</b>	<b>5 546</b>	<b>28.3</b>	<b>30.4</b>

Source: Research and Experimental Development, Businesses, Australia (8104.0).

## 25.7 BUSINESS R&D RESOURCES, By field of research(a) — 2001–02

	Type of expenditure				Human resources '000 person years
	Capital expenditure	Labour costs	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	
Mathematical sciences	0.5	9.4	9.4	19.4	0.1
Physical sciences	3.9	24.1	20.6	48.7	0.3
Chemical sciences	12.1	83.0	65.7	160.8	1.2
Earth sciences	7.2	20.3	112.0	139.5	0.3
Biological sciences	22.2	70.0	94.4	186.6	0.9
Information systems	25.0	166.3	164.9	356.1	1.8
Computer software	35.3	495.4	233.7	764.4	5.9
Other information, computing and communication sciences	18.2	160.9	186.0	365.2	2.0
Industrial biotechnology and food sciences	13.8	74.6	55.2	143.5	1.0
Chemical engineering	22.2	22.2	27.9	72.3	0.3
Manufacturing engineering	50.9	161.6	203.9	416.4	2.4
Automotive engineering	35.2	225.8	205.8	466.7	3.0
Mechanical and industrial engineering	20.9	69.7	77.4	168.0	1.0
Resources engineering	15.8	47.1	199.2	262.2	0.6
Electrical and electronic engineering	14.7	93.8	74.1	182.6	1.4
Metallurgy	20.1	42.6	145.5	208.2	0.5
Materials engineering	9.1	48.4	56.7	114.2	0.6
Communications technologies	27.5	232.5	354.3	614.3	2.6
Other engineering and technology	18.4	128.0	160.3	306.8	1.8
Agricultural, veterinary and environmental sciences	12.4	67.3	94.0	173.7	0.9
Medical and health sciences	18.8	130.0	181.5	330.3	1.6
Other research fields	6.0	24.6	14.9	45.6	0.3
<b>Total</b>	<b>410.4</b>	<b>2 397.8</b>	<b>2 737.3</b>	<b>5 545.5</b>	<b>30.4</b>

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: *Research and Experimental Development, Businesses, Australia, 2001–02 (8104.0)*.

In terms of socioeconomic objectives, most BERD (\$4,979m or 90%) was directed towards Economic development (table 25.8). About 7% was directed towards Society, 2% towards Defence and 1% towards Environment. Of the amount directed towards Economic development, \$2,215m (44%) was directed towards Manufacturing.

The same pattern applied to human resources devoted to R&D, with 90% directed towards Economic development, 7% directed towards Society, 2% towards Defence and 1% towards Environment (table 25.8).

**25.8 BUSINESS R&D RESOURCES, By socioeconomic objective(a) — 2001–02**

	Type of expenditure				Human resources '000 person years
	Capital expenditure	Labour costs	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	
Defence	2.7	52.1	64.6	119.5	0.7
Economic development					
Plant — production and primary products	6.2	27.7	30.9	64.7	0.4
Animal — production and primary products	4.1	23.0	30.5	57.6	0.3
Mineral resources (excl. energy)	35.0	58.6	225.4	319.0	0.8
Energy resources	9.1	40.3	143.6	193.0	0.4
Energy supply	24.6	41.5	52.8	118.9	0.5
Manufacturing	193.4	969.6	1 052.6	2 215.5	13.4
Construction	6.1	29.9	48.7	84.8	0.4
Transport	6.0	45.8	68.5	120.4	0.7
Information and communication services	67.9	822.0	706.7	1 596.6	9.2
Commercial services and tourism	18.2	96.0	82.8	197.1	1.0
Economic framework	1.0	6.9	3.8	11.6	0.1
Total	371.7	2 161.2	2 446.1	4 979.0	27.3
Society					
Health	25.4	138.5	169.8	333.7	1.7
Education and training	0.5	7.6	2.6	10.7	0.1
Social development and community services	1.9	13.3	7.3	22.6	0.2
Total	27.8	159.4	179.7	367.0	2.0
Environment					
Environmental policy frameworks and other aspects	1.3	3.0	3.4	7.6	0.1
Environmental management	6.0	18.7	41.5	66.2	0.3
Total	7.3	21.7	44.8	73.8	0.3
Non-oriented research	0.8	3.4	2.0	6.2	—
<b>Total</b>	<b>410.4</b>	<b>2 397.8</b>	<b>2 737.3</b>	<b>5 545.5</b>	<b>30.4</b>

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: *Research and Experimental Development, Businesses, Australia, 2001–02 (8104.0)*.

**General government sector**

Expenditure on R&D carried out by national and state/territory government organisations in Australia in 2000–01 was estimated to be \$2,368m, a 14% increase on expenditure in 1998–99 (table 25.1).

As shown in table 25.9, the research fields in which most government R&D expenditure took place were: Agricultural, veterinary and environmental sciences (\$773m, or 33%); Engineering and technology (\$385m, or 16%);

Biological sciences (\$260m, or 11%); Information, computing and communication sciences (\$217m, or 9%); Earth sciences (\$215m, or 9%); and Medical and health sciences (\$183m, or 8%).

A slightly different pattern applied to human resources devoted to R&D, with Agricultural, veterinary and environmental sciences accounting for 33%; Engineering and technology 15%; Medical and health sciences 12%; Biological sciences 11%; Earth sciences 7%; and Information, computing and communication sciences 7%.

## 25.9 GOVERNMENT R&D RESOURCES, By field of research(a) — 2000–01

	Type of expenditure					Human resources '000 person years
	Land and buildings	Other capital expenditure	Labour costs	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	\$m	
Mathematical sciences	1.3	1.9	15.3	6.7	25.1	0.2
Physical sciences	4.3	6.9	52.5	29.6	93.3	0.7
Chemical sciences	5.2	4.0	52.1	34.0	95.3	0.7
Earth sciences	10.1	10.8	95.1	99.2	215.1	1.3
Biological sciences	32.5	10.0	126.2	91.1	259.8	2.0
Information, computing and communication sciences	4.2	6.8	99.6	106.1	216.8	1.2
Engineering and technology	17.9	15.5	206.7	144.7	384.8	2.8
Agricultural, veterinary and environmental sciences	27.3	20.3	379.6	346.1	773.3	6.1
Medical and health sciences	23.4	5.8	104.7	48.8	182.7	2.3
Economics	0.2	0.4	31.7	18.6	50.8	0.4
Law, justice and law enforcement	1.0	0.3	13.8	7.6	22.7	0.2
Other research fields	1.0	1.0	30.6	16.1	48.8	0.5
<b>Total</b>	<b>128.3</b>	<b>83.7</b>	<b>1 207.7</b>	<b>948.6</b>	<b>2 368.4</b>	<b>18.4</b>
Commonwealth	75.1	58.2	734.6	557.0	1 424.8	9.7
State/territory	53.3	25.6	473.2	391.6	943.6	8.7

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2000–01 (8109.0)*.

In terms of socioeconomic objectives, most government sector R&D expenditure (\$1,375m or 58%) was directed towards Economic development (table 25.10). About 18% was directed towards Environment, 12% towards Society, 10% towards Defence, and 1% to Non-oriented research. Of the amount directed towards Economic development, \$392m (29%) was directed towards Plant production and

primary products, \$298m (22%) towards Animal production and primary products, and \$233m (17%) towards Manufacturing.

A slightly different pattern applied to human resources devoted to R&D, with 53% directed towards Economic development, 18% towards Society, 17% towards Environment, 11% towards Defence, and 1% to Non-oriented research (table 25.10).

## 25.10 GOVERNMENT R&D RESOURCES, By socioeconomic objective(a) — 2000–01

	Type of expenditure					Human resources '000 person years
	Land and buildings	Other capital expenditure	Labour costs	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	\$m	
Defence	0.4	5.5	165.3	67.4	238.7	2.0
Economic development						
Plant — production and primary products	13.4	10.4	196.8	171.8	392.5	3.2
Animal — production and primary products	10.0	8.2	141.8	137.8	297.8	2.2
Mineral resources (excl. energy)	4.3	3.6	42.3	31.7	81.9	0.5
Energy resources	3.0	2.5	28.9	30.8	65.3	0.4
Energy supply	2.3	0.9	16.1	9.0	28.3	0.2
Manufacturing	21.7	9.6	101.5	100.0	232.8	1.6
Construction	2.3	1.7	17.3	11.9	33.2	0.2
Transport	0.4	1.0	6.8	12.2	20.3	0.1
Information and communication services	3.4	3.6	30.3	15.4	52.8	0.4
Commercial services and tourism	0.6	1.1	5.6	4.1	11.4	0.1
Economic framework	4.9	1.4	66.7	85.6	158.7	0.9
Total	66.4	44.0	654.2	610.4	1 375.0	9.8
Society						
Health	32.6	7.9	114.8	57.7	213.0	2.6
Education and training	0.2	0.7	8.6	5.2	14.8	0.1
Social development and community services	2.3	1.8	36.0	21.7	61.8	0.6
Total	35.1	10.3	159.5	84.7	289.6	3.2
Environment						
Environmental policy frameworks and other aspects	1.3	1.1	28.9	19.1	50.4	0.4
Environmental management	21.1	18.3	184.7	156.8	380.9	2.7
Total	22.4	19.4	213.6	175.9	431.3	3.1
Non-oriented research	4.0	4.6	15.1	10.2	33.8	0.3
<b>Total</b>	<b>128.3</b>	<b>83.7</b>	<b>1 207.7</b>	<b>948.6</b>	<b>2 368.4</b>	<b>18.4</b>

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2000–01* (8109.0).

### Higher education sector

Estimated expenditure on R&D carried out in Australia by the higher education sector in 2000 was \$2,775m, an increase of 9% over expenditure in 1998, and 20% over expenditure in 1996 (table 25.1).

Table 25.11 shows that major fields of research in which higher education R&D expenditure took place in 2000 were: Medical and health sciences (\$668m, or 24% of total expenditure); Biological sciences (\$325m, or 12%); Engineering and

technology (\$309m, or 11%); and Agricultural, veterinary and environmental sciences (\$205m, or 7%). Direct labour costs accounted for 44% of total R&D expenditure.

A slightly different pattern applied to human resources devoted to R&D, with 19% on Medical and health sciences, 11% on Engineering and technology, 10% on Biological sciences and 7% on Agricultural, veterinary and environmental sciences.

## 25.11 HIGHER EDUCATION R&D RESOURCES, By field of research(a) — 2000

	Type of expenditure						Human resources '000 person years
	Land and buildings	Other capital expenditure	Direct labour costs	Scholarships	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	\$m	\$m	
Mathematical sciences	0.3	2.6	29.5	3.3	23.8	59.4	0.8
Physical sciences	2.0	12.8	46.7	4.8	45.6	112.0	1.3
Chemical sciences	2.1	15.4	50.0	9.0	50.8	127.2	1.7
Earth sciences	1.2	7.6	38.8	6.9	40.2	94.6	1.6
Biological sciences	9.5	24.8	132.3	19.1	138.8	324.5	4.7
Information, computing and communication sciences	2.1	6.8	51.5	8.5	44.2	113.1	1.8
Engineering and technology	5.2	25.9	123.7	25.1	129.1	309.1	5.0
Agricultural, veterinary and environmental sciences	2.8	8.7	85.6	15.0	92.5	204.5	3.1
Medical and health sciences	7.2	34.7	299.6	33.2	292.9	667.7	8.8
Education	2.0	2.8	41.5	6.0	34.3	86.6	2.4
Economics	0.7	2.5	31.5	3.4	28.8	66.8	1.1
Commerce, management, tourism and services	1.8	3.6	55.8	5.6	44.1	111.0	2.1
Studies in human society	1.5	2.8	41.7	6.8	40.8	93.7	2.0
Behavioural and cognitive sciences	2.3	4.2	39.2	6.8	35.2	87.8	2.0
Other research fields	7.8	10.0	146.6	29.7	122.4	316.5	7.9
<b>Total</b>	<b>48.6</b>	<b>165.3</b>	<b>1 214.0</b>	<b>183.2</b>	<b>1 163.5</b>	<b>2 774.6</b>	<b>46.3</b>

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: Research and Experimental Development, Higher Education Organisations, Australia, 2000 (8111.0).

In terms of socioeconomic objectives (table 25.12), most higher education R&D expenditure (\$1,123m or 40%) was directed towards Society. About 29% was directed towards Economic development, 25% towards Non-oriented research and 6% towards Environment. The major subdivision within Society was Health with 27% of total R&D expenditure.

A similar pattern applied to human resources devoted to R&D, with 41% directed towards Society, 27% towards Economic development, 26% towards Non-oriented research and 6% to Environment.

### Private non-profit sector

Expenditure on R&D carried out by private non-profit organisations in 2000–01 (\$283m) increased by 29% (see table 25.1) over 1998–99 expenditure.

Medical and health sciences comprised the major field of research for R&D expenditure in the private non-profit sector, accounting for \$181m (64%) of the sector's total R&D expenditure in 2000–01. Labour costs continued to be the main component of R&D expenditure (47%) (table 25.13).

Medical and health sciences also comprised the leading field of research in terms of human resource use.

In the private non-profit sector, Health was the main socioeconomic objective (table 25.14), accounting for 91% or \$257m of total R&D expenditure. Education and training accounted for \$17m (6%), while \$5m (2%) was directed towards Economic development.

A similar pattern applied to human resources devoted to R&D, with 92% directed towards Health, 4% towards Education and training, and 2% towards Economic development.

**25.12 HIGHER EDUCATION R&D RESOURCES, By socioeconomic objective(a) — 2000**

	Type of expenditure						Human resources '000 person years
	Land and buildings	Other capital expenditure	Direct labour costs	Scholarships	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	\$m	\$m	
Defence	0.1	0.2	1.8	0.2	2.0	4.4	0.1
Economic development							
Plant — production and primary products	1.5	4.6	45.9	8.3	48.3	108.6	1.6
Animal — production and primary products	1.0	2.8	26.8	4.4	29.5	64.5	0.9
Mineral resources (excl. energy)	0.9	2.7	14.9	3.1	20.6	42.1	0.5
Energy resources	0.7	2.9	14.0	2.0	12.9	32.4	0.4
Energy supply	1.0	2.6	12.3	3.1	12.0	31.1	0.5
Manufacturing	2.0	15.9	58.1	10.9	53.8	140.7	2.1
Construction	0.9	3.0	23.3	4.7	22.2	54.1	1.1
Transport	0.6	1.3	10.1	1.7	9.0	22.8	0.4
Information and communication services	2.1	8.3	56.7	9.5	51.2	127.7	2.0
Commercial services and tourism	0.7	1.7	20.6	1.8	15.6	40.4	0.6
Economic framework	1.6	4.0	64.8	6.8	53.7	130.9	2.4
Total	13.1	49.8	347.5	56.2	328.8	795.3	12.7
Society							
Health	10.6	35.6	333.0	38.4	326.8	744.3	10.2
Education and training	2.4	4.0	51.8	7.0	44.8	110.0	2.7
Social development and community services	6.8	8.9	124.5	22.6	106.0	268.7	6.1
Total	19.8	48.4	509.3	67.9	477.6	1 123.0	19.0
Environment							
Environmental policy frameworks and other aspects	0.7	1.1	11.1	1.7	10.5	25.2	0.4
Environmental management	2.7	7.6	54.6	10.4	59.7	134.9	2.4
Total	3.4	8.7	65.7	12.1	70.2	160.1	2.8
Non-oriented research	12.2	58.2	289.6	46.9	284.8	691.7	11.8
<b>Total</b>	<b>48.6</b>	<b>165.3</b>	<b>1 214.0</b>	<b>183.2</b>	<b>1 163.5</b>	<b>2 774.6</b>	<b>46.3</b>

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: *Research and Experimental Development, Higher Education Organisations, Australia, 2000 (8111.0)*.

### 25.13 PRIVATE NON-PROFIT R&D RESOURCES, By field of research(a) — 2000–01

	Type of expenditure					Human resources person years
	Land and buildings	Other capital expenditure	Labour costs	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	\$m	
Mathematical sciences	—	0.1	0.4	0.6	1.1	8
Physical sciences	—	0.1	0.2	0.3	0.6	4
Chemical sciences	—	0.2	1.1	1.3	2.6	21
Earth sciences	—	—	—	—	—	—
Biological sciences	0.7	5.2	40.5	30.7	77.1	883
Information, computing and communication sciences	—	0.2	1.5	1.2	2.9	27
Engineering and technology	—	n.p.	n.p.	n.p.	n.p.	4
Agricultural, veterinary and environmental sciences	—	n.p.	n.p.	n.p.	n.p.	9
Medical and health sciences	24.9	10.7	80.1	65.1	180.8	1 665
Other research fields	0.1	0.4	8.2	7.8	16.5	101
<b>Total</b>	<b>25.8</b>	<b>17.0</b>	<b>132.7</b>	<b>107.6</b>	<b>283.2</b>	<b>2 721</b>

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2000–01 (8109.0)*.

### 25.14 PRIVATE NON-PROFIT R&D RESOURCES, By socioeconomic objective(a) — 2000–01

	Type of expenditure					Human resources person years
	Land and buildings	Other capital expenditure	Labour costs	Other current expenditure	Total	
	\$m	\$m	\$m	\$m	\$m	
Defence	—	—	—	—	—	—
Economic development	—	0.3	2.9	2.1	5.4	45
Society						
Health	25.6	16.0	119.0	96.2	256.9	2 515
Education and training	n.p.	n.p.	8.0	8.0	16.9	109
Social development and community services	n.p.	n.p.	1.0	0.4	1.4	15
<b>Total</b>	<b>25.8</b>	<b>16.7</b>	<b>128.0</b>	<b>104.6</b>	<b>275.2</b>	<b>2 639</b>
Environment	—	—	1.5	0.7	2.2	28
Non-oriented research	—	—	0.3	0.2	0.5	9
<b>Total</b>	<b>25.8</b>	<b>17.0</b>	<b>132.7</b>	<b>107.6</b>	<b>283.2</b>	<b>2 721</b>

(a) Data were subjectively allocated by data providers at the time of reporting, using OECD/ABS definitions. The ABS makes every effort to ensure correct and consistent interpretation and reporting of these data and applies consistent processing methodologies. Readers using these data should bear in mind the original subjectivity of the information.

Source: *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2000–01 (8109.0)*.

## Innovation statistics

Innovation is the introduction of new goods, services, processes and/or organisational change within businesses for the provision of goods and/or services. Innovation surveys provide a wider measure of the innovation process than R&D surveys.

The ABS has conducted two surveys of innovation, the first in respect of 1993–94 and a second, more comprehensive survey, in respect of 1996–97. These surveys were based on the concepts and standard questions developed jointly by the OECD and Eurostat (the statistical office for the European union). While the main ABS innovation surveys obtained data from manufacturing

businesses, exploratory surveys have also been conducted for the mining, agriculture, construction and telecommunications industries.

The total amount spent by manufacturing businesses on technological innovation during 1996–97 was estimated at \$3.9b. About half of this was spent on R&D. See *Innovation in Manufacturing, Australia* (8116.0) and previous editions of Year Book Australia for further data from the innovation surveys.

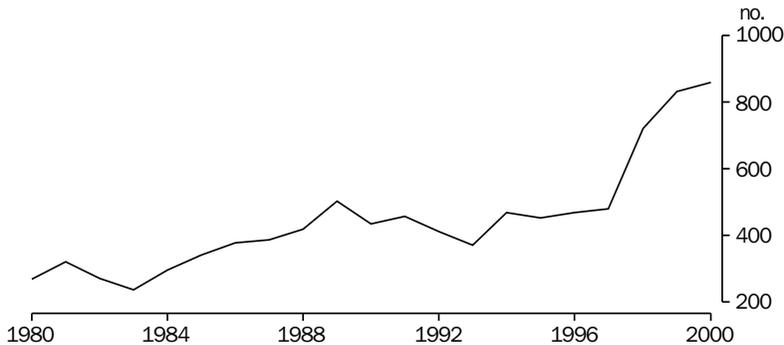
The ABS is planning to undertake a comprehensive innovation survey in early 2004 with respect to the 2003 calendar year. The survey will cover the industries within the market sector, excluding agriculture. The topics being investigated for inclusion in the survey are: general and financial information, innovation activities, outputs, cooperation/linkages, sources of information, technology transfer, business environment, business and innovation strategy, barriers to innovation, management practices, learning capacity/skills base, information and communication technologies upgrades and

innovation expenditure. The results of this survey are expected to be released toward the end of 2004.

An intermediate measure of innovation is number of patents obtained by Australian residents. Graph 25.16 shows the number of United States of America patents by Australian inventors during the period 1980–2000. Given the dominance of the United States of America market for innovative products, this is an indicator of Australian innovation. The number of such patents has grown significantly over this period, particularly since 1997, but remains well below that of several OECD countries of similar population.

Innovation depends on other aspects of what the OECD calls a 'knowledge-based economy', such as human capital and information and communications technology. In September 2003, the ABS published a new electronic product, *Measures of a Knowledge-based Economy and Society, Australia — Electronic Delivery* (1377.0). The aim of this new product is to enable policy makers to better understand, through access to relevant statistics, the degree to which Australia is a knowledge-based economy and society.

**25.16 UNITED STATES OF AMERICA PATENTS BY AUSTRALIAN INVENTORS**



Source: Department of Industry, Tourism and Resources, 'Australia as a Modern Economy, Some Statistical Indicators 2002.'

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OECD 2003, *Main Science and Technology Indicators, 2003/1*, Paris

### Additional information

Additional information on topics presented in this chapter may be found in the Australian Government's annual report on innovation and in the annual reports and other publications of the organisations mentioned, particularly the Department of Education, Science and Training, the Department of Industry, Tourism and Resources and the CSIRO. See also the innovation statement of January 2001, *Backing Australia's Ability*.

Additional information on some technology-related issues, particularly on the use of information technology, can be found in *Chapter 23, Communications and information technology*.

### Web sites

Information about all Australian Government policies and programs relating to science and innovation can be found through the portal <<http://www.scienceandindustry.gov.au>>

Australian Bureau of Statistics, <<http://www.abs.gov.au>> and a *science and innovation* theme page may be found under the category *Themes*

Australian Government Department of Education, Science and Training, <<http://www.dest.gov.au>>. The innovation statement, *Backing Australia's Ability*, can be found at <<http://www.innovation.gov.au>>

Australian Government Department of Industry, Tourism and Resources, <<http://www.industry.gov.au>>

Commonwealth Scientific and Industrial Research Organisation, <<http://www.csiro.au>>

Organisation for Economic Co-operation and Development, <<http://www.oecd.org>>. A summary of the *Frascati Manual*, the basic international source of methodology for collecting and using research and development statistics, can be found at <<http://www.oecd.org/dsti/sti/stat-ana/prod>>



## 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, the Reserve Bank (the central 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 — that is, the cash, cheque and electronic means by which payments are effected — and its participants (e.g. banks). The interaction of these 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.

## Regulatory framework

From 1 July 1998 a new financial regulatory framework came into effect, in response to the recommendations of the Financial System Inquiry (the 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 building societies and credit unions have been supervised by APRA. APRA supervises benefit funds of friendly societies under the *Life Insurance Act 1995* (Cwlth), while health benefit funds of friendly societies are regulated by the Private Health Insurance Administration Council under the *National Health Act 1959* (Cwlth). Prior to 1 July 1999, building societies, credit unions and friendly societies were regulated under state legislation.

On 1 July 2000 regulation of self-managed superannuation funds was transferred to the Australian Taxation Office (ATO). From September 2001 the *Financial Sector (Collection of Statistics) Act 2001* (Cwlth) provided APRA with powers to collect information previously collected under the range of legislation for which it was responsible, and under the Financial Corporations Act administered by the Reserve Bank. The new legislation enables harmonised and consistent data collection from financial institutions. APRA commenced data collection from registered financial corporations from March 2003.

## 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 *System of National Accounts 1993 (SNA93)*. Diagram 26.1 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 2002–03.

The arrows show the net flow from lenders to borrowers. For example, there is a \$24.7b net flow from the financial corporations sector to households. There is also an \$6.1b net flow from financial corporations to non-financial corporations. This is mainly attributable to increased loans by financial intermediaries and increased share purchases by financial institutions such as life offices and pension funds.

## Financial enterprises

Financial enterprises are institutions which 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 six sectors: Depository corporations; Life insurance corporations; Pension funds; Other insurance corporations; Central borrowing authorities; and Financial intermediaries n.e.c.

*Depository corporations* — are those included in the Reserve Bank of Australia's *broad money* measure (see *Money supply measures*). The Reserve Bank itself is a depository corporation; authorised depository institutions are those supervised by APRA and include banks, building societies and credit unions; non-supervised depository corporations registered under the *Financial Statistics (Collection of Data) Act 2001* (Cwlth) include merchant banks, pastoral finance companies, finance companies and general financiers; finally cash management trusts are also included in depository corporations.

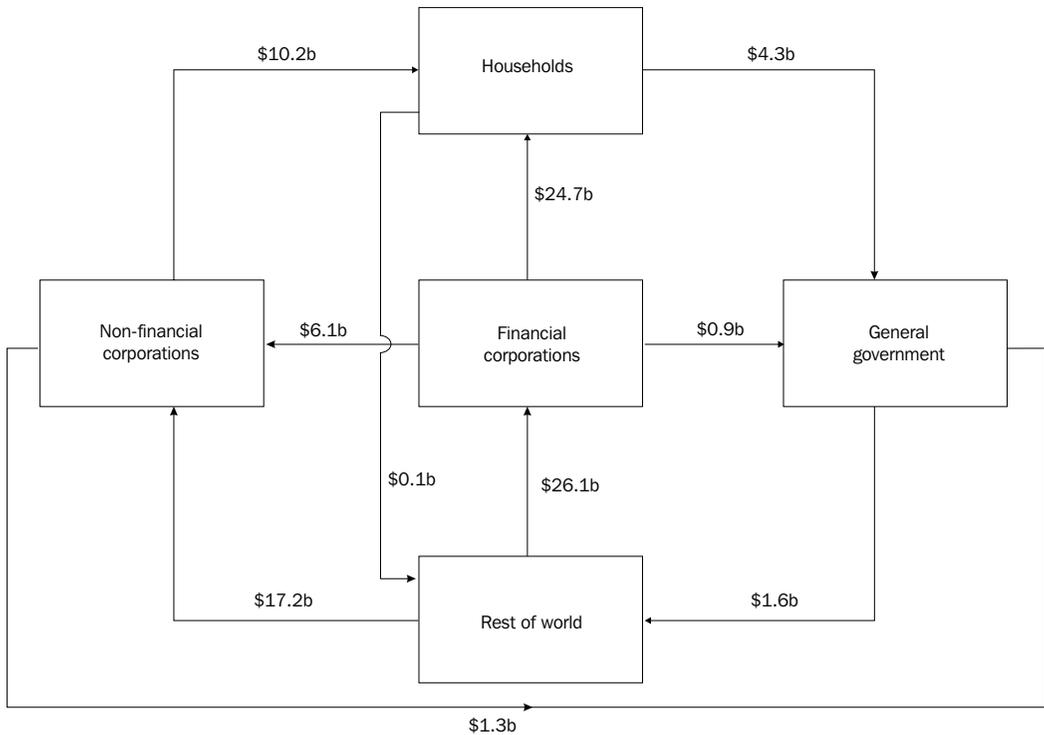
*Life insurance corporations* — cover the statutory and shareholders' funds of life insurance companies and similar businesses undertaken by friendly societies and long-service-leave boards.

*Pension funds* — cover separately constituted superannuation funds.

*Other insurance corporations* — cover health, export and general insurance companies.

*Central borrowing authorities* — are corporations set up by state and territory governments to provide liability and asset management services for those governments.

## 26.1 INTER-SECTORIAL FINANCIAL FLOWS — 2002-03



Note: The arrows show the direction of net financial flows from lending sectors to borrowing sectors. The number relating to each arrow indicates the value of that net flow during the period. Other claims are omitted from the diagram. For this reason, inter-sectoral borrowing does not equal inter-sectoral lending.

Source: Australian National Accounts: Financial Accounts, June 2003 (5232.0).

*Financial intermediaries n.e.c.* — cover common funds, mortgage, fixed interest and equity unit trusts, issuers of asset-backed securities, economic development corporations and cooperative housing societies.

Table 26.2 shows the relative size of these groups of financial enterprises in terms of their financial assets. This table has been compiled on a consolidated basis, that is, 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.

## 26.2 FINANCIAL INSTITUTIONS, Financial assets — 30 June

	Depository corporations			Life insurance corporations	Pension funds	Other insurance corporations	Central borrowing authorities	Financial intermediaries n.e.c.	Consolidated financial sector total
	Reserve Bank	Banks	Other						
	\$b	\$b	\$b						
1998	45.1	585.3	172.0	149.4	300.6	65.4	96.2	162.2	1 138.4
1999	44.6	637.9	179.5	170.8	344.7	68.4	97.0	163.8	1 216.1
2000	51.1	728.6	197.0	185.7	423.9	72.9	91.3	214.3	1 400.3
2001	56.1	805.2	225.1	189.2	456.5	75.1	91.8	223.5	1 499.1
2002	56.8	872.8	243.5	189.5	460.0	76.4	93.6	235.5	1 589.1
2003	56.3	972.7	239.9	186.3	472.6	85.2	104.3	249.7	1 673.2

Source: Australian National Accounts: Financial Accounts (5232.0).

### 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 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.

Banks are the largest deposit-taking and financial institutions in Australia. At the end of June 2003 there were 51 banks operating in Australia. All are authorised to operate by the *Banking Act 1959*

(Cwlth). Four major banks: the Australia and New Zealand Banking Group, Commonwealth Bank of Australia, National Australia Bank, and the Westpac Banking Corporation, account for over half the total assets of all banks. These four banks provide widespread banking services and an extensive retail branch network throughout Australia. The remaining banks provide similar banking services through limited branch networks often located in particular regions. At 30 June 2003, banking services were provided at 2,990 giroPost locations and 21,603 Automatic Teller Machines (ATM) throughout Australia.

The liabilities and financial assets of the Reserve Bank are set out in table 26.3. The liabilities and financial assets of the banks operating in Australia are shown in table 26.4.

### 26.3 RESERVE BANK OF AUSTRALIA, Financial assets and liabilities

	Amounts outstanding at 30 June		
	2001	2002	2003
	\$m	\$m	\$m
<b>FINANCIAL ASSETS</b>			
Monetary gold and SDRs(a)	1 564	1 661	1 555
Currency and deposits	12 020	12 367	11 092
One name paper	1 013	1 897	500
Bonds	39 709	40 163	42 805
Derivatives	152	—	8
Loans and placements	1 454	637	91
Other accounts receivable	140	122	221
<b>Total(b)</b>	<b>56 052</b>	<b>56 847</b>	<b>56 272</b>
<b>LIABILITIES</b>			
Currency and deposits	29 882	40 767	34 321
Unlisted shares and other equity(c)	12 265	11 399	11 678
Other	189	1 783	6 536
<b>Total</b>	<b>42 336</b>	<b>53 939</b>	<b>52 535</b>

(a) Special Drawing Rights. (b) Excludes non-financial assets (e.g. fixed assets, property, inventories, etc.). (c) Estimates based on net asset values.

Source: Australian National Accounts: Financial Accounts (5232.0).

## 26.4 BANKS(a), Financial assets and liabilities

	Amounts outstanding at 30 June		
	2001	2002	2003
	\$m	\$m	\$m
<b>FINANCIAL ASSETS</b>			
Currency and deposits	32 334	38 482	27 627
Acceptance of bills of exchange	80 720	77 975	77 006
One name paper	11 602	15 821	13 221
Bonds	28 981	25 464	26 747
Derivatives	31 606	41 089	56 656
Loans and placements	546 172	606 029	692 554
Equities	64 432	65 096	75 149
Prepayments of premiums and reserves	1 372	1 543	1 612
Other accounts receivable	7 958	1 319	2 122
<b>Total(b)</b>	<b>805 177</b>	<b>872 818</b>	<b>972 694</b>
<b>LIABILITIES</b>			
Currency and deposits	407 418	449 345	499 687
Acceptance of bills of exchange	54 143	37 340	39 301
One name paper	86 854	86 735	110 210
Bonds	101 523	109 015	108 902
Derivatives	28 219	44 144	64 477
Loans and placements	36 125	43 040	47 171
Equity	169 349	181 822	171 989
Other accounts payable	3 539	3 560	3 164
<b>Total</b>	<b>887 170</b>	<b>955 001</b>	<b>1 044 901</b>

(a) Does not include the Reserve Bank of Australia. (b) Excludes non-financial assets (e.g. fixed assets, property, inventories, etc.).

Source: Australian National Accounts: Financial Accounts (5232.0).

### Other depository corporations

In addition to banks, financial institutions such as building societies, credit unions and merchant banks play an important part in the Australian financial system. In the Australian financial accounts, other depository corporations are defined as those, apart from banks, with liabilities included in the Reserve Bank's definition of *broad money*. Non-bank institutions included in broad money are other authorised depository institutions (building societies and credit cooperatives), cash management trusts, and corporations registered under the *Financial Statistics (Collection of Data) Act 2001* (Cwlth) which include money market corporations, pastoral finance companies, finance companies and general financiers.

The *Financial Corporations Act 1974* (Cwlth) ceased on 1 July 2002. Corporations previously subject to the *Financial Corporations Act 1974* (Cwlth) were then required to report to APRA as Registered Financial Corporations. From 31 March 2003 reporting requirements and categorisation for Registered Financial Corporations changed, reducing the number of other depository corporations to five.

*Permanent building societies* are usually organised as financial cooperatives. They are authorised to accept money on deposit. They provide finance principally in the form of housing loans to their members.

*Credit cooperatives*, also known as credit unions, are similar to building societies. As their name implies, they are organised as financial cooperatives which borrow from and provide finance to their members.

*Money market corporations* are 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*. This category covers what were pastoral finance companies, finance companies and general financiers categories. These corporations engage in a variety of borrowing and lending activity.

## 26.5 OTHER DEPOSITORY CORPORATIONS, Total assets

	Amounts outstanding at 30 June		
	2001	2002	2003
	\$m	\$m	\$m
Permanent building societies	12 898	12 414	12 927
Credit cooperatives	21 973	23 961	26 714
Money market corporations	81 248	85 837	92 894
Other registered financial corporations	82 340	88 466	(a)118 076
Cash management trusts	31 980	32 383	29 306
<b>Total</b>	<b>230 439</b>	<b>243 061</b>	<b>279 917</b>

(a) Break in series

Source: *Managed Funds, Australia (5655.0)*; APRA; Reserve Bank of Australia.

*Cash management trusts* are investment funds which are open to the public. They invest the pooled monies of their unit holders mainly in money-market securities such as bills of exchange and bank certificates of deposit. As with other public unit trusts their operations are governed by a trust deed and their units are redeemable by the trustee on demand or within a short time. They are not subject to supervision by APRA or registered under the *Financial Statistics (Collection of Data) Act 2001* (Cwlth).

Table 26.5 shows the total assets of each category of non-bank deposit-taking institution.

### 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 of the insured or on the insured receiving a permanent disability. Investment products include annuities and superannuation plans. The life insurance industry in Australia consists of 40 direct insurers, including six reinsurers. As with the banking industry, the life insurance industry is dominated by a few very large companies holding a majority of the industry's assets.

Life insurance companies are supervised by the APRA under the *Life Insurance Act 1995* (Cwlth). APRA also regulates friendly societies which offer services similar to life insurance corporations.

Table 26.6 shows the financial assets and liabilities arising from both policyholder and shareholder investment in life insurance corporations and APRA regulated friendly societies.

### Pension funds

Pension funds have been established to provide retirement benefits for their members. Members 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 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). These funds are supervised by either APRA or the ATO. Public sector funds, being funds sponsored by a government employer or government controlled business enterprise, are exempt from direct APRA supervision.

The largest number of pension funds comprise self-managed superannuation funds. From 1 July 2000 the ATO assumed responsibility for regulating self-managed superannuation funds.

Self-managed superannuation funds are superannuation funds:

- that have less than five members;
- each individual trustee of the fund is a fund member;
- each member of the fund is a trustee;
- no member of the fund is an employee of another member of a fund, unless they are related; and
- if the trustee of the fund is a body corporate each director of the body corporate is a member of the fund.

## 26.6 LIFE INSURANCE CORPORATIONS, Financial assets and liabilities

	Amounts outstanding at 30 June		
	2001 \$m	2002 \$m	2003 \$m
<b>FINANCIAL ASSETS</b>			
Currency and deposits	12 781	11 866	10 818
Bills of exchange	4 604	3 577	3 113
One name paper	10 257	11 975	14 000
Bonds	41 164	38 629	38 332
Derivatives	28	247	165
Loans and placements	9 065	5 918	6 368
Equities	106 558	109 609	107 281
Other accounts receivable	4 730	7 727	6 270
<b>Total</b>	<b>189 187</b>	<b>189 548</b>	<b>186 347</b>
<b>LIABILITIES</b>			
Bills of exchange	—	36	4
One name paper issued in Australia	—	26	—
One name paper issued offshore	702	413	—
Bonds etc. issued in Australia	1 119	1 096	1 010
Bonds etc. issued offshore	1 313	968	789
Derivatives	371	-112	-142
Loans and placements	4 946	3 566	4 608
Listed and unlisted equity	46 208	35 509	24 149
Net equity in reserves	47 926	47 766	41 062
Net equity of pension funds	116 070	120 966	121 924
Other accounts payable	4 805	5 717	5 039
<b>Total</b>	<b>223 460</b>	<b>215 951</b>	<b>198 443</b>

Source: Australian National Accounts: Financial Accounts (5232.0).

Corporate funds are funds sponsored by a single non-government employer, or group of employers. Industry funds generally have closed memberships restricted to the employees of a particular industry and are established under an agreement between the parties to an industrial award.

Public sector funds are those funds sponsored by a public sector employer. Retail funds are pooled superannuation products sold through an intermediary to the general public. Funds with less than five members but which do not qualify as self-managed superannuation funds 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 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 26.4), but are also footnoted in table 26.8 for completeness.

The number of pension funds is shown in table 26.7. The assets of pension funds are shown in table 26.8 and include unfunded pension claims by pension funds on the Australian Government where these have been formally recognised in accounting systems. The assets in the table do not include any provision for the pension liabilities of governments to public sector employees in respect of unfunded retirement benefits. At 30 June 2003 the ABS estimate for claims by households on governments for these outstanding liabilities was \$135.2b.

## 26.7 PENSION FUNDS(a) — 30 June 2003

Type of fund	no.
Corporate	1 874
Industry	112
Public sector	73
Retail	231
Small APRA funds	8 353
Self-managed superannuation funds	(a)258 450
<b>Total</b>	<b>(a)269 093</b>

(a) Approximate number, final data not yet available.

Source: APRA; Australian Taxation Office.

## Other insurance corporations

This sector includes all corporations that provide insurance other than life insurance. Included are general, fire, accident, employer liability, household, health and consumer credit insurers.

Private health insurers are regulated by the Private Health Insurance Administration Council under the *National Health Act 1959* (Cwlth). At 30 June 2003 there were 44 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 2003 there were 143 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 26.9 sets out the financial assets and liabilities of other insurance corporations at 30 June 2003 and the preceding two years.

## 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, and to arrange investment of the units' surplus funds. The central borrowing authorities borrow funds, mainly by issuing securities, and on-lend them 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 26.10 shows the financial assets and liabilities held by the central borrowing authorities at 30 June of the most recent three years.

## 26.8 PENSION FUNDS(a), Financial assets

	Amounts outstanding at 30 June		
	2001 \$m	2002 \$m	2003 \$m
Currency and deposits	34 257	33 591	38 000
Bills of exchange	6 399	4 998	6 503
One name paper	11 819	11 543	14 141
Bonds	34 988	38 542	40 499
Loans and placements	18 141	15 944	15 758
Equities	223 892	223 292	225 688
Unfunded superannuation claims	6 329	5 826	5 092
Net equity of pension funds in life office reserves	116 070	120 966	121 924
Other accounts receivable	4 641	5 262	4 999
<b>Total</b>	<b>456 536</b>	<b>459 964</b>	<b>472 604</b>

(a) Retirement savings accounts were valued at \$749m at 30 June 2003 (APRA).

Source: Australian National Accounts: Financial Accounts (5232.0).

## 26.9 OTHER INSURANCE CORPORATIONS, Financial assets and liabilities

	Amounts outstanding at 30 June		
	2001	2002	2003
	\$m	\$m	\$m
<b>FINANCIAL ASSETS</b>			
Currency and deposits	5 358	6 944	7 469
Bills of exchange	2 055	3 247	2 879
One name paper	2 868	2 524	4 399
Bonds	21 690	21 989	28 709
Loans and placements	7 362	5 715	6 589
Equities	25 172	24 372	20 733
Other accounts receivable	10 548	11 561	14 402
<b>Total</b>	<b>75 053</b>	<b>76 352</b>	<b>85 180</b>
<b>LIABILITIES</b>			
One name paper on issue	—	43	37
Bonds on issue	197	128	522
Loans and placements	1 575	1 731	1 817
Listed shares and other equity	10 371	8 905	14 798
Unlisted shares and other equity	14 621	16 484	15 442
Prepayment of premiums	45 744	51 444	53 694
Other accounts receivable	7 612	9 476	6 121
<b>Total</b>	<b>80 120</b>	<b>88 211</b>	<b>92 431</b>

Source: Australian National Accounts: Financial Accounts (5232.0); APRA; Private Health Insurance Administration Council.

## 26.10 CENTRAL BORROWING AUTHORITIES, Financial assets and liabilities

	Amounts outstanding at 30 June		
	2001	2002	2003
	\$m	\$m	\$m
<b>FINANCIAL ASSETS</b>			
Currency and deposits	1 236	2 341	6 736
Holdings of bills of exchange	5 714	5 232	5 388
One name paper	4 819	4 211	5 764
Bonds	4 939	4 939	4 461
Derivatives	3 950	5 689	7 824
Loans and placements	70 258	70 578	74 079
Other accounts receivable	836	617	—
<b>Total(a)</b>	<b>91 752</b>	<b>93 607</b>	<b>104 252</b>
<b>LIABILITIES</b>			
Drawings of bills of exchange	39	—	—
One name paper	8 101	9 744	8 102
Bonds	69 768	66 007	68 292
Derivatives	4 033	5 066	7 260
Loans and placements	14 021	13 783	16 800
Equity	30	87	30
Other accounts payable	886	1 476	820
<b>Total</b>	<b>96 878</b>	<b>96 163</b>	<b>101 304</b>

(a) Excludes non-financial assets (e.g. fixed assets, property, inventories, etc.).

Source: Australian National Accounts: Financial Accounts (5232.0).

## Financial intermediaries not elsewhere classified (n.e.c.)

This subsector comprises all institutions that meet the definition of a financial enterprise and have not been included elsewhere. It includes:

- economic development corporations owned by governments
- cash, mortgage, equity and fixed interest common funds
- mortgage, fixed interest, balanced and equity public unit trusts
- wholesale trusts
- securitisers
- investment companies
- cooperative housing societies
- housing finance schemes established by state governments to assist first home buyers.

In addition to enterprises which engage directly in intermediation, the subsector also includes enterprises which undertake activity closely associated with intermediation such as:

- fund managers
- insurance brokers
- arrangers of hedging instruments such as swaps, options and futures.

Table 26.11 shows the financial assets of selected groups of financial intermediaries n.e.c.

*Economic development corporations* — are owned by governments. As their name implies, these bodies are expected to finance infrastructure developments mainly in their home state or territory.

*Common funds* — are set up by trustee companies and are governed by state 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.

*Public unit trusts* — are 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 has become the single responsible entity for both investment strategy and custodial arrangements; the latter previously had been the responsibility of a trustee. 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. Public unit trusts are categorised according to the main types of assets in the pool; for example, property or equity. Only those which invest primarily in financial assets — mortgages, fixed interest, futures or equity securities — are included here. While public unit trusts are not subject to supervision by APRA or registered under the *Financial Statistics (Collection of Data) Act 2001* (Cwlth), they are subject to the provisions of corporations law which includes having their prospectus registered with ASIC.

### 26.11 FINANCIAL INTERMEDIARIES n.e.c., Financial assets

	Amounts outstanding at 30 June		
	2001 \$m	2002 \$m	2003 \$m
<i>Public unit trusts(a)</i>	94 468	<i>n.p.</i>	102 214
Equity unit trusts	64 224	<i>n.p.</i>	75 931
Other unit trusts	30 244	28 431	26 283
Common funds	8 161	7 899	8 887
Securitisers	84 835	110 640	129 030
Other(b)	36 000	<i>n.p.</i>	9 572
<b>Total</b>	<b>223 464</b>	<b>235 528</b>	<b>249 703</b>

(a) Excludes property and trading trusts. (b) Includes investment companies, economic development corporations, fund managers, insurance brokers, hedging instrument arrangers, wholesale trusts, cooperative housing societies and state government housing schemes.

Source: Assets and Liabilities of Australian Securitisers (5232.0.40.001); Australian National Accounts: Financial Accounts (5232.0); Managed Funds, Australia (5655.0).

*Wholesale trusts* — are investment funds that are only open to institutional investors — life insurance corporations, superannuation funds, retail trusts, corporate clients, high net worth individuals — due to high entry levels (e.g. \$500,000 or above). They may issue a prospectus, but more commonly issue an information memorandum. Only those which invest in financial assets are included here.

*Securitisers* — issue short- and/or long-term debt securities which are backed by specific assets. The most common assets bought by securitisation trusts/companies are residential mortgages. These mortgages are originated by financial institutions such as banks and building societies or specialist mortgage managers. Other assets can also be used to back these securities, such as credit card receivables and financial leases. Securitisers generally pool the assets and use the income on them to pay interest to the holders of the asset-backed securities.

*Investment companies* — are similar to equity trusts in that they invest in the shares of other companies. However, investors in investment companies hold share assets, not unit assets.

*Cooperative housing societies* — are similar to permanent building societies. In the past they were wound up after a set period, but now they too are continuing bodies. They raise money through loans from members (rather than deposits) and provide finance to members in the form of housing loans. Over recent years many cooperative housing societies have originated mortgages on behalf of securitisers.

*Fund managers, insurance brokers and arrangers of hedging instruments* — are classified as financial auxiliaries as they 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 (usually other financial entities) on a fee-for-service basis, and as such 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 26.11.

## 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 include the share market, bond market and money 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 which 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 frequently are 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 26.12, which presents a summary of the demand for credit in Australia by the non-financial sectors. It includes raisings by the issue of both debt and equity securities.

### Stock market

The stock market is a mechanism for trading equities (shares), units in trusts, options, and some fixed-interest securities.

Operated nationally by ASX, which is responsible for the day-to-day running and surveillance of trading, the Australian system is electronic, conducted using the Stock Exchange Automated Trading System, allowing buyers and sellers to be located anywhere in the country.

ASX classifies listed companies according to their major activity and produces indexes based on these classifications. Table 26.13 summarises the performance of the major indexes over the last three financial years.

## 26.12 DEMAND FOR CREDIT(a)

	Net transactions during year		
	2000-01	2001-02	2002-03
	\$m	\$m	\$m
Funds (including equity) raised on conventional credit markets by			
Private non-financial corporations	68 274	18 018	31 793
National public non-financial corporations	4 072	1 302	-2 253
State and local public non-financial corporations	3 128	1 007	3 738
National general government	-9 524	-2 616	-4 131
State and local general government	-3 939	-509	-271
Households	43 439	78 780	95 365
<b>Total</b>	<b>105 450</b>	<b>95 982</b>	<b>124 241</b>

(a) Positive numbers indicate an increase in raisings. Negative numbers indicate repayment or redemption.

Source: Australian National Accounts: Financial Accounts (5232.0).

## 26.13 AUSTRALIAN STOCK MARKET INDEXES(a)

	2000-01	2001-02	2002-03
All ordinaries			
Index(b)	3 425.2	3 163.2	2 999.7
High(c)	3 425.2	3 440.0	3 205.4
Low(c)	3 094.3	2 867.5	2 673.3
S&P/ASX 200	3 490	3 216	3 026
Banks	9 447	9 940	9 514
Industrials	5 999	5 459	5 159
Resources	1 582	1 564	1 439

(a) Base 31 December 1979 = 500. (b) Share prices on joint trading floors; June closing value. (c) Over a 12-month period.

Source: Australian Stock Exchange; Reserve Bank of Australia; Standard and Poor's.

Table 26.14 shows the market value of Australian shares and units in trusts on issue — both listed and unlisted. It shows the amount on issue by sector of issuer and sector of holder of equities and units.

### 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. Rates in the market at end June of the last three financial years are shown in table 26.15.

Money market securities 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 (promissory notes, treasury notes, commercial paper and bank certificates of deposit), 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.

**26.14 EQUITY MARKET(a), Amounts on issue — 30 June**

	2001		2002		2003	
	Listed	Unlisted	Listed	Unlisted	Listed	Unlisted
	\$m	\$m(b)	\$m	\$m(b)	\$m	\$m(b)
<b>Total equities and units in trusts</b>	<b>776 151</b>	<b>738 759</b>	<b>733 425</b>	<b>738 008</b>	<b>704 404</b>	<b>755 458</b>
ISSUED BY						
Private non-financial corporations	470 007	156 134	429 590	175 639	412 544	189 534
National public non-financial corporations(c)	69 224	8 444	59 960	4 854	56 501	4 908
State and local non-financial corporations(c)	—	98 998	—	92 131	—	92 062
Central bank(c)	—	12 265	—	11 399	—	11 678
Banks	170 873	7 255	181 323	8 384	174 080	7 064
Other depository corporations	145	20 125	227	24 943	363	31 535
Life insurance corporations	30 064	17 251	22 457	14 108	11 336	13 266
Other insurance corporations	10 371	14 713	8 905	16 883	14 896	16 120
Central borrowing authorities	—	30	—	87	—	30
Financial intermediaries	25 467	106 001	30 963	105 336	34 684	112 754
Rest of world	—	297 543	—	284 244	—	276 507
HELD BY						
Private non-financial corporations	13 501	177 797	8 395	172 157	7 465	178 138
National public non-financial corporations	—	2 689	—	6 647	—	3 635
State and local public non-financial corporations	—	71	—	310	—	279
Banks	9 367	63 844	8 812	64 169	10 421	73 883
Other depository corporations	—	9 776	—	10 506	353	15 795
Life insurance corporations	58 212	49 453	58 554	52 111	48 851	58 883
Pension funds	120 959	102 933	117 211	106 081	117 232	108 456
Other insurance corporations	3 090	22 174	4 440	20 331	3 562	17 947
Financial intermediaries	65 634	43 244	59 724	43 707	50 819	48 687
National general government	34 682	20 978	30 040	16 541	28 307	16 879
State and local general government	—	100 619	—	92 609	—	91 655
Households	178 975	81 551	159 401	87 888	140 979	78 562
Rest of world	291 731	63 630	286 848	64 951	296 415	62 659

(a) Includes units in trusts. (b) The unlisted estimated market values are considered to be of poor quality unless based on net asset values. They should be used cautiously. (c) Net asset values.

Source: Australian National Accounts: Financial Accounts (5232.0).

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 which sell them in the market. The Australian Government issues treasury notes, state governments and large corporations issue commercial paper and banks issue negotiable certificates of deposit. Table 26.16 shows the amount on issue by sector of issuer and sector of holder of the various types of money market securities.

**26.15 SHORT-TERM MONEY MARKET RATES — 30 June**

	2001	2002	2003
	% p.a.	% p.a.	% p.a.
11 am call	5.00	4.72	4.75
Bank-accepted bills-90 days	4.97	5.07	4.67

Source: Reserve Bank of Australia Bulletin.

**26.16 SHORT-TERM DEBT SECURITIES, Amounts outstanding — 30 June**

	2001	2002	2003
	\$m	\$m	\$m
<b>ISSUED BY</b>			
Private non-financial corporations	79 771	77 715	73 775
National public non-financial corporations	3 841	2 637	2 104
State and local public non-financial corporations	—	—	2
Banks	91 811	102 938	131 485
Other depository corporations	50 430	49 238	36 379
Life insurance corporations	702	475	4
Other insurance corporations	—	43	37
Central borrowing authorities	8 199	10 220	8 767
Financial intermediaries n.e.c.	22 031	25 306	24 385
National general government	5 290	4 477	246
Households	8 936	8 923	10 538
Rest of world	3 629	2 688	4 018
<b>Total</b>	<b>274 640</b>	<b>284 660</b>	<b>291 740</b>
<b>HELD BY</b>			
Private non-financial corporations	23 784	18 703	27 418
National public non-financial corporations	779	797	495
State and local public non-financial corporations	182	126	36
Central bank	1 013	1 897	500
Banks	43 136	72 659	72 201
Other depository corporations	35 837	32 323	39 305
Life insurance corporations	14 861	15 552	17 113
Pension funds	18 218	16 541	20 644
Other insurance corporations	4 923	5 771	7 278
Central borrowing authorities	10 592	9 919	11 817
Financial intermediaries n.e.c.	26 686	22 030	15 660
State and local general government	315	533	209
Households	10 622	8 333	8 411
Rest of world	83 692	79 476	70 653
<b>Total</b>	<b>274 640</b>	<b>284 660</b>	<b>291 740</b>

Source: Australian National Accounts: Financial Accounts (5232.0).

## 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 small amounts of zero-coupon or deep discount securities which 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 26.17 shows the market yields at the end of June of the last three financial years for a range of bonds.

Historically, the main issuers of bonds have been the Australian Government and state governments, the latter through their central borrowing authorities. Corporate bonds are issued only by very large private trading and financial enterprises. In recent years banks and asset-backed security trusts have issued increasing amounts as government issuance has decreased. The amounts outstanding on bonds at end June of the last three financial years are shown in table 26.18.

**26.17 BOND MARKET, Market yields — 30 June**

	2001	2002	2003
	% p.a.	% p.a.	% p.a.
Treasury bonds			
3 years	5.55	5.61	4.47
5 years	5.78	5.78	4.71
10 years	6.04	5.99	5.01
New South Wales T-corp bonds			
3 years	5.88	5.79	4.64
5 years	6.13	6.04	4.89
10 years	6.24	6.29	5.20
Finance company debentures			
2 years	5.20	5.45	4.10
3 years	5.45	5.60	4.20

Source: Reserve Bank of Australia Bulletin.

**Foreign exchange market**

The foreign exchange market is the means whereby currencies of different countries can be bought and sold. In October 1983, the Commonwealth Government decided to float the Australian dollar, allowing its value to be determined by market forces with few exchange controls and little Reserve Bank intervention. Prior to 1983, the Australian dollar was pegged to a basket of currencies which were weighted according to their trading significance to Australia.

Table 26.19 shows the value of the Australian dollar against major currencies at end June of the last three financial years.

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 movements with a view to making a profit. Table 26.20 shows daily averages of foreign exchange turnover against all currencies.

**26.18 BONDS, Amounts outstanding — 30 June**

	2001	2002	2003
	\$m	\$m	\$m
<b>ISSUED BY</b>			
Private non-financial corporations			
Issued in Australia	15 684	17 809	22 204
Issued offshore	36 109	33 572	38 407
National public non-financial corporations			
Issued in Australia	3 387	4 976	3 013
Issued offshore	9 376	10 708	10 266
State and local public non-financial corporations			
Issued in Australia	—	—	—
Issued offshore	—	—	—
Banks			
Issued in Australia	25 783	26 735	24 713
Issued offshore	81 097	87 827	90 373
Other depository corporations			
Issued in Australia	13 826	11 698	10 287
Issued offshore	15 362	16 277	24 975
Other insurance corporations			
Issued in Australia	123	128	428
Issued offshore	74	—	334
Life insurance corporations			
Issued in Australia	1 266	1 256	1 257
Issued offshore	1 313	968	789
Central borrowing authorities			
Issued in Australia	54 136	52 998	54 509
Issued offshore	19 545	17 513	18 930
Financial intermediaries n.e.c.			
Issued in Australia	30 723	42 529	51 645
Issued offshore	32 526	37 735	44 544
National general government			
Issued in Australia	68 082	64 155	64 897
Issued offshore	1 314	1 449	1 439
State and local general government			
Issued in Australia	430	306	304
Issued offshore	—	—	—
Rest of the world			
Issued in Australia	—	—	—
Issued offshore	54 492	54 979	58 144
<b>Total</b>	<b>464 650</b>	<b>483 620</b>	<b>521 460</b>
<b>HELD BY</b>			
Private non-financial corporations	7 916	7 202	6 215
National public non-financial corporations	1 457	372	124
State and local public non-financial corporations	200	71	26
Central bank	39 709	40 163	42 805
Banks	34 338	31 011	32 931
Other depository corporations	15 169	20 047	16 236
Life insurance corporations	41 311	38 789	38 579
Pension funds	34 988	38 542	40 499
Other insurance corporations	21 690	21 989	28 949
Central borrowing authorities	8 852	9 443	9 608
Financial intermediaries n.e.c.	26 356	28 178	29 739
State and local general government	274	315	575
National general government	9	15	22
Households	7 355	6 889	7 151
Rest of world	225 026	240 594	268 001
<b>Total</b>	<b>464 650</b>	<b>483 620</b>	<b>521 460</b>

Source: Australian National Accounts: Financial Accounts (5232.0).

**26.19 VALUE OF AUSTRALIAN DOLLAR, Against major currencies — At last trading day in June**

	2001	2002	2003
United States of America dollar	0.5086	0.5670	0.6700
United Kingdom pound	0.3623	0.3720	0.4074
Japanese yen	63.63	68.09	80.44
Euro	0.6070	0.5790	0.5907

Source: Australian Tax Office.

**26.20 FOREIGN EXCHANGE TURNOVER AGAINST ALL CURRENCIES, Daily averages(a)**

	2000-01	2001-02	2002-03
	\$m	\$m	\$m
Transactions by foreign exchange dealers(b)			
Outright spot(c)	21 367	22 772	30 051
Outright forward(d)	5 094	6 407	7 424
Swaps	46 824	58 404	67 991
Options	3 103	4 832	6 289
<b>Total</b>	<b>76 387</b>	<b>92 414</b>	<b>111 755</b>

(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 Bulletin.

## Managed funds

The term ‘managed funds’ is used loosely in the financial community to embrace two broad types of institutions. The first are collective investment institutions (such as life insurance companies) which buy assets on their own account. The second are investment or fund managers which act as investment agents for the collective investment institutions as well as others with substantial funds to invest. Investment managers have relatively small balance sheets because most of the assets they acquire are purchased on behalf of clients. The significant growth in managed

funds to 2000 (graph 26.21) eased during 2001 and has been flat since. The main influence on this growth pattern has been share market prices.

## Collective investment institutions

As the name implies, collective investment institutions pool the funds of many small 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, for example, the degree of risk, the mix of capital growth and income, and the degree of asset diversification. Collective investment institutions comprise the following:

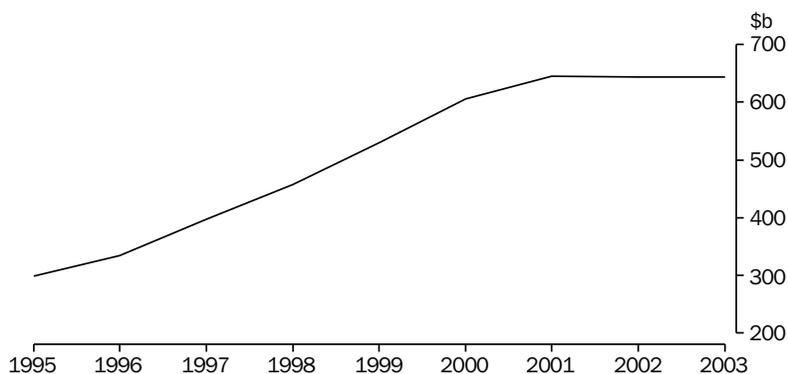
- life insurance corporations
- pension and approved deposit funds
- public unit trusts
- friendly societies
- common funds
- cash management trusts.

Funds of a speculative nature that do not offer redemption facilities — for example, agricultural and film trusts — are excluded.

To derive the total assets of collective investment institutions 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.

Although statistics for each of these institutions were presented earlier in this chapter, the accompanying tables summarise their consolidated position (i.e. after the cross investment between the institutions has been eliminated). Table 26.22 shows their assets by type of institution and table 26.23 shows assets by type of investment.

### 26.21 MANAGED FUNDS, Consolidated assets — 30 June



Source: *Managed Funds, Australia* (5655.0).

### 26.22 ASSETS OF MANAGED FUNDS — 30 June 2003

Type of institution	Total \$m	Cross invested \$m	Consolidated \$m
Life insurance corporations(a)	194 859	35 947	158 913
Pension funds	379 274	67 543	311 731
Public unit trusts	156 322	25 727	130 595
Friendly societies	6 116	1 544	4 572
Common funds	8 930	324	8 606
Cash management trusts	29 306	—	29 306
<b>Total</b>	<b>774 808</b>	<b>131 085</b>	<b>643 723</b>

(a) Investments by pension funds which are held and administered by life insurance offices are included under life insurance offices.

Source: *Managed Funds, Australia, June 2003* (5655.0).

### 26.23 MANAGED FUNDS, Consolidated assets

Type of investment	Amounts outstanding at 30 June		
	2001 \$m	2002 \$m	2003 \$m
Deposits, loans and placements	76 779	73 180	77 123
Short-term debt securities	62 882	63 120	67 670
Long-term debt securities	65 461	62 999	62 777
Equities and units in trusts	229 898	223 897	217 632
Land and buildings	69 904	73 607	77 805
Overseas assets	118 062	123 086	116 223
Other assets	22 208	24 380	24 493
<b>Total</b>	<b>645 193</b>	<b>644 269</b>	<b>643 723</b>

Source: *Managed Funds, Australia* (5655.0).

## Investment managers

Specialist investment managers are employed on a fee-for-service basis to manage and invest in approved assets on their clients' behalf. They usually act for the smaller collective investment institutions such as public unit trusts. They are not accessible to the small investor. Investment managers provide a sophisticated level of service, matching assets and liabilities. They act in the main as the managers of pooled funds, but also manage clients' investments on an individual portfolio basis.

A considerable proportion of the assets of collective investment institutions, particularly the statutory funds of life insurance corporations and assets of pension funds, is channelled through investment managers. At 30 June 2003, \$450.3b (58% of the unconsolidated assets of collective investment institutions) were channelled through investment managers. Table 26.24 shows the total unconsolidated assets of each type of collective investment institution and the amount of these assets invested through investment managers.

Investment managers also accept money from investors other than collective investment institutions. At 30 June 2003, investment managers invested \$183.0b on behalf of government bodies, general insurers and other clients, including overseas clients.

### 26.24 ASSETS OF MANAGED FUNDS, Invested through investment managers — 30 June 2003

Type of fund	Unconsolidated assets of managed funds \$m	Assets invested with investment managers \$m
Life insurance corporations(a)	194 859	134 951
Pension and approved deposit funds	379 274	187 199
Public unit trusts	156 322	89 266
Friendly societies	6 116	2 557
Common funds	8 930	8 216
Cash management trusts	29 306	28 141
<b>Total</b>	<b>774 808</b>	<b>450 330</b>

(a) Includes both superannuation and ordinary business.

Source: *Managed Funds, Australia, June 2003* (5655.0).

## 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 8, Housing*. Table 26.25 shows the size of commitments by financial institutions for the four types of lending. 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.

### 26.25 FINANCIAL INSTITUTIONS, Lending commitments

Type of lending activity	2000–01 \$m	2001–02 \$m	2002–03 \$m
Housing finance	74 424	96 482	106 691
Personal finance	52 700	58 137	68 940
Commercial finance	183 815	207 012	261 405
Lease finance	6 061	6 626	6 312
<b>Total</b>	<b>317 000</b>	<b>365 718</b>	<b>468 584</b>

Source: *Lending Finance, Australia* (5671.0).

## Lease finance

The statistics in tables 26.26 and 26.27 measure 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.

### 26.26 LEASE FINANCE COMMITMENTS, By type of lessor

	2000–01 \$m	2001–02 \$m	2002–03 \$m
All banks	2 062	1 906	1 976
Finance companies	1 571	1 813	1 251
General financiers	1 580	1 636	1 706
Other(a)	849	1 271	1 379
<b>Total</b>	<b>6 061</b>	<b>6 626</b>	<b>6 312</b>

(a) Includes money market corporations.

Source: *Lending Finance, Australia* (5671.0).

**26.27 LEASE FINANCE COMMITMENTS, By type of good leased**

	2000-01	2001-02	2002-03
	\$m	\$m	\$m
Motor vehicles and other transport equipment	2 530	2 856	2 905
Construction and earth moving equipment	217	231	313
Agricultural machinery and equipment	212	220	174
Automatic data processing equipment and office machinery	1 944	2 122	1 956
Shop and office furniture, fittings and equipment	343	340	164
Other goods	815	857	801
<b>Total</b>	<b>6 061</b>	<b>6 626</b>	<b>6 312</b>

Source: *Lending Finance, Australia (5671.0)*.

**26.28 PERSONAL FINANCE COMMITMENTS, By type of lender(a)**

	2000-01	2001-02	2002-03
	\$m	\$m	\$m
All banks	40 170	43 721	52 926
Finance companies	6 855	7 885	9 373
Credit cooperatives	3 060	3 325	3 498
Other lenders(b)	2 614	3 207	3 143
<b>Total</b>	<b>52 700</b>	<b>58 137</b>	<b>68 940</b>

(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)*.

**26.29 PERSONAL FINANCE COMMITMENTS, By type of facility**

	2000-01	2001-02	2002-03
	\$m	\$m	\$m
Fixed loan commitments	22 697	25 620	30 589
Revolving credit commitments			
New and increased credit limits	30 003	32 517	38 352
Cancellations and reductions in credit limits	11 046	14 960	13 240
Credit limits at 30 June			
Total	115 274	129 615	156 396
Used	55 582	61 000	75 029

Source: *Lending Finance, Australia (5671.0)*.

**Personal finance**

Tables 26.28 and 26.29 present statistics of commitments made by significant lenders (banks, credit cooperatives, finance companies, etc.) to lend to individuals for their own personal (non-business) use. The revolving credit commitments provided in table 26.29 include commitments for overdrafts, credit cards and other personal revolving lines of credit.

**Commercial finance**

The statistics in tables 26.30 and 26.31 measure 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.

### 26.30 COMMERCIAL FINANCE COMMITMENTS(a)

	2000-01	2001-02	2002-03
	\$m	\$m	\$m
All banks	153 893	171 022	227 708
Finance companies	5 615	6 937	6 192
Money market corporations	12 658	12 139	5 776
Other lenders(b)	11 650	16 911	21 730
<b>Total</b>	<b>183 816</b>	<b>207 012</b>	<b>261 406</b>

(a) Includes both fixed loan facilities and new and increased lending commitments under revolving credit facilities.

(b) Includes permanent building societies, general financiers and pastoral finance companies.

Source: *Lending Finance, Australia* (5671.0).

### 26.31 FIXED COMMERCIAL FINANCE COMMITMENTS

Purpose	2000-01	2001-02	2002-03
	\$m	\$m	\$m
Construction	7 968	9 844	18 560
Purchase of real property(a)	34 837	53 399	69 831
Purchase of plant and equipment	9 249	13 571	12 738
Refinancing	10 325	11 764	12 369
Other purposes	37 030	41 828	55 291
<b>Total</b>	<b>99 409</b>	<b>130 408</b>	<b>168 791</b>

(a) Purchase of real property includes those finance commitments to individuals for the purchase of dwellings for rental or resale.

Source: *Lending Finance, Australia* (5671.0).

## 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. Under these arrangements the Reserve Bank has stronger regulatory powers in the payments system in accordance with the *Payments Systems (Regulations) Act 1998* (Cwlth), to be 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. \$1 and \$2 notes were replaced by coins in 1984 and 1988 respectively, and 1c and 2c coins ceased to be issued from 1 February 1992.

Table 26.32 shows the value of notes on issue on the last Wednesday of June in the last three financial years. Table 26.33 shows the value of coin on issue at the same time points.

### 26.32 VALUE OF AUSTRALIAN NOTES ON ISSUE

Units	Last Wednesday in June		
	2001	2002	2003
\$2	\$m 45	45	45
\$5	\$m 428	530	515
\$10	\$m 657	802	762
\$20	\$m 1 982	2 801	2 514
\$50	\$m 11 887	14 718	14 918
\$100	\$m 11 935	13 057	13 406
<b>Total</b>	<b>\$m 26 936</b>	<b>31 954</b>	<b>32 161</b>
Increase	% 5.9	18.6	0.7

Source: *Reserve Bank of Australia*.

### 26.33 VALUE OF AUSTRALIAN DECIMAL COIN ON ISSUE

Units	Last Wednesday in June		
	2001	2002	2003
1c	\$m 22	22	22
2c	\$m 29	29	29
5c	\$m 131	143	148
10c	\$m 121	135	140
20c	\$m 172	198	203
50c	\$m 248	281	290
\$1	\$m 414	483	506
\$2	\$m 626	748	796
<b>Total</b>	<b>\$m 1 763</b>	<b>2 039</b>	<b>2 134</b>
Increase	% 4.6	15.6	4.6

Source: *Reserve Bank of Australia*.

## Money supply measures

The money supply, as measured and published by the Reserve Bank, refers to the amount of cash held by the public plus deposits with specified financial institutions. The measures range from the narrowest category, money base, through to the widest category, broad money, with other measures in between. The measures mainly used 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.

*M3* — is defined as currency plus bank deposits of the private non-bank sector.

*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.

The money supply under each of these measures at 30 June for the last three years is shown in table 26.34.

#### 26.34 MONEY SUPPLY MEASURES — 30 June

	Units	2001	2002	2003(a)
Money base	\$m	29 607	34 936	35 041
M3	\$m	439 990	473 715	538 314
Broad money	\$m	517 690	546 375	619 089
Percentage change(b)	%	7.5	5.5	13.3

(a) Series break due to other changes in bank reporting.

(b) Of broad money, over level at end of preceding June.

Source: Reserve Bank of Australia.

## Payments system

Following recommendations by the Financial System Inquiry, the Payments System Board was established within the Reserve Bank on 1 July 1998. The Payments System Board has responsibility for determining the Reserve Bank's payments system policy, under the powers set out in the *Payments Systems (Regulation) Act 1998* (Cwlth). The payments system has components for settling large amounts, and components for settling retail amounts.

The High Value Clearing System (HVCS) was implemented in August 1997. The HVCS allows all holders of Reserve Bank exchange settlement accounts to settle large value payments through a system designed to process a high volume of transactions. On 1 March 1999 the Payments System Board announced easing of restrictions on eligibility for holding exchange settlement

accounts. APRA-supervised institutions and some institutions not supervised by APRA potentially now have access.

Initially, the settlement of payments was on a net deferred basis, where settlement of interbank obligations was not completed until 9 am on the day following the sending of payment instructions. This was changed to a real-time gross settlement basis on 22 June 1998. This new settlement basis, where payments are settled immediately, contributes substantially to the reduction of settlement risk and systemic risk in the Australian payments system.

About 75% of the value exchanged in the payments system is cleared via the HVCS.

Table 26.35 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 postmasters or storekeepers, and exclude school agencies and giroPost agencies. 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.

#### 26.35 POINTS OF ACCESS TO THE AUSTRALIAN PAYMENTS SYSTEM — 30 June

	2001	2002	2003
<b>Branches</b>			
Banks	4 789	4 728	n.y.a.
Building societies and credit unions	1 356	1 236	n.y.a.
<b>Agencies</b>			
Banks	n.y.a.	n.y.a.	n.y.a.
Building societies and credit unions	n.y.a.	n.y.a.	n.y.a.
giroPost	2 821	2 962	2 990
ATM	13 289	16 398	21 603
EFTPOS terminals	375 883	415 167	n.y.a.

Source: APRA; Australian Payments Clearing Association Limited.

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Private Health Insurance Administration Council  
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## Web sites

Australian Payments Clearing Association Limited, <<http://www.apca.com.au>>  
Australian Prudential Regulation Authority (APRA), <<http://www.apra.gov.au>>  
Australian Securities and Investments Commission (ASIC), <<http://www.asic.gov.au>>  
Australian Stock Exchange (ASX), <<http://www.asx.com.au>>  
Australian Taxation Office, <<http://www.ato.gov.au>>  
Reserve Bank of Australia, <<http://www.rba.gov.au>>



## 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).

The term 'government finance statistics' refers to statistics that measure the financial activities of governments of all levels and reflect the impact of those activities on other sectors of the economy. The Australian system of Government Finance Statistics (GFS), which is used to derive the statistics presented in this chapter, is designed to provide statistical information on public sector entities in Australia classified in a uniform and systematic way.

The public sector comprises general government entities and public financial and public non-financial corporations. These entities are described in the next section. This is followed by an outline of the roles of the different levels of government and a description of the GFS classifications.

GFS enables policy makers and users to analyse the financial operations and financial position of the public sector at either the level of a specific government, institutional sector or set of transactions.

The GFS system is based on international standards set out in the *System of National Accounts* and the accrual version of the International Monetary Fund's *A Manual of Government Finance Statistics*.

GFS is consistent in scope with the Australian accounting standard for whole of government reporting — Australian Accounting Standard (AAS) 31 *Financial Reporting by Governments*. There are, however, differences in the way activities are treated and presented in GFS and AAS31.

## Public sector

The public sector can be divided into the institutional sectors described below, based on the characteristics of the organisations it comprises.

*General government* — The principal function of general government entities is to provide non-market goods and services (e.g. roads, 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.

This institutional sector covers the departments of the Australian Government, state governments and local government municipalities. It also includes agencies and government authorities under departmental administration which are engaged in the provision of public administration, defence, law enforcement, welfare, public education, and health. Also included are non-departmental bodies which independently perform the government functions of regulation (e.g. Nurses Registration Boards and the Maritime Safety Authority), provision of non-market services (e.g. the Australian Broadcasting Corporation), and redistribution of income (e.g. the Aboriginal and Torres Strait Islander Commission). Some of these bodies may be corporations, but they are still considered part of the general government sector if they perform general government functions.

Unincorporated government enterprises which provide goods and services to their governments and to the public at prices that are not economically significant are also included in this sector. In addition, government quasi-corporations which sell their output exclusively to other government units, while not in open competition with other producers, are classified as general government units.

*Public non-financial corporations (PNFCs)* — The main function of PNFCs is to provide goods and services which are predominantly market, non-regulatory and non-financial in nature, and financed through sales to consumers of these goods and services.

Enterprises in the PNFC sector differ from those in the general government sector in that all or most of their production costs are recovered from

consumers, rather than being financed from the general taxation revenue of government. Some enterprises, however, do receive subsidies to make up for shortfalls incurred as a result of government policy, for example, in the provision of 'community service obligations' at concessional rates.

PNFCs vary in their degree of 'commercialism', from those which are quite heavily reliant on parent governments for subsidies, such as rail and bus transport undertakings, to those which are net contributors to government revenue. Governments may exercise control over PNFCs by either owning more than 50% of the voting stock or otherwise controlling more than half the shareholders' voting power, or through legislation, decree or regulation which empowers the government to determine corporate policy or to appoint the directors. Examples of PNFCs are Telstra, Australia Post, state rail authorities, and local bus and transport operations.

*Public financial corporations (PFCs)* — PFCs are government-owned or controlled enterprises which engage in financial intermediation (i.e. trade in financial assets and liabilities), such as central borrowing authorities, government banks and insurance offices, or home lending schemes.

## Levels of government

The public sector comprises all organisations owned or controlled by any of the three levels of government within the Australian political system; national, state/territory and local.

## Australian Government

The Australian (Commonwealth) Government, the national government, has exclusive responsibility under the Constitution for the administration of a wide range of functions including defence, foreign affairs and trade, and immigration. A distinctive feature of the Australian federal system is that the Australian Government levies and collects all income tax, from individuals as well as from enterprises. It also collects a significant portion of other taxes, including taxes on the provision of goods and services such as the Goods and Services Tax (GST). The Australian Government distributes part of this revenue to other levels of government, principally the states and territories.

## State governments

State and territory governments (referred to as 'state' governments in tables in this chapter) perform the full range of government functions, other than those the Constitution deems the exclusive domain of the Australian Government. The functions mainly administered by state and territory governments include public order, health, education, administration, transport and maintenance of infrastructure. The revenue base of state and territory governments is narrower than that of the Australian Government and consists of taxes on property, on employers' payrolls, and on provision and use of goods and services. This revenue base is supplemented by grants from the Australian Government, which includes an allocation of GST revenue.

## Local governments

Local government authorities govern areas typically described as cities, towns, shires, boroughs, municipalities and district councils. Although the range of functions undertaken by local governments varies between the different jurisdictions, their powers and responsibilities are generally similar and cover such matters as:

- the construction and maintenance of roads, streets and bridges
- water, sewerage and drainage systems
- health and sanitary services
- the regulation of building standards
- the administration of regulations relating to items such as slaughtering, weights and measures, and registration of dogs.

Local governments also provide transport facilities, hospitals, charitable institutions, recreation grounds, parks, swimming pools, libraries, museums and other business undertakings. Local governments' own-source revenue is derived mainly from property taxes. They also rely on grants from the Australian Government and their parent state governments. The Australian Capital Territory has no separate local government.

## Multi-jurisdictional

The multi-jurisdictional sector in the GFS contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into this category are the public universities.

## Understanding the GFS financial statements

The GFS conceptual framework is divided into a number of separate statements, each of which is designed to draw out analytical aggregates or balances of particular economic significance and which, taken together, provide for a thorough understanding of the financial positions of jurisdictions individually and collectively. These published statements are the Operating Statement, the Cash Flow Statement, and the Balance Sheet.

### Operating Statement

The Operating Statement presents details of transactions in GFS revenues, GFS expenses and the net acquisition of non-financial assets for an accounting period. GFS revenues are broadly defined as transactions that increase net worth and GFS expenses as transactions that decrease net worth. Net acquisition of non-financial assets equals gross fixed capital formation, less depreciation, plus changes in inventories plus other transactions in non-financial assets. 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. It reflects the sustainability of government operations. GFS Net Lending(+)/Borrowing(-) is equal to NOB minus the total net acquisition of non-financial assets. A positive result reflects a net lending position while a negative result reflects a net borrowing position.

### Cash Flow Statement

The Cash Flow Statement identifies how cash is generated and applied in a single accounting period. 'Cash' means cash on hand (notes and coins held and deposits held at call with a bank or other financial institution) and cash equivalents (highly liquid investments which are readily convertible to cash on hand at the investor's option and overdrafts considered integral to the cash management function).

The Cash Flow Statement reflects a cash basis of recording (the other statements are on an accruals accounting basis) where the information has been derived indirectly from underlying accrued transactions and movements in balances. This, in effect, means that transactions are captured when cash is received or when cash payments are made. Cash transactions are specially identified because they allow the compilation of the cash-based

Surplus(+)/Deficit(-) measure and because the management of cash is often considered an integral function of accrual accounting.

The Surplus(+)/Deficit(-) is a broad indicator of a sector's 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 (assuming that no revaluations and other changes occur). When it is negative (i.e. in deficit), it is a measure of the extent to which government requires cash, either by running down its financial assets or by drawing on the cash reserves of the domestic economy, or from overseas.

## Balance Sheet

The Balance Sheet is the statement of an entity's financial position at a specific point in time. It shows the entity's stock of assets, liabilities and GFS Net Worth. GFS Net Worth is an economic measure of 'wealth' calculated as assets less liabilities for the general government sector and as assets less liabilities less shares and other contributed capital for the PNFCs and PFCs sectors.

## Total public sector, all levels of government combined

This section sets out the Operating Statement, Cash Flow Statement and Balance Sheet for the total public sector for all levels of government.

## Operating Statement

As table 27.1 shows, in 2001–02 the GFS Net Operating Balance for the total public sector for levels of all government combined was \$1,283m. GFS Net Borrowing was \$4,853m.

## Cash Flow Statement

As shown in table 27.2, in 2001–02 the total public sector surplus for all levels of government combined was \$3,203m. The main contributors to this result were net cash inflows from operating activities of \$28,267m being partly offset by net cash outflows from investments in non-financial assets of \$23,695m.

## Balance Sheet

GFS Net Worth reflects the contribution of governments to the wealth of Australia. As shown in table 27.3, the consolidated net worth as at 30 June 2002 for the total public sector for all levels of government combined was \$354,973m.

## General government, all levels of government combined

This section sets out the Operating Statement, Cash Flow Statement and Balance Sheet for the general government sector for all levels of government.

**27.1 ALL AUSTRALIAN GOVERNMENTS, Total public sector: Operating Statement — 2001–02**

	Commonwealth	Multi-jurisdictional(a)	State	Local	All levels of government(b)
	\$m	\$m	\$m	\$m	\$m
GFS Revenue	211 920	10 624	135 394	17 617	311 879
<i>less</i>					
GFS Expenses	215 570	10 214	131 044	16 609	310 596
<i>equals</i>					
<b>Net Operating Balance</b>	<b>-3 650</b>	<b>410</b>	<b>4 350</b>	<b>1 009</b>	<b>1 283</b>
<i>less</i>					
Net acquisition of non-financial assets	-638	292	5 442	985	6 136
<i>equals</i>					
<b>GFS Net Lending(+)/Borrowing(-)</b>	<b>-3 012</b>	<b>118</b>	<b>-1 092</b>	<b>23</b>	<b>-4 853</b>

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into this category are the public universities.  
 (b) The sums of individual levels of government may not agree with total figures for all levels of government due to transfers between levels of government.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

## 27.2 ALL AUSTRALIAN GOVERNMENTS, Total public sector: Cash Flow Statement — 2001–02

	Commonwealth	Multi-jurisdictional(a)	State	Local	All levels of government(b)
	\$m	\$m	\$m	\$m	\$m
<b>CASH FLOW STATEMENT</b>					
Cash receipts from operating activities	209 895	10 829	139 385	17 417	309 319
Cash payments for operating activities	-205 726	-9 519	-120 306	-13 375	-281 053
<i>Net cash flows from operating activities</i>	<i>4 170</i>	<i>1 310</i>	<i>19 079</i>	<i>4 042</i>	<i>28 267</i>
Net cash flows from investments in non-financial assets	-4 286	-1 076	-14 523	-3 788	-23 695
Net cash flows from investments in financial assets for policy purposes	3 591	-89	1 207	—	4 624
Net cash flows from investments in financial assets for liquidity purposes	3 192	-96	-3 874	-33	-1 891
Net cash flows from financing activities	-4 852	130	-6 010	184	-9 036
<b>Net Increase(+)/Decrease(-) in Cash Held</b>	<b>1 815</b>	<b>179</b>	<b>-4 122</b>	<b>405</b>	<b>-1 732</b>
<b>SURPLUS(+)/DEFICIT(-)</b>					
<b>Surplus(+)/Deficit(-)</b>	<b>-1 451</b>	<b>234</b>	<b>4 583</b>	<b>194</b>	<b>3 203</b>

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into this category are the public universities.

(b) The sums of individual levels of government may not agree with total figures for all levels of government due to transfers between levels of government.

Note: Negative figures denote outflows.

Source: *Government Finance Statistics, Australia, 2001–02 (5512.0)*.

## 27.3 ALL AUSTRALIAN GOVERNMENTS, Total public sector: Balance Sheet — 30 June 2002

	Commonwealth	Multi-jurisdictional(a)	State	Local	All levels of government(b)
	\$m	\$m	\$m	\$m	\$m
<b>Assets</b>					
Financial assets	135 577	8 058	102 063	9 377	243 516
Non-financial assets	66 734	18 426	373 119	154 132	612 406
<i>Total</i>	<i>202 311</i>	<i>26 484</i>	<i>475 183</i>	<i>163 509</i>	<i>855 922</i>
<b>Liabilities</b>					
Liabilities	265 132	5 584	202 399	9 266	470 922
Shares and other contributed capital	30 130	—	—	-2	30 028
<b>GFS Net Worth</b>	<b>-92 951</b>	<b>20 899</b>	<b>272 778</b>	<b>154 246</b>	<b>354 973</b>
Net debt(c)	34 484	-4 441	12 244	-1 677	40 610
Net financial worth(d)	-159 685	2 474	-100 342	114	-257 433

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into this category are the public universities.

(b) The sums of individual levels of government may not agree with total figures for all levels of government due to assets and liabilities held between levels of government. (c) Equals deposits held, advances received, Reserve Bank notes on issue and borrowing less cash and deposits, advances paid, and investments, loans and placements. (d) Equals total financial assets less total liabilities less shares and other contributed capital.

Source: *Government Finance Statistics, Australia, 2001–02 (5512.0)*.

## Operating Statement

Table 27.4 presents an Operating Statement for the general government sector for 2001–02.

In 2001–02 the GFS NOB for the general government sector for all levels of government combined was negative \$610m, indicating that GFS operating expenses exceeded GFS operating revenue. The largest contributor to this result was the NOB for the Commonwealth Government of negative \$3,647m. This was partially offset by the NOB for the consolidated state governments of \$2,562m.

GFS Net Borrowing for the general government sector for all Australian governments combined was \$4,700m. The Commonwealth Government and the state governments contributed \$3,278m and \$460m respectively to the aggregate result.

## Cash Flow Statement

As table 27.5 shows, in 2001–02 the general government sector for all levels of government combined recorded a cash surplus of \$2,995m. On a consolidated basis, state and territory governments collectively contributed \$4,314m to the overall surplus while the Commonwealth Government recorded a deficit of \$1,099m.

## Balance Sheet

GFS Net Worth reflects the contribution of governments to the wealth of Australia. The consolidated GFS Net Worth as at 30 June 2002 for the general government sector for all levels of government combined, as shown in table 27.6, was \$405,628m. The most significant assets held were land and fixed assets of \$414,180m followed by equity in financial assets of \$170,414m. The most significant liabilities were unfunded superannuation liability and other employee entitlements of \$155,031m, followed by borrowings of \$113,022m.

## Total public sector, state and territory governments

This section provides the Operating Statement, Cash Flow Statement and Balance Sheet for the total public sector for each of the state and territory governments. The results for local government appear separately in this chapter and are not reflected in these tables.

## Operating Statement

Table 27.7 summarises the net operating results for the total public sector for each state and territory government for 2001–02.

## Cash Flow Statement

Table 27.8 summarises the cash results for 2001–02 for the total public sector for each state and territory government.

## Balance Sheet

Table 27.9 summarises the Balance Sheet results as at 30 June 2002 for the total public sector for each state and territory government.

## General government, state and territory governments

This section sets out the Operating Statement, Cash Flow Statement and Balance Sheet for the general government sector for each state and territory government.

## Operating Statement

Table 27.10 summarises the net operating results for the general government sector for each state and territory government for 2001–02.

## Cash Flow Statement

Table 27.11 summarises the cash results for 2001–02 for the general government sector for each state and territory government.

## Balance Sheet

Table 27.12 summarises the Balance Sheet results as at 30 June 2002 for the general government sector for each state and territory government.

## Total public sector, local governments

This section sets out the Operating Statement, Cash Flow Statement and Balance Sheet for the total public sector for local governments. The Australian Capital Territory has no separate local government.

## Operating Statement

Table 27.13 summarises the net operating results for the total public sector for local governments for 2001–02.

**27.4 ALL AUSTRALIAN GOVERNMENTS, General government: Operating Statement — 2001–02**

	Commonwealth	Multi-jurisdictional(a)	State	Local	All levels of government(b)
	\$m	\$m	\$m	\$m	\$m
<b>GFS Revenue</b>					
Taxation revenue	177 237	—	33 263	6 749	216 915
Current grants and subsidies	—	4 521	50 752	2 154	57
Sales of goods and services	3 784	4 871	9 980	5 759	22 996
Interest from public non-financial corporations	52	—	172	—	225
Interest from public financial corporations	454	24	306	41	825
Interest from other sources	681	230	32	328	1 030
Dividend income	4 766	57	2 875	11	7 708
Other	2 785	757	9 322	2 577	11 666
<i>Total</i>	189 759	10 460	106 702	17 620	261 422
<i>less</i>					
<b>GFS Expenses</b>					
Gross operating expenses					
Depreciation	1 667	688	5 301	3 651	11 307
Employee expenses	13 684	5 580	44 063	5 627	68 953
Other operating expenses	34 154	3 284	27 922	6 718	70 692
<i>Total</i>	49 504	9 552	77 287	15 997	150 952
Nominal superannuation interest expenses	4 987	—	2 635	—	7 622
Other interest expenses	5 511	37	2 295	400	8 007
Other property expenses	—	—	—	—	—
Current transfers					
Grant expenses to state governments	49 284	1	265	—	266
Grant expenses to the private sector	7 047	16	10 269	18	17 350
Grant expenses to universities	4 327	—	127	—	—
Grant expenses to local governments	490	—	1 994	—	—
Grant expenses n.e.c.	—	—	21	—	—
Subsidy expenses to public corporations	361	—	3 534	—	3 895
Subsidy expenses to other	4 570	9	537	—	5 116
Other current transfers	63 035	359	1 122	109	64 208
Capital transfers					
Grant expenses to public non-financial corporations	—	—	1 459	—	1 459
Grant expenses to public financial corporations	—	—	22	—	22
Grant expenses to other levels of government	3 185	—	557	—	—
Grant expenses n.e.c.	1 106	—	1 823	17	2 946
Other capital transfers	—	2	194	9	189
<i>Total</i>	193 406	9 976	104 140	16 551	262 032
<i>equals</i>					
<b>GFS Net Operating Balance</b>	<b>-3 647</b>	<b>483</b>	<b>2 562</b>	<b>1 069</b>	<b>-610</b>
<i>less</i>					
Net acquisition of non-financial assets					
Gross fixed capital formation	1 172	1 092	8 455	4 517	15 248
<i>less</i> Depreciation	1 667	688	5 301	3 651	11 307
<i>plus</i> Change in inventories	185	—	-15	-10	160
<i>plus</i> Other transactions in non-financial assets	-59	41	-117	125	-10
<i>Total</i>	-369	445	3 022	980	4 090
<i>equals</i>					
<b>GFS Net Lending(+)/Borrowing(-)</b>	<b>-3 278</b>	<b>39</b>	<b>-460</b>	<b>89</b>	<b>-4 700</b>

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into this category are the public universities.

(b) The sums of individual levels of government may not agree with total figures for all levels of government due to transfers between levels of government.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

**27.5 ALL AUSTRALIAN GOVERNMENTS, General government: Cash Flow Statement — 2001–02**

	Commonwealth	Multi-jurisdictional(a)	State	Local	All levels of government(b)
	\$m	\$m	\$m	\$m	\$m
<b>CASH FLOW STATEMENT</b>					
Cash receipts from operating activities					
Taxes received	174 308	—	33 360	6 733	214 161
Receipts from sales of goods and services	3 727	4 444	9 826	5 768	21 996
Grants and subsidies received	—	4 672	53 910	2 866	948
Interest received from public non-financial corporations	46	—	173	—	218
Interest received from public financial corporations	—	1	303	87	391
Interest from other sources	872	211	432	293	1 569
Other receipts	7 271	1 322	10 204	1 652	16 936
<i>Total</i>	<i>186 223</i>	<i>10 651</i>	<i>108 209</i>	<i>17 398</i>	<i>256 220</i>
Cash payments for operating activities					
Payments for goods and services	-48 427	-7 872	-68 434	-12 774	-135 757
Grants and subsidies paid to state governments	-52 364	-1	-20	—	—
Grants and subsidies paid to the private sector	-10 627	—	-12 967	-27	-23 620
Grants and subsidies paid to universities	-4 405	—	-128	—	—
Grants and subsidies paid to local governments	-495	—	-2 523	—	-89
Grants and subsidies paid to public corporations	-232	—	-5 279	—	-5 511
Interest paid	-6 303	-26	-2 288	-395	-8 801
Other payments	-63 355	-1 481	-4 074	-137	-65 193
<i>Total</i>	<i>-186 208</i>	<i>-9 379</i>	<i>-95 713</i>	<i>-13 333</i>	<i>-238 970</i>
<i>Net cash flows from operating activities</i>	<i>15</i>	<i>1 272</i>	<i>12 495</i>	<i>4 065</i>	<i>17 249</i>
Net cash flows from investments in non-financial assets					
Sales of non-financial assets	914	66	1 020	598	2 598
Purchases of new non-financial assets	-2 107	-1 197	-9 197	-4 363	-16 863
Purchases of secondhand non-financial assets	—	—	-5	-2	-7
<i>Total</i>	<i>-1 193</i>	<i>-1 131</i>	<i>-8 182</i>	<i>-3 767</i>	<i>-14 273</i>
Net cash flows from investments in financial assets for policy purposes	3 422	-1	1 205	—	4 365
Net cash flows from investments in financial assets for liquidity purposes	3 097	-94	-829	-15	1 216
Net cash flows from financing activities					
Advances received (net)	—	79	-323	15	-55
Borrowing (net)	-3 903	52	-1 320	-22	-5 199
Deposits received (net)	7	—	-129	21	-101
Other financing (net)	-393	9	-452	104	908
<i>Total</i>	<i>-4 290</i>	<i>140</i>	<i>-2 225</i>	<i>118</i>	<i>-4 447</i>
<b>Net Increase(+)/Decrease(-) in Cash Held</b>	<b>1 052</b>	<b>186</b>	<b>2 465</b>	<b>400</b>	<b>4 109</b>
<b>SURPLUS(+)/DEFICIT(-)</b>					
Net cash flows from operating activities and net cash flows from investments in non-financial assets	-1 177	141	4 314	298	2 976
Acquisitions of assets under finance leases and similar arrangements	78	—	1	-60	18
<b>Surplus(+)/Deficit(-)</b>	<b>-1 099</b>	<b>141</b>	<b>4 314</b>	<b>238</b>	<b>2 995</b>

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into this category are the public universities.

(b) The sums of individual levels of government may not agree with totals for all levels of government due to transfers between levels of government.

Note: Negative figures denote outflows.

Source: *Government Finance Statistics, Australia, 2001–02 (5512.0)*.

## 27.6 ALL AUSTRALIAN GOVERNMENTS, General government: Balance Sheet — 30 June 2002

	Commonwealth	Multi-jurisdictional(a)	State	Local	All levels of government(b)
	\$m	\$m	\$m	\$m	\$m
<b>Assets</b>					
Financial assets					
Cash and deposits	2 231	657	7 843	2 293	13 013
Advances paid	22 050	9	4 785	9	21 939
Investments, loans and placements	19 921	4 372	24 856	5 036	54 167
Other non-equity assets	15 057	2 945	11 613	1 950	29 462
Equity	47 327	75	122 357	655	170 414
<i>Total</i>	<i>106 585</i>	<i>8 058</i>	<i>171 454</i>	<i>9 943</i>	<i>288 995</i>
Non-financial assets					
Land and fixed assets	33 782	18 277	209 867	152 254	414 180
Other non-financial assets	1 858	148	2 324	1 014	5 341
<i>Total</i>	<i>35 640</i>	<i>18 426</i>	<i>212 191</i>	<i>153 268</i>	<i>419 520</i>
<i>Total</i>	<i>142 226</i>	<i>26 484</i>	<i>383 645</i>	<i>163 211</i>	<i>708 515</i>
<b>Liabilities</b>					
Deposits held	300	29	1 373	144	1 836
Advances received	—	16	3 839	30	—
Borrowing	78 913	552	29 325	5 281	113 022
Unfunded superannuation liability and other employee entitlements	88 415	3 940	61 067	1 608	155 031
Other provisions	2 967	3	6 590	125	9 685
Other non-equity liabilities	13 921	1 043	8 677	1 776	23 311
<i>Total</i>	<i>184 516</i>	<i>5 584</i>	<i>110 872</i>	<i>8 964</i>	<i>302 886</i>
<b>GFS Net Worth</b>	<b>-42 291</b>	<b>20 899</b>	<b>272 773</b>	<b>154 246</b>	<b>405 628</b>
Net debt(c)	35 012	-4 441	-2 947	-1 883	25 740
Net financial worth(d)	-77 931	2 474	60 582	978	-13 893

(a) The multi-jurisdictional sector contains units where jurisdiction is shared between two or more governments, or classifications of a unit to a jurisdiction is otherwise unclear. The main type of units currently falling into this category are the public universities.

(b) The sums of individual levels of government may not agree with total figures for all levels of government due to assets and liabilities held between levels of government. (c) Equals deposits held, advances received and borrowing less cash and deposits, advances paid and investments, loans and placements. (d) Equals total financial assets less total liabilities.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

## 27.7 STATE GOVERNMENTS, Total public sector: Operating Statement — 2001–02

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total(a)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
GFS Revenue	43 790	31 325	24 941	10 484	15 750	3 956	2 728	2 338	135 394
<i>less</i>									
GFS Expenses	41 365	28 935	25 812	10 600	15 464	3 747	2 743	2 206	131 044
<i>equals</i>									
<b>GFS Net Operating Balance</b>	<b>2 425</b>	<b>2 390</b>	<b>-871</b>	<b>-116</b>	<b>286</b>	<b>209</b>	<b>-15</b>	<b>132</b>	<b>4 350</b>
<i>less</i>									
Net acquisition of non-financial assets	2 309	1 432	903	-123	458	244	314	-8	5 442
<i>equals</i>									
<b>GFS Net Lending(+)/Borrowing(-)</b>	<b>116</b>	<b>959</b>	<b>-1 775</b>	<b>8</b>	<b>-172</b>	<b>-36</b>	<b>-330</b>	<b>140</b>	<b>-1 092</b>

(a) The sums of all individual state jurisdictions may not agree with total state figures, due to transfers between jurisdictions.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

**27.8 STATE GOVERNMENTS, Total public sector: Cash Flow Statement — 2001–02**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total(a)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>CASH FLOW STATEMENT</b>									
Cash receipts from operating activities	46 210	30 836	26 138	10 353	16 535	4 180	2 784	2 371	139 385
Cash payments for operating activities	-38 712	-26 060	-22 463	-9 781	-15 080	-3 564	-2 474	-1 955	-120 306
<i>Net cash flows from operating activities</i>	7 499	4 776	3 675	571	1 455	616	311	417	19 079
Net cash flows from investments in non-financial assets	-5 180	-2 642	-3 505	-426	-1 598	-574	-497	-157	-14 523
Net cash flows from investments in financial assets for policy purposes	537	521	-18	-24	16	-24	-227	52	1 207
Net cash flows from investments in financial assets for liquidity purposes	-3 736	-1 110	1 883	-1 937	-73	-108	186	-21	-3 874
Net cash flows from financing activities	2 404	-1 597	-1 218	-3 119	-314	123	125	-34	-6 010
<b>Net increase(+)/Decrease(-) in Cash Held</b>	<b>1 522</b>	<b>-52</b>	<b>816</b>	<b>-4 935</b>	<b>-514</b>	<b>33</b>	<b>-102</b>	<b>256</b>	<b>-4 122</b>
<b>SURPLUS(+)/DEFICIT(-)</b>									
<b>Surplus(+)/Deficit(-)</b>	<b>2 318</b>	<b>2 135</b>	<b>171</b>	<b>145</b>	<b>-143</b>	<b>42</b>	<b>-188</b>	<b>259</b>	<b>4 583</b>

(a) The sums of individual state jurisdictions may not agree with total state figures, due to transfers between jurisdictions.

Note: Negative figures denote outflows.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

**27.9 STATE GOVERNMENTS, Total public sector: Balance Sheet — 30 June 2002**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Total(b)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Assets</b>									
Financial assets	17 624	29 606	31 575	7 851	9 445	2 970	1 612	2 450	102 063
Non-financial assets	137 183	68 214	70 655	22 644	48 610	11 767	5 519	8 385	373 119
<i>Total</i>	<i>154 806</i>	<i>97 820</i>	<i>102 231</i>	<i>30 495</i>	<i>58 055</i>	<i>14 737</i>	<i>7 131</i>	<i>10 835</i>	<i>475 183</i>
<b>Liabilities</b>									
	56 407	48 982	44 137	15 932	22 039	7 882	4 955	3 026	202 399
<b>GFS Net Worth</b>	<b>98 399</b>	<b>48 838</b>	<b>58 093</b>	<b>14 564</b>	<b>36 010</b>	<b>6 855</b>	<b>2 178</b>	<b>7 808</b>	<b>272 778</b>
Net debt(c)	15 552	-8 786	-2 880	1 032	4 491	2 089	1 731	-985	12 244
Net financial worth(d)	-38 783	-19 376	-12 563	-8 081	-12 601	-4 912	-3 341	-576	-100 342

(a) The consolidation methodology applied by the ABS differs from that applied by ACT Treasury, resulting in slightly different balance sheet liability values and analytical balances. (b) The sums of individual state jurisdictions may not agree with total state figures, due to assets and liabilities held between jurisdictions. (c) Equals deposits held, advances received and borrowing less cash and deposits, advances paid and investments, loans and placements. (d) Equals total financial assets less total liabilities less shares and other contributed capital.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

**27.10 STATE GOVERNMENTS, General government: Operating Statement — 2001–02**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total(a)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>GFS Revenue</b>									
Taxation revenue	13 216	8 762	4 815	2 193	2 945	529	227	579	33 263
Current grants and subsidies	15 873	11 293	9 520	4 485	5 253	1 711	1 679	947	50 752
Sales of goods and services	2 699	3 078	1 837	902	905	326	80	270	9 980
Interest income(b)	282	318	-464	131	122	23	15	99	510
Other	3 370	2 059	3 149	906	1 810	278	287	340	12 197
<i>Total</i>	35 440	25 509	18 857	8 617	11 035	2 868	2 289	2 236	106 702
<i>less</i>									
<b>GFS Expenses</b>									
Gross operating expenses									
Depreciation	1 568	859	1 511	390	568	151	124	128	5 301
Employee expenses	13 847	9 820	8 800	3 830	4 759	1 203	927	877	44 063
Other operating expenses	9 773	7 854	3 540	2 245	2 735	688	578	603	27 922
<i>Total</i>	25 188	18 533	13 851	6 465	8 063	2 043	1 630	1 609	77 287
Nominal superannuation interest expenses									
	564	827	626	244	178	108	78	11	2 635
Other interest expenses									
	861	444	223	272	214	89	151	58	2 295
Other property expenses									
	—	—	—	—	—	—	—	—	—
Current transfers									
Grant expenses	3 626	2 360	3 283	1 114	1 425	295	268	314	12 675
Subsidy expenses	1 283	708	834	529	498	115	93	12	4 071
Other current transfers	565	67	112	2	203	55	15	104	1 122
Capital transfers									
Grants to local governments	204	43	218	12	129	2	4	—	613
Other capital transfers	1 660	880	602	76	128	6	69	19	3 441
<i>Total</i>	33 951	23 863	19 750	8 714	10 838	2 712	2 307	2 127	104 140
<i>equals</i>									
<b>GFS Net Operating Balance</b>	<b>1 489</b>	<b>1 646</b>	<b>-894</b>	<b>-97</b>	<b>197</b>	<b>155</b>	<b>-19</b>	<b>109</b>	<b>2 562</b>
<i>less</i>									
Net acquisition of non-financial assets									
Gross fixed capital formation	2 625	1 740	2 143	405	833	125	438	146	8 455
<i>less</i> Depreciation	1 568	859	1 511	390	568	151	124	128	5 301
<i>plus</i> Change in inventories	—	-18	-2	3	3	—	—	—	-15
<i>plus</i> Other transactions in non-financial assets	-40	41	-88	10	-43	-1	2	2	-117
<i>Total</i>	1 018	904	542	28	223	-27	316	20	3 022
<i>equals</i>									
<b>GFS Net Lending(+)/Borrowing(-)</b>	<b>471</b>	<b>742</b>	<b>-1 435</b>	<b>-124</b>	<b>-27</b>	<b>183</b>	<b>-334</b>	<b>89</b>	<b>-460</b>

(a) The sums of all individual state jurisdictions may not agree with total state figures, due to transfers between jurisdictions.

(b) Interest income in Qld reflects low investment earnings due to volatility and poor performance of domestic and international equity markets.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

**27.11 STATE GOVERNMENTS, General government: Cash Flow Statement — 2001-02**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total(a)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>CASH FLOW STATEMENT</b>									
Cash receipts from operating activities									
Taxes received	13 341	8 615	4 910	2 191	2 968	511	227	601	33 360
Receipts from sales of goods and services	2 637	2 948	1 959	707	891	400	80	296	9 826
Grants and subsidies received	16 762	11 870	10 417	4 681	5 531	1 785	1 894	1 006	53 910
Other receipts	3 664	1 677	2 004	948	2 116	215	111	394	11 111
<b>Total</b>	<b>36 403</b>	<b>25 110</b>	<b>19 290</b>	<b>8 527</b>	<b>11 506</b>	<b>2 911</b>	<b>2 312</b>	<b>2 297</b>	<b>108 209</b>
Cash payments for operating activities									
Payments for goods and services	-21 869	-17 087	-11 278	-6 104	-7 376	-2 013	-1 506	-1 303	-68 434
Grants and subsidies paid	-6 808	-3 933	-4 871	-1 740	-2 294	-465	-434	-376	-20 917
Interest paid	-842	-446	-237	-239	-220	-95	-150	-60	-2 288
Other payments	-1 878	-491	-486	-196	-855	-5	-15	-147	-4 074
<b>Total</b>	<b>-31 396</b>	<b>-21 958</b>	<b>-16 873</b>	<b>-8 278</b>	<b>-10 746</b>	<b>-2 578</b>	<b>-2 105</b>	<b>-1 886</b>	<b>-95 713</b>
<b>Net cash flows from operating activities</b>	<b>5 007</b>	<b>3 152</b>	<b>2 418</b>	<b>249</b>	<b>760</b>	<b>333</b>	<b>207</b>	<b>411</b>	<b>12 495</b>
Net cash flows from investments in non-financial assets									
Sales of non-financial assets	192	123	351	171	102	47	29	4	1 020
Purchases of new non-financial assets	-2 745	-1 888	-2 416	-470	-894	-164	-468	-152	-9 197
Purchases of secondhand non-financial assets	—	—	—	—	—	-5	—	—	-5
<b>Total</b>	<b>-2 552</b>	<b>-1 764</b>	<b>-2 066</b>	<b>-299</b>	<b>-792</b>	<b>-121</b>	<b>-439</b>	<b>-148</b>	<b>-8 182</b>
Net cash flows from investments in financial assets for policy purposes									
	756	36	430	70	-93	-16	—	23	1 205
Net cash flows from investments in financial assets for liquidity purposes									
	-575	-549	336	7	-11	—	-14	-22	-829
Net cash flows from financing activities									
Advances received (net)	-220	-1	—	-54	-13	-36	1	—	-323
Borrowing (net)	-1 821	-12	173	133	13	27	80	63	-1 320
Deposits received (net)	-5	56	—	-80	-92	-1	-8	—	-129
Other financing (net)	-5	-196	-176	—	-25	-1	3	-67	-452
<b>Total</b>	<b>-2 051</b>	<b>-153</b>	<b>-3</b>	<b>-1</b>	<b>-117</b>	<b>-11</b>	<b>76</b>	<b>-3</b>	<b>-2 225</b>
<b>Net Increase(+)/Decrease(-) in Cash Held</b>	<b>584</b>	<b>722</b>	<b>1 114</b>	<b>25</b>	<b>-253</b>	<b>185</b>	<b>-171</b>	<b>261</b>	<b>2 465</b>
<b>SURPLUS(+)/DEFICIT(-)</b>									
Net cash flows from operating activities and net cash flows from investments in non-financial assets									
	2 454	1 388	352	-50	-31	212	-232	263	4 314
Acquisitions of assets under finance leases and similar arrangements									
	—	—	2	—	—	—	-1	—	1
<b>Surplus(+)/Deficit(-)</b>	<b>2 454</b>	<b>1 388</b>	<b>354</b>	<b>-50</b>	<b>-31</b>	<b>212</b>	<b>-233</b>	<b>263</b>	<b>4 314</b>

(a) The sums of all individual state jurisdictions may not agree with total state figures, due to transfers between jurisdictions.

Note: Negative figures denote outflows.

Source: Government Finance Statistics, Australia, 2001-02 (5512.0).

**27.12 STATE GOVERNMENTS, General government: Balance Sheet — 30 June 2002**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Total(b)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Assets</b>									
Financial assets									
Cash and deposits	1 719	1 667	1 179	1 844	299	982	119	36	7 843
Advances paid	1 521	239	152	1 233	874	160	40	566	4 785
Investments, loans and placements	4 409	3 818	13 161	170	1 356	2	379	1 722	24 856
Other non-equity assets	4 314	1 312	4 319	326	737	327	122	220	11 613
Equity	48 337	26 928	12 804	10 297	15 867	3 877	1 459	2 788	122 357
Total	60 301	33 964	31 615	13 870	19 134	5 348	2 119	5 332	171 454
Non-financial assets									
Land and fixed assets	73 365	38 537	45 485	11 076	26 775	5 670	3 741	5 216	209 867
Other non-financial assets	952	1 016	—	71	11	—	—	274	2 324
Total	74 318	39 554	45 485	11 147	26 787	5 670	3 741	5 490	212 191
Total	134 618	73 517	77 099	25 017	45 921	11 019	5 861	10 821	383 645
<b>Liabilities</b>									
Deposits held	65	394	—	401	298	12	153	55	1 373
Advances received	1 826	3	9	790	593	323	4	290	3 839
Borrowing	10 265	6 356	3 451	3 359	2 111	1 561	1 761	621	29 325
Unfunded superannuation liability and other employee entitlements	15 719	15 929	12 332	5 055	6 364	2 149	1 688	1 831	61 067
Other provisions	5 182	308	1 090	—	—	—	10	—	6 590
Other non-equity liabilities	3 163	1 655	2 125	848	545	122	69	216	8 677
Total	36 219	24 645	19 007	10 453	9 912	4 167	3 684	3 014	110 872
<b>GFS Net Worth</b>	<b>98 399</b>	<b>48 873</b>	<b>58 092</b>	<b>14 564</b>	<b>36 009</b>	<b>6 852</b>	<b>2 176</b>	<b>7 808</b>	<b>272 773</b>
Net debt(c)	4 506	1 029	-11 031	1 303	472	751	1 379	-1 358	-2 947
Net financial worth(d)	24 081	9 319	12 608	3 417	9 223	1 181	-1 565	2 318	60 582

(a) The consolidation methodology applied by the ABS differs from that applied by ACT Treasury, resulting in slightly different balance sheet liability values and analytical balances. (b) The sums of all individual state jurisdictions may not agree with total state figures, due to assets and liabilities held between jurisdictions. (c) Equals deposits held, advances received and borrowing less cash and deposits, advances paid, and investments, loans and placements. (d) Equals total financial assets less total liabilities.

Source: *Government Finance Statistics, Australia, 2001-02 (5512.0)*.

### 27.13 LOCAL GOVERNMENTS, Total public sector: Operating Statement — 2001–02

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Total(b)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>GFS Revenue</b>									
Taxation revenue	2 260	1 640	1 329	589	707	175	48	..	6 749
Current grants and subsidies	537	585	486	147	280	69	50	..	2 154
Sales of goods and services	2 037	753	2 159	204	356	195	59	..	5 762
Interest income	187	44	76	13	39	10	4	..	372
Other	959	640	665	45	220	32	18	..	2 579
<i>Total</i>	5 980	3 662	4 714	998	1 602	481	179	..	17 617
<i>less</i>									
<b>GFS Expenses</b>									
Gross operating expenses									
Depreciation	1 141	663	1 048	248	382	131	54	..	3 667
Employee expenses	2 003	1 185	1 394	319	521	146	67	..	5 636
Other operating expenses	2 173	1 675	1 576	410	547	196	144	..	6 720
<i>Total</i>	5 317	3 523	4 018	977	1 450	474	265	..	16 023
Property expenses									
Other interest expenses	95	39	230	26	13	15	1	..	419
Income tax equivalent expenses	—	—	12	—	—	—	—	..	12
Current transfers									
Grant expenses	—	—	—	6	12	—	—	..	18
Tax expenses	7	—	16	—	5	—	—	..	28
Other current transfers	64	—	2	—	6	9	—	..	81
Capital transfers									
Grant expenses	—	—	16	—	—	—	2	..	17
Other capital transfers	—	—	9	—	—	—	—	..	9
<i>Total</i>	5 482	3 562	4 303	1 010	1 486	498	267	..	16 609
<i>equals</i>									
<b>GFS Net Operating Balance</b>	<b>498</b>	<b>100</b>	<b>411</b>	<b>-12</b>	<b>116</b>	<b>-16</b>	<b>-88</b>	<b>..</b>	<b>1 009</b>
<i>less</i>									
Net acquisition of non-financial assets									
Gross fixed capital formation	1 350	906	1 345	273	480	135	43	..	4 532
<i>less</i> Depreciation	1 141	663	1 048	248	382	131	54	..	3 667
<i>plus</i> Change in inventories	-4	—	-7	—	—	—	—	..	-10
<i>plus</i> Other transactions in non-financial assets	111	-13	31	4	-1	-2	—	..	130
<i>Total</i>	316	230	322	29	98	2	-11	..	985
<i>equals</i>									
<b>GFS Net Lending(+)/Borrowing(-)</b>	<b>182</b>	<b>-130</b>	<b>89</b>	<b>-41</b>	<b>18</b>	<b>-18</b>	<b>-77</b>	<b>..</b>	<b>23</b>

(a) The ACT has no separate local government. (b) The sums of local governments at the state level may not equal the total local figure, due to transfers between jurisdictions.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

## Cash Flow Statement

Table 27.14 summarises the cash results for 2001–02 for the total public sector for local governments.

## Balance Sheet

Table 27.15 summarises the Balance Sheet results as at 30 June 2002 for the total public sector for local governments.

**27.14 LOCAL GOVERNMENTS, Total public sector: Cash Flow Statement — 2001–02**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Total(b)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>CASH FLOW STATEMENT</b>									
<b>Cash receipts from operating activities</b>									
Taxes received	2 228	1 676	1 319	587	709	169	45	..	6 733
Receipts from sales of goods and services	2 100	753	2 019	236	371	218	91	..	5 788
Grants and subsidies received	652	632	820	203	357	87	117	..	2 866
Other receipts	851	403	559	12	156	44	5	..	2 030
<i>Total</i>	5 830	3 464	4 717	1 038	1 593	518	257	..	17 417
<b>Cash payments for operating activities</b>									
Payments for goods and services	-4 457	-2 799	-3 149	-742	-1 114	-339	-196	..	-12 795
Grants and subsidies paid	—	—	—	-9	-18	—	—	..	-27
Interest paid	-94	-40	-224	-27	-14	-16	-1	..	-415
Other payments	-71	-51	—	4	-6	-13	—	..	-137
<i>Total</i>	-4 622	-2 890	-3 374	-773	-1 152	-368	-197	..	-13 375
<i>Net cash flows from operating activities</i>	1 208	574	1 344	264	441	150	61	..	4 042
<b>Net cash flows from investments in non-financial assets</b>									
Sales of non-financial assets	300	106	78	44	56	12	2	..	598
Purchases of new non-financial assets	-1 442	-761	-1 203	-304	-495	-135	-43	..	-4 383
Purchases of secondhand non-financial assets	—	—	-1	—	-2	—	—	..	-4
<i>Total</i>	-1 142	-656	-1 125	-260	-441	-123	-41	..	-3 788
<b>Net cash flows from investments in financial assets for policy purposes</b>									
	1	—	—	-2	—	—	1	..	—
<b>Net cash flows from investments in financial assets for liquidity purposes</b>									
	-19	—	-23	—	-1	9	—	..	-33
<b>Net cash flows from financing activities</b>									
Advances received (net)	—	3	—	4	—	9	—	..	15
Borrowing (net)	-26	-15	-20	-16	54	4	-3	..	-20
Deposits received (net)	—	—	—	21	-1	—	—	..	21
Other financing (net)	232	94	-36	-8	-38	-57	-17	..	169
<i>Total</i>	206	82	-56	3	15	-44	-20	..	184
<b>Net Increase(+)/Decrease(-) in Cash Held</b>	<b>254</b>	<b>—</b>	<b>140</b>	<b>5</b>	<b>15</b>	<b>-8</b>	<b>—</b>	<b>..</b>	<b>405</b>
<b>SURPLUS(+)/DEFICIT(-)</b>									
<b>Net cash flows from operating activities and net cash flows from investments in non-financial assets</b>									
	66	-82	218	5	—	27	20	..	254
<b>Acquisitions of assets under finance leases and similar arrangements</b>									
	-59	—	—	-1	—	—	—	..	-60
<b>Surplus(+)/Deficit(-)</b>	<b>8</b>	<b>-82</b>	<b>218</b>	<b>4</b>	<b>—</b>	<b>27</b>	<b>20</b>	<b>..</b>	<b>194</b>

(a) The ACT has no separate local government. (b) The sums of local governments at the state level may not equal the total local figure, due to transfers between jurisdictions.

Note: Negative figures denote outflows.

Source: Government Finance Statistics, Australia, 2001–02 (5512.0).

**27.15 LOCAL GOVERNMENTS, Total public sector: Balance Sheet — 30 June 2002**

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT(a)	Total(b)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Assets</b>									
Financial assets									
Cash and deposits	232	513	1 245	18	207	43	57	..	2 315
Advances paid	—	7	—	—	—	4	—	..	11
Investments, loans and placements	3 660	503	265	33	443	120	48	..	5 073
Other non-equity assets	634	600	436	76	163	45	14	..	1 967
Equity	—	—	—	12	—	—	—	..	12
Total	4 525	1 623	1 946	138	813	212	119	..	9 377
Non-financial assets									
Land and fixed assets	63 747	31 090	33 914	8 481	10 744	4 251	887	..	153 115
Other non-financial assets	988	—	—	—	16	10	4	..	1 017
Total	64 735	31 090	33 914	8 481	10 759	4 261	890	..	154 132
Total	69 260	32 714	35 860	8 620	11 573	4 474	1 010	..	163 509
<b>Liabilities</b>									
Deposits held	—	62	—	79	—	3	—	..	144
Advances received	12	2	—	14	—	—	—	..	29
Borrowing	1 411	596	2 970	135	223	208	6	..	5 548
Unfunded superannuation liability and other employee entitlements	738	285	391	74	85	32	9	..	1 614
Other provisions	112	—	12	9	2	6	—	..	142
Other non-equity liabilities	691	405	339	102	177	40	34	..	1 788
Total	2 965	1 350	3 713	412	488	289	49	..	9 266
Shares and other contributed capital	1	—	—	—	—	-3	—	..	-2
<b>GFS Net Worth</b>	<b>66 294</b>	<b>31 363</b>	<b>32 148</b>	<b>8 207</b>	<b>11 085</b>	<b>4 188</b>	<b>961</b>	<b>..</b>	<b>154 246</b>
Net debt(c)	-2 468	-363	1 460	177	-428	44	-100	..	-1 677
Net financial worth(d)	1 559	273	-1 767	-274	325	-73	71	..	114

(a) The ACT has no separate local government. (b) The sums of local governments at the state level may not equal the total local figure, due to assets and liabilities held between jurisdictions. (c) Equals deposits held, advances received and borrowing less cash and deposits, advances paid, and investments, loans and placements. (d) Equals total financial assets less total liabilities less shares and other contributed capital.

Source: *Government Finance Statistics, Australia, 2001–02 (5512.0)*.

## Taxation revenue

Table 27.16 shows, for the general government sector, the amount of taxation revenue collected in Australia during 2001–02 by level of government and by type of tax. Total taxation revenue collected during the period was \$216,915m. Commonwealth Government taxation revenue totalled \$177,237m and accounted for 81.7% of total taxation revenue, while total state and territory, and local government taxation revenue totalled \$40,002m and accounted for 18.4% of total taxation revenue.

Income taxes continue to be the largest component of the Commonwealth Government's taxation revenue, accounting for 67.2% of the Commonwealth's total taxation revenue in 2001–02. Property taxes continue to be the largest component of state and territory, and local governments' taxation revenue, accounting for 48.0% of the consolidated governments' total taxation revenue in 2001–02.

**27.16 TAXATION REVENUE, General government: All levels of government — 2001–02**

Type of tax	Commonwealth \$m	State and local \$m	All levels of government(a) \$m
<b>Taxes on income</b>			
Income taxes levied on individuals	87 250	—	87 250
Income taxes levied on enterprises(b)	31 782	—	31 782
Income taxes levied on non-residents(c)	—	—	—
<i>Total</i>	<i>119 032</i>	<i>—</i>	<i>119 032</i>
<b>Employers' payroll taxes</b>			
General taxes (payroll tax)	—	9 665	9 415
Other employers' labour force taxes	3 831	—	3 760
<i>Total</i>	<i>3 831</i>	<i>9 665</i>	<i>13 175</i>
<b>Taxes on property</b>			
Taxes on immovable property	—	9 510	9 507
Taxes on financial and capital transactions	12	9 672	9 684
<i>Total</i>	<i>12</i>	<i>19 182</i>	<i>19 191</i>
<b>Taxes on provision of goods and services</b>			
General taxes (sales tax)	791	—	791
Goods and services tax (GST)	27 389	—	27 389
<b>Excise and levies</b>			
Crude oil and liquid petroleum gas (LPG)	12 793	—	12 793
Other excises	6 837	—	6 837
Agricultural production taxes	550	3	553
Levies on statutory corporations	80	2	82
<i>Total</i>	<i>20 260</i>	<i>5</i>	<i>20 265</i>
Taxes on international trade	5 214	—	5 214
Taxes on gambling	—	3 707	3 707
Taxes on insurance	—	2 836	2 836
<i>Total</i>	<i>53 654</i>	<i>6 548</i>	<i>60 202</i>
<b>Taxes on use of goods and performance of activities</b>			
Motor vehicle taxes	—	4 291	4 291
Franchise taxes	—	13	13
Other	708	303	1 010
<i>Total</i>	<i>708</i>	<i>4 607</i>	<i>5 314</i>
<b>Total taxes</b>	<b>177 237</b>	<b>40 002</b>	<b>216 915</b>

(a) The sum of individual levels of government may not agree with totals for all levels of government, due to intergovernmental taxes. (b) Amounts collected under petroleum resource rent taxes are included in income taxes levied on enterprises. (c) From 2001–02, withholding taxes on non-residents are no longer separately identifiable under PAYG and are now covered by Personal income taxes.

Source: *Taxation Revenue, Australia, 2001–02 (5506.0)*.

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### **Web sites**

Australian Accounting Standards Board, <<http://www.aasb.com.au>>

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Australian Taxation Office, <<http://www.ato.gov.au>>, Taxation Statistics can be accessed by selecting the 'Booklets & publications' link

## PRICES

Prices are a key factor in the operation of an economy. Price indexes, which provide summary measures of the movements in various categories of prices, are used extensively to analyse and monitor price behaviour, and to adjust government payments such as pensions.

This chapter provides an outline of the consumer price index, the major producer price indexes and the international trade price indexes, their history, and their underlying concepts and methodology. More detailed information is contained in the source publications referred to throughout the chapter and in the Bibliography.

Another major price index produced by the Australian Bureau of Statistics (ABS), the wage cost index, is described in *Chapter 6, Labour*, while established house and project home price indexes are described in *Chapter 8, Housing*.

The chapter contains an article *Price impacts on the living costs of selected Australian household types*.

## Consumer price index (CPI)

The description of the CPI commonly adopted by users is in terms of its perceived uses; hence the frequent references to the CPI as a measure of inflation, a measure of changes in purchasing power, or a measure of changes in the cost of living. In practice, the CPI is a measure of changes, over time, in the prices of a fixed basket of goods and services acquired by households in the eight capital cities in Australia. As such, the CPI has been designed as a general measure of price inflation for the household sector in Australia.

The simplest way of thinking about the CPI is to imagine a basket of goods and services of the kind acquired by Australian households. As prices vary, the total cost of this basket will also vary. The CPI is simply a measure of the changes in the cost of this basket as the prices of items in it change.

The price of the CPI basket in the reference base period is assigned a value of 100.0 and the prices in other periods are expressed as percentages of the price in the base period. For example, if the price of the basket had increased by 35% since the base year, then the index would read 135.0. Similarly, if the price had fallen by 5% since the base year, the index would stand at 95.0.

For practical reasons, the CPI basket cannot include every item bought by households, but it does include all the important kinds of items. It is not necessary to include every item that people buy since many related items are subject to similar price changes. The idea is to select representative items so that the index reflects price changes for a much wider range of goods and services than is actually priced.

From the September quarter 2000 onwards, the total basket is divided into the following 11 major commodity groups: food; alcohol and tobacco; clothing and footwear; housing; household furnishings, supplies and services; health; transportation; communication; recreation; education; and miscellaneous. These groups are in turn divided into 34 subgroups, and the subgroups into 89 expenditure classes.

In addition to the aggregate 'All groups' index, indexes are also compiled and published for each of the groups, subgroups and expenditure classes for each state capital city, Darwin and Canberra. National indexes are constructed as the weighted average of the indexes compiled for each of the eight capital cities.

The 14th Series CPI is the latest of a number of consumer/retail price indexes that have been constructed for various purposes by the ABS. The history of retail price indexes in Australia is published in *Year Book Australia 1995*.

## Index population

The CPI measures price changes relating to the spending pattern of metropolitan private households. This group is termed the CPI population group. 'Metropolitan' is defined as the state capital cities, together with Darwin and Canberra.

This population group differs from that applying to CPIs calculated and published prior to the September quarter 1998. For more information see the article *Outcomes of the 13th Series Australian Consumer Price Index Review* in *Year Book Australia 1999*.

## Conceptual basis

The CPI is a quarterly measure of the change in average price levels. It provides a method of comparing the average price level for a quarter with the average price level of other periods such as the reference base year, or other quarters. Changes in the average price levels between periods can be calculated from their respective index levels.

The CPI aims to measure only pure price changes. In other words, it is concerned with isolating and measuring only that element of price change which is not caused by any change to either the quantity or the quality of the goods or services concerned (i.e. it aims to measure, each quarter, the change in the cost of acquiring an identical basket of goods and services). This involves evaluating any changes in the quality of goods and services included in the index and removing the effects of such changes from the prices used to construct the index.

The CPI measures changes in the prices actually paid by consumers for the goods and services they buy. It is not concerned with nominal, recommended or list prices (unless they are the prices that consumers actually pay).

The CPI basket includes goods and services ranging from steak to motor cars and from dental fillings to restaurant meals. The items are chosen not only because they represent the spending habits of the CPI population group, but also because the items are those for which the prices can be associated with identifiable and specific commodities and services. While government taxes and charges that are associated with the use

of specific goods and services (such as excise and customs duties, goods and services taxes, local government rates, etc.) are included, income taxes and the income-related Medicare levy are excluded because they cannot be clearly associated with the purchase or use of a specific quantity of any good or service.

Items are not excluded from the CPI basket on the basis of moral or social judgements. For example, some people may regard the use of tobacco and alcohol as socially undesirable, but these commodities are included in the CPI basket because they are significant items of household expenditure and their prices can be accurately measured. However, to assist in understanding the effect that major item groups have on the CPI, the ABS publishes a range of supplementary indexes which exclude, in turn, each of the 11 major commodity groups. These supplementary indexes can also be used in their own right for evaluating price changes or for indexation purposes.

### **Periodic reviews of the CPI**

Like any other long-standing and important statistical series, the CPI is reviewed from time to time to ensure that it continues to be relevant to current conditions. Over time, household spending habits change, as does the range of available goods and services. The CPI needs to be updated to take account of these changes. Regular reviews also provide an opportunity to reassess the scope and coverage of the index and other methodological issues.

The CPI was first compiled in 1960, with index numbers backcast to 1948. Since its inception in its current form in 1960, reviews of the CPI have usually been carried out at about five-yearly intervals. Following each review, which involves revising the list of items and their weights, the new series are linked to the old to form continuous series. This linking is carried out in such a way that the resulting continuous series reflect only price changes and not differences in the composition of the old and new baskets.

The current (14th Series) CPI reflects expenditure patterns derived mainly from the 1998–99 Household Expenditure Survey (HES) and has a reference base of 1989–90. It was introduced in the September quarter 2000.

In addition to revising weights to reflect new expenditure patterns, the 14th Series CPI introduced a new utility-based commodity classification to better address possible consumer

substitution between commodities in response to relative price changes arising from the introduction of The New Tax System (July 2000).

### **Weighting pattern**

The composition of the CPI basket is based on the pattern of household expenditure in the 'weighting base period', which is 1998–99 for the 14th Series CPI. Measures of expenditure are obtained primarily from the ABS HES. The HES data, modified for known instances of under-reporting (the most notable being for alcohol and tobacco), are then used to derive a weight for each of the 89 expenditure classes. The weights for the 14th Series groups and subgroups based on June quarter 2000 prices are shown in table 28.1.

### **Price collection**

Since the CPI is designed to measure the impact of changing prices on metropolitan private households, information about prices is collected in the kinds of retail outlets or other places where these households normally purchase goods and services. Prices are collected from many sources, including supermarkets, department stores, footwear stores, restaurants, motor vehicle dealers and service stations, dental surgeries, hotels and clubs, schools, hairdressers, telephone carriers, travel agents and airlines, bus operators, electricians and plumbers. Items like rail fares, electricity, gas and water and sewerage charges, and property rates and charges, are collected from the authorities concerned. Information on rents is obtained from property management companies and from government housing commissions. In total, around 100,000 separate price quotations are collected each quarter.

The collection of prices in each capital city is carried out by trained ABS field staff.

The prices used in the CPI are those that any member of the public would have to pay to purchase the specified good or service, including any taxes, excise and customs duties, etc. relating to goods and services. Sale prices, discount prices and 'specials' are reflected in the CPI so long as the items concerned are of normal quality (i.e. not damaged or shop-soiled), and are offered for sale in reasonable quantities. To ensure that the price movements reflect the buying experience of the bulk of the metropolitan population, the brands and the varieties of the items priced are generally those which sell in greatest volume.

**28.1 CONSUMER PRICE INDEX, Weighted average of capital cities(a)(b) — 14th Series**

Groups and subgroups	Weight in CPI basket
<b>Food</b>	
Dairy and related products	1.51
Bread and cereal products	2.20
Meat and seafoods	2.62
Fruit and vegetables	2.30
Non-alcoholic drinks and snack food	2.48
Meals out and take away foods	4.93
Other food	1.69
<i>Total</i>	<b>17.72</b>
<b>Alcohol and tobacco</b>	
Alcoholic drinks	5.14
Tobacco	2.27
<i>Total</i>	<b>7.41</b>
<b>Clothing and footwear</b>	
Men's clothing	0.98
Women's clothing	1.80
Children's and infants' clothing	0.47
Footwear	0.83
Clothing accessories, supplies & services	1.10
<i>Total</i>	<b>5.19</b>
<b>Housing</b>	
Rents	5.60
Utilities	3.23
Other housing	10.91
<i>Total</i>	<b>19.75</b>
<b>Household furnishings, supplies and services</b>	
Furniture and furnishings	3.58
Household appliances, utensils and tools	1.98
Household supplies	1.91
Household services	0.62
<i>Total</i>	<b>8.09</b>
<b>Health</b>	
Health services	3.55
Pharmaceuticals	1.14
<i>Total</i>	<b>4.69</b>
<b>Transportation</b>	
Private motoring	14.40
Urban transport fares	0.85
<i>Total</i>	<b>15.25</b>
<b>Communication</b>	
Communication	2.88
<i>Total</i>	<b>2.88</b>
<b>Recreation</b>	
Audio, visual and computing	2.70
Books, newspapers and magazines	1.08
Sport and other recreation	4.16
Holiday travel and accommodation	4.35
<i>Total</i>	<b>12.29</b>
<b>Education</b>	
Education	2.69
<i>Total</i>	<b>2.69</b>
<b>Miscellaneous</b>	
Insurance services	1.46
Personal care	2.14
Childcare	0.44
<i>Total</i>	<b>4.04</b>
<b>All groups</b>	<b>100.00</b>

(a) Percentages may not add due to rounding. (b) Weights shown are those applicable from the June quarter 2000 onwards.

Source: *Australian Consumer Price Index: Concepts, Sources and Methods* (6461.0).

**Price movements by city**

Table 28.2 presents All groups index 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 do not measure differences in price levels between cities. For example, the index for Adelaide in 2002–03 of 142.7, compared with the corresponding index for Perth of 136.8, does not mean that prices in Adelaide are higher than those in Perth. It simply means that, since the reference base period (1989–90), prices in Adelaide have increased by a greater percentage than those in Perth (42.7% compared with 36.8%).

**Price movements by broad commodity group**

Table 28.3 presents, for the weighted average of the eight capital cities, index numbers for each of the 11 major commodity groups of the 14th Series CPI and for All groups, together with percentage changes.

**Long-term price series**

Although the CPI has only been compiled from 1948, an approximate long-term measure of retail price change has been constructed by linking together other selected retail price index series (table 28.4). The index numbers are expressed on a reference base 1945 = 100.0. The successive series are:

- from 1850 to 1901, Sydney retail price index
- from 1901 to 1914, the A series retail price index
- from 1914 to 1946–47, the C series retail price index
- from 1946–47 to 1948–49, a combination of the C series index (excluding rent) and the housing group of the CPI
- from 1948–49 onwards, the CPI.

For more information about these series see *Year Book Australia 1995*.

## 28.2 CONSUMER PRICE INDEX, All groups index numbers(a)(b)

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Darwin	Canberra	Weighted average of eight capital cities
INDEX NUMBER(c)									
1997-98	120.5	119.8	121.6	121.6	118.0	121.3	121.3	120.4	<b>120.3</b>
1998-99	122.5	120.9	122.9	123.2	120.1	122.5	122.4	121.5	<b>121.8</b>
1999-2000	125.4	124.1	125.0	126.3	122.9	124.8	124.2	124.2	<b>124.7</b>
2000-01(d)	133.2	131.6	132.4	133.5	129.6	132.0	130.9	131.9	<b>132.2</b>
2001-02	137.2	135.3	136.3	137.2	133.1	134.7	133.7	135.2	<b>136.0</b>
2002-03	141.1	139.7	140.7	142.7	136.8	139.1	136.8	139.7	<b>140.2</b>
CHANGE FROM PREVIOUS YEAR (%)									
1997-98	0.1	-0.1	0.5	-0.6	-0.3	-0.1	-0.2	-0.7	—
1998-99	1.7	0.9	1.1	1.3	1.8	1.0	0.9	0.9	<b>1.2</b>
1999-2000	2.4	2.6	1.7	2.5	2.3	1.9	1.5	2.2	<b>2.4</b>
2000-01(d)	6.2	6.0	5.9	5.7	5.5	5.8	5.4	6.2	<b>6.0</b>
2001-02	3.0	2.8	2.9	2.8	2.7	2.0	2.1	2.5	<b>2.9</b>
2002-03	2.8	3.3	3.2	4.0	2.8	3.3	2.3	3.3	<b>3.1</b>

(a) Reference base year is 1989-90 = 100.0. (b) The separate city indexes measure price movements within each city individually. They do not compare price levels between cities. (c) Index numbers for financial years are calculated as the simple arithmetic averages of the quarterly index numbers. (d) The 2000-01 data were affected by the introduction of The New Tax System, in particular, the introduction of the Goods and Services Tax (GST) from 1 July 2000.

Source: *Consumer Price Index, Australia (6401.0)*.

## 28.3 CONSUMER PRICE INDEX, Group index numbers — Weighted average of capital cities(a)

	Food	Alcohol and tobacco	Clothing and footwear	Housing	Household furnishings, supplies and services	Health	Transportation	Communication	Recreation	Education	Miscellaneous	All groups
INDEX NUMBER(b)												
1997-98	121.8	164.6	107.4	94.5	113.8	165.4	123.5	106.6	117.8	165.6	138.5	120.3
1998-99	126.5	168.7	106.7	95.8	113.7	163.4	122.1	102.9	119.4	174.1	143.5	121.8
1999-2000	129.2	175.2	105.5	99.9	113.3	158.7	128.9	97.8	120.4	182.4	153.2	124.7
2000-01(c)	135.6	194.7	112.5	107.9	117.3	164.3	137.0	104.7	124.6	191.4	166.0	132.2
2001-02	142.7	203.1	112.4	111.1	119.7	169.9	137.3	105.2	128.6	200.0	171.8	136.0
2002-03	147.9	208.9	113.3	115.1	121.0	181.5	140.6	108.5	131.9	210.0	178.6	140.2
CHANGE FROM PREVIOUS YEAR (%)												
1997-98	1.8	2.0	0.1	-7.0	0.3	3.6	-0.6	0.1	2.4	6.2	3.8	—
1998-99	3.9	2.5	-0.7	1.4	-0.1	-1.2	-1.1	-3.5	1.4	5.1	3.6	1.2
1999-2000	2.1	3.9	-1.1	4.3	-0.4	-2.9	5.6	-5.0	0.8	4.8	6.8	2.4
2000-01(c)	5.0	11.1	6.6	8.0	3.5	3.5	6.3	7.1	3.5	4.9	8.4	6.0
2001-02	5.2	4.3	-0.1	3.0	2.0	3.4	0.2	0.5	3.2	4.5	3.5	2.9
2002-03	3.6	2.9	0.8	3.6	1.1	6.8	2.4	3.1	2.6	5.0	4.0	3.1

(a) Reference base year is 1989-90 = 100.0. (b) Index numbers for financial years are calculated as the simple arithmetic averages of the quarterly index numbers. (c) The 2000-01 data were affected by the introduction of The New Tax System, in particular, the introduction of the Goods and Services Tax (GST) from 1 July 2000.

Source: *Consumer Price Index, Australia (6401.0)*.

## 28.4 RETAIL PRICE INDEX NUMBERS(a)(b)

Year	Index no.	Year	Index no.	Year	Index no.	Year	Index no.	Year	Index no.	Year	Index no.
1850	53	1876	51	1902	50	1928	89	1954	206	1980	844
1851	56	1877	53	1903	49	1929	91	1955	211	1981	926
1852	56	1878	51	1904	46	1930	87	1956	224	1982	1 028
1853	69	1879	45	1905	48	1931	78	1957	229	1983	1 132
1854	89	1880	45	1906	48	1932	74	1958	233	1984	1 177
1855	103	1881	46	1907	48	1933	71	1959	237	1985	1 257
1856	78	1882	56	1908	51	1934	73	1960	245	1986	1 370
1857	82	1883	55	1909	51	1935	74	1961	252	1987	1 487
1858	86	1884	52	1910	52	1936	75	1962	251	1988	1 594
1859	73	1885	53	1911	53	1937	78	1963	252	1989	1 714
1860	72	1886	56	1912	59	1938	80	1964	258	1990	1 839
1861	71	1887	52	1913	59	1939	82	1965	268	1991	1 898
1862	65	1888	52	1914	61	1940	85	1966	276	1992	1 917
1863	58	1889	51	1915	70	1941	89	1967	286	1993	1 952
1864	60	1890	51	1916	71	1942	97	1968	293	1994	1 989
1865	64	1891	50	1917	75	1943	101	1969	302	1995	2 082
1866	60	1892	49	1918	80	1944	100	1970	313	1996	2 136
1867	50	1893	48	1919	91	1945	100	1971	332	1997	2 141
1868	54	1894	42	1920	103	1946	102	1972	352	1998	2 159
1869	46	1895	42	1921	90	1947	106	1973	385	1999	2 191
1870	48	1896	42	1922	87	1948	117	1974	443	2000	2 289
1871	47	1897	42	1923	89	1949	128	1975	510	2001	2 389
1872	43	1898	41	1924	88	1950	140	1976	579	2002	2 462
1873	47	1899	45	1925	88	1951	167	1977	650		
1874	52	1900	43	1926	90	1952	196	1978	702		
1875	53	1901	47	1927	89	1953	205	1979	766		

(a) Reference base year is 1945 = 100.0. (b) The index numbers relate to Sydney from 1850 to 1900; from 1901 to 1980 they 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: ABS data available on request, *Consumer Price Index*.

## International comparisons

In 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

Fourteenth International Conference of Labour Statisticians (1987) adopted a Resolution which called for countries to 'provide for dissemination at the international level of an index which excludes shelter, in addition to the all items index'.

Table 28.5 presents indexes for selected countries on a basis consistent with the resolution and broadly comparable with the Australian series 'All groups excluding Housing'.

**28.5 CONSUMER PRICE INDEX, International comparisons(a)(b)**

	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
INDEX NUMBER						
<b>Australia(c)</b>	<b>125.4</b>	<b>126.9</b>	<b>129.4</b>	<b>136.4</b>	<b>140.4</b>	<b>144.5</b>
New Zealand	114.9	116.9	118.7	123.5	127.0	129.5
Hong Kong (SAR of China)	173.9	172.0	166.6	164.8	162.5	159.2
Indonesia	232.7	368.3	367.1	402.6	458.3	495.8
Japan	112.4	112.4	111.6	111.0	107.7	106.4
Republic of Korea (South)	162.1	169.0	172.1	179.2	185.0	190.9
Singapore	119.4	118.5	120.7	123.0	122.7	123.2
Taiwan	127.2	128.2	129.3	130.9	130.6	130.5
Canada	120.6	122.0	125.0	128.1	130.3	135.2
United States of America	125.8	127.2	130.9	135.3	136.4	138.9
Germany	121.0	121.5	122.2	123.7	126.0	127.4
United Kingdom	134.6	137.2	139.3	141.4	143.5	145.8
CHANGE FROM PREVIOUS YEAR (%)						
<b>Australia(c)</b>	<b>1.2</b>	<b>1.2</b>	<b>2.0</b>	<b>5.4</b>	<b>2.9</b>	<b>2.9</b>
New Zealand	1.1	1.7	1.5	4.0	2.8	2.0
Hong Kong (SAR of China)	3.8	-1.1	-3.1	-1.1	-1.4	-2.0
Indonesia	33.7	58.3	-0.3	9.7	13.8	8.2
Japan	3.9	—	-0.7	-0.5	-3.0	-1.2
Republic of Korea (South)	7.1	4.3	1.8	4.1	3.2	3.2
Singapore	1.2	-0.8	1.9	1.9	-0.2	0.4
Taiwan	1.2	0.8	0.9	1.2	-0.2	-0.1
Canada	1.5	1.2	2.5	2.5	1.7	3.8
United States of America	1.2	1.1	2.9	3.4	0.8	1.8
Germany	1.8	0.4	0.6	1.2	1.9	1.1
United Kingdom	2.4	1.9	1.5	1.5	1.5	1.6

(a) Reference base year is 1989-90 = 100.0. (b) All groups excluding housing. (c) The 2000-01 data for Australia were affected by the introduction of The New Tax System, in particular, the introduction of the Goods and Services Tax (GST) from 1 July 2000.

Source: *Consumer Price Index, Australia (6401.0)*.

## Price impacts on the living costs of selected Australian household types

During the course of the last consumer price index (CPI) review in 1997, it became clear that the principal requirement of the CPI had moved away from an input to wage and salary determination processes to a general measure of price inflation. Accordingly, commencing with the September quarter 1998, the CPI has been designed specifically to measure price inflation for the household sector as a whole. During the review consultations leading up to the decision to alter the design objective of the CPI, various users argued that there was a need for analytical indexes specifically designed to measure changes in living costs for a range of population subgroups.

Using the principal source of household income to categorise households, the four household types for which these indexes have been constructed are:

- Employee households (i.e. those households whose principal source of income is from wages and salaries)
- Age pensioner households (i.e. those households whose principal source of income is the age pension or veterans' affairs pension)
- Other government transfer recipient households (i.e. those households whose principal source of income is a government pension or benefit other than the age pension or veterans' affairs pension)
- Self-funded retiree households (i.e. those households whose principal source of income is superannuation or property income and where the Household Expenditure Survey (HES) defined reference person is 'retired' (not in the labour force and over 55 years of age)).

The indexes have been constructed to cover the period from June quarter 1998 up to and including the June quarter 2003.

The estimated number of households in each of these household types and their relative significance based on the 1998–99 HES is shown in table 28.6.

### 28.6 POPULATION SUBGROUPS

Household type	Households	Share of total
	'000	%
Employee	4 042.0	56.7
Age pensioner	1 035.4	14.5
Other government transfer recipient	958.1	13.5
Self-funded retiree	361.1	5.1
Other households(a)	726.3	10.2
<b>Total</b>	<b>7 122.8</b>	<b>100.0</b>

(a) Includes self employed, income indeterminate and parent supported students.

Source: ABS data available on request, Household Expenditure Survey, 1998–99.

These indexes represent the conceptually preferred measures for assessing the impact of changes in prices on the disposable incomes of households. In other words, these indexes are particularly suited for assessing whether or not the disposable incomes of households have kept pace with price changes. The CPI, on the other hand, is designed specifically to measure price inflation for the household sector as a whole and, as such, is not the conceptually ideal measure for assessing the impact of price changes on the disposable incomes of households.

### Background and methodology

The differences between indexes designed to measure price inflation and indexes designed to measure changes in living costs lie only in the item coverage. The items included in the living cost indexes are determined by reference to all the amounts actually paid by households to gain access to consumer goods and services, while the item coverage of inflation indexes is defined as all those goods and services actually acquired by households in monetary transactions.

The most notable differences are that living cost indexes include interest charges but do not include house purchases, while inflation indexes do not include interest charges but do include house purchases. Insurance (other than health insurance) is also treated differently in the living cost indexes. The weight for insurance in the CPI relates to the net value of the service provided by the insurance company (the amount of

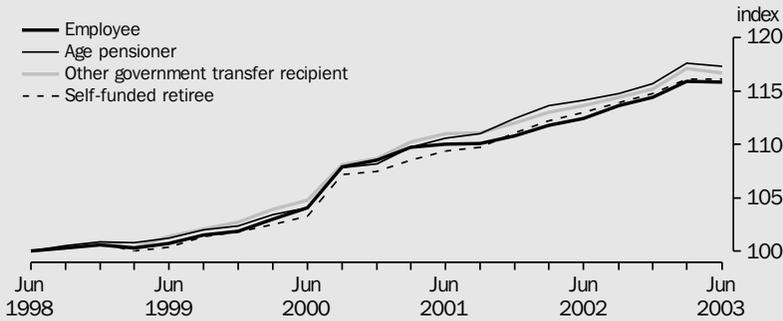
premiums paid by households less the amounts reimbursed by way of claims). In the living cost indexes, the weight relates to the gross value of insurance premiums paid by households.

For more detail on the methodology used to construct these indexes, see the article *Analytical indexes measuring the price impacts on the living costs of selected Australian household types* in *Year Book Australia 2002*.

## Results

The index series and quarterly percentage changes for the various household types from June quarter 1998 to June quarter 2003 are shown in graphs 28.7 and 28.8 respectively. The average annual indexes and percentage changes are shown in table 28.9.

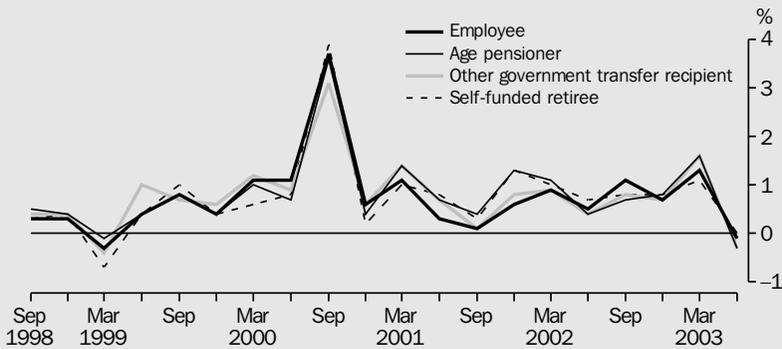
**28.7 INDEX NUMBER(a), By household type**



(a) Reference base is June quarter 1998 = 100.0.

Source: ABS data available on request, derived from selected CPI expenditure weights and price movements.

**28.8 INDEX NUMBER CHANGE FROM PREVIOUS QUARTER, By household type**



Source: ABS data available on request, derived from selected CPI expenditure weights and price movements.

## 28.9 POPULATION SUBGROUP INDEXES AND PERCENTAGE CHANGES(a)

	Employee	Age pensioner	Other government transfer recipient	Self-funded retiree	CPI(b)(c)
INDEX NUMBER(c)					
1998–99	100.5	100.9	100.9	100.4	100.7
1999–2000	102.6	103.0	103.4	102.2	103.1
2000–01(d)	109.0	109.1	109.5	108.1	109.3
2001–02	111.3	112.7	112.4	111.5	112.4
2002–03	114.9	116.3	115.9	115.2	115.9
CHANGE FROM PREVIOUS YEAR (%)					
1998–99	n.a.	n.a.	n.a.	n.a.	1.2
1999–2000	2.1	2.1	2.5	1.8	2.4
2000–01(d)	6.2	5.9	5.9	5.8	6.0
2001–02	2.1	3.3	2.6	3.1	2.9
2002–03	3.2	3.2	3.1	3.3	3.1

(a) Reference base is June quarter 1998 = 100.0. (b) The CPI has been re-referenced from 1989–90 = 100.0 to June quarter 1998 = 100.0 for ease of comparison with the population subgroup indexes. (c) The CPI is designed to measure price inflation for the household sector and not changes in living costs. (d) The 2000–01 data were affected by the introduction of The New Tax System, in particular, the introduction of the Goods and Services Tax (GST) from 1 July 2000.

Source: ABS data available on request, derived from selected CPI expenditure weights and price movements.

Between 2001–02 and 2002–03, changes in living costs were similar across the population subgroups ranging from a low of 3.1% for other government transfer recipient households to a high of 3.3% for self-funded retiree households. This contrasts with the range of changes between 2000–01 and 2001–02 when employee households showed the lowest increase (2.1%) and age pensioner households showed the highest increase (3.3%).

Between 1998–99 and 2002–03 the increases in the population subgroup indexes ranged from 14.3% for employee households to 15.3% for age pensioner households. The increase in the CPI over the same period was 15.1%.

### Conclusions

These analytical indexes have been designed specifically to answer the question:

By how much would after-tax money incomes need to change to allow households to purchase the same quantity of consumer goods and services as purchased in the base period?

The key issues these indexes can address are whether there are significant differences in the living cost experiences among household types and whether the CPI is an adequate proxy for changes in living costs.

In previous studies it was concluded that changes in living costs had been broadly similar across the different household types. The extension of the analysis to June quarter 2003 is generally consistent with those earlier conclusions, although perceptions as to what are significant differences may vary between analysts. Further, it could be argued that the CPI provides a reasonable estimate of changes in living costs for each of the selected household types over this period.

In considering these results it is important to recognise that these indexes have been constructed to reflect the experiences of population groups as a whole, and they may not reflect the experiences of any individual household. In this regard it is particularly important to note that no such index can be expected to reflect the changes in living costs experienced by households as a direct consequence of their moving through the life cycle (e.g. as a result of family formation and ageing). However, it would be reasonable to say that these indexes do provide reliable estimates of the change in living costs of households at an equivalent point in the life cycle during each period.

## Producer price indexes

The producer price indexes measure changes in the prices received, or paid, by producers of commodities and providers of services. In Australia they generally relate to prices for goods and services as they affect businesses, for example, the price of goods used as input to or output from the manufacturing sector, the price of materials used as input to the building industry and, more recently, the price of services provided by the property and business services, and transport (freight) and storage industries. This contrasts with the CPI which measures changes in the retail prices paid by consumers, as explained earlier in this chapter.

## Stage of production producer price indexes

These indexes are compiled using the 'stage of production' concept. Under this concept, flows of commodities are categorised according to their economic destination on a sequential basis along the production chain. The basis for the categorisation is the 1996–97 Australian input-output tables. The principal categorisation is between final commodities (i.e. commodities destined for final consumption, capital formation or export) and those commodities that are going to be processed further (referred to as 'non-final' commodities).

This initial breakdown of the commodity flows into final and non-final represents a useful economic dissection of producers' transactions. However, the non-final commodities can flow into the production of either final or other non-final commodities. Therefore, to aid analysis, the non-final commodity flows have been divided on a sequential basis between stage 1 (or preliminary) commodities and stage 2 (or intermediate) commodities. 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) commodities are used in the production of intermediate (stage 2) commodities which, in turn, flow into the production of final (stage 3) commodities.

The framework allows for analyses of price change as commodities flow through production processes. Price changes for earlier stages of production may be indicators of possible future price changes for later stages.

## Market transactions approach

The ABS has adopted a market transactions approach in disaggregating commodity supply into the various production stages. Under this approach, the individual transactions in a given commodity are assigned to the relevant stage, based on identification of the market(s) in which that commodity is transacted, which in turn is determined by the usage pattern of that commodity. A particular 'commodity', 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 input-output tables.

## Index coverage

In concept, the scope of the stage of production indexes is economy-wide, relating to the 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 output of the accommodation, transport (freight) and storage, and property and business services sectors. Similarly, coverage of the construction sector 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 progressively extended as additional service and construction industry collections are established. Table 28.10 shows stage of production producer price indexes from 1998–99 to 2002–03.

## 28.10 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
1998–99	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1999–2000	104.1	107.1	104.5	103.4	104.4	103.6	104.3	95.7	102.6
2000–01	110.3	126.1	112.4	108.9	119.7	110.3	107.7	104.0	107.0
2001–02	111.8	120.3	112.9	111.3	115.9	111.9	110.0	103.7	108.8
2002–03	114.3	117.4	114.6	113.6	112.1	113.3	113.7	97.5	110.5

(a) Reference base year is 1989–90 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

## Manufacturing price indexes

### Price indexes of articles produced by manufacturing industries

These indexes measure movements in the prices of articles produced by establishments classified to the Manufacturing Division of the Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 edition.

The indexes are constructed on a net sector basis. This approach means that the 'all manufacturing industry' index represents price movements of goods which are produced by establishments in the Manufacturing Division, for sale or transfer to establishments outside the Manufacturing Division, for export, or for use as capital equipment. Articles which are sold or transferred to other establishments within the manufacturing industry, for further processing or for use as inputs, are excluded.

The composition and weighting pattern of these indexes are based on the value of production in 1993–94 and they have a reference base of 1989–90 = 100.0.

The indexes were first published in June 1976 on a reference base of 1968–69 = 100.0, with indexes compiled retrospectively to July 1968. The composition and weighting patterns of the indexes were based on the value of production in 1971–72.

Table 28.11 sets out a summary index for articles produced. More detailed index numbers are contained in *Chapter 18, Manufacturing*.

## 28.11 PRICE INDEXES OF ARTICLES PRODUCED BY MANUFACTURING INDUSTRIES(a)(b)

Manufacturing Division index	
1997–98	115.9
1998–99	115.6
1999–2000	120.6
2000–01	128.5
2001–02	128.8
2002–03	130.3

(a) Reference base year is 1989–90 = 100.0. (b) For a full description of Division C, Manufacturing and the subdivisions within the Manufacturing Division, see the 'Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993' (1292.0).

Source: *Producer Price Indexes, Australia (6427.0)*.

### Price indexes of materials used in manufacturing industries

These indexes measure changes in the prices of materials used by establishments classified to the Manufacturing Division of ANZSIC, 1993 edition.

Indexes are published for materials used in the manufacturing industry as a whole (split into imported and domestic materials) and for each of 17 separate manufacturing sectors (defined in terms of ANZSIC subdivisions or ANZSIC groups). Indexes are also published for materials sourced domestically and those that are imported.

The indexes are compiled and published on a net sector basis. That is, each index includes only those materials which are used in the defined sector of Australian manufacturing industry and which have been produced by establishments outside that sector.

The current index series were introduced in July 1996 on a reference base of 1989–90 = 100.0. The items included in the indexes were allocated weights in accordance with the estimated value of manufacturing usage in 1989–90.

The indexes were first compiled on a reference base of 1968–69 = 100.0, using a weighting pattern derived from the estimated manufacturing usage in 1971–72. Index numbers for this first series are available for the period July 1968 to November 1985.

A rebased series was introduced in December 1985 on a reference base of 1984–85 = 100.0 using a weighting pattern based on estimated manufacturing usage in 1977–78.

Table 28.12 shows summary indexes for materials used. More detailed index numbers are contained in *Chapter 18, Manufacturing*.

### 28.12 PRICE INDEXES OF MATERIALS USED IN MANUFACTURING INDUSTRIES(a)

	Imported materials	Domestic materials	All materials
1997–98	112.2	104.1	107.0
1998–99	113.5	101.5	105.9
1999–2000	118.8	114.5	115.8
2000–01	134.0	131.9	132.4
2001–02	130.3	134.1	132.4
2002–03	125.4	136.7	131.9

(a) Reference base year is 1989–90 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

### 28.13 PRICE INDEX OF THE OUTPUT OF THE GENERAL CONSTRUCTION INDUSTRY(a)

	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
General construction subdivision	97.1	100.0	104.9	106.1	107.9	112.7
Building construction	96.9	100.0	105.0	106.0	107.8	112.4
House construction	97.3	100.0	107.2	109.1	112.0	116.5
Residential building construction n.e.c.	96.7	100.0	104.7	104.2	105.1	110.4
Non-residential building construction	96.5	100.0	103.3	103.9	105.1	109.6
Non-building construction(b)	98.7	100.0	103.7	107.9	109.7	116.0
Road and bridge construction	98.7	100.0	103.7	107.9	109.7	116.0

(a) Reference base year is 1998–99 = 100.0. (b) Road and bridge construction is the sole contributor to Non-building construction.

Source: *Producer Price Indexes, Australia (6427.0)*.

## Construction price indexes

### Price indexes of the output of the building industry

The price index of the output of the general construction industry (table 28.13) measures changes in the prices of the output of ANZSIC subdivision 41 — General construction. This includes house construction (measured using the CPI project home series, excluding sponsored government home buyers' schemes), other residential building construction, non-residential building construction and non-building construction. This index is used for the following purposes:

- as an important input into the Australian national accounts by providing a deflator for current price expenditure on general construction to calculate chain volume estimates
- as an input into broader measures of price change, such as the economy-wide stage of production indexes
- to aid industry analysis.

Currently, road and bridge construction is the sole contributor to the index for ANZSIC group 412 (non-building construction). However, work is currently under way to extend the coverage to include ANZSIC class 4122 (non-building construction n.e.c.).

## Price indexes of materials used in house building

The price index of materials used in house building measures changes in the prices of selected materials used in the construction of houses in the Statistical Division containing each state capital city.

The current index series were introduced in December 1995 on a reference base of 1989–90 = 100.0 and were linked to previous series. The items and weights for the current series are based on estimated materials usage in a sample of representative houses constructed in the three years ending June 1993.

The index was first compiled on a reference base of 1966–67 = 100.0, using a weighting pattern derived from estimated materials usage in 1968–69.

A rebased series of indexes, linked to the previous series, were introduced in October 1986 on a reference base of 1985–86 = 100.0. The items in the rebased series were selected and allocated weights on the basis of the estimated values of each material used in a sample of representative houses constructed in 1985–86.

Table 28.14 shows price index series from 1997–98 to 2002–03, for the weighted average of the six state capital cities and for the individual cities. The movements in the index are discussed in *Chapter 19, Construction*.

## Price indexes of materials used in building other than house building

The price index of materials used in building other than house building measures changes in the prices of selected materials used in the construction of buildings other than houses in the Statistical Division containing each state capital city. The types of building directly represented in the index are: flats and other dwellings; hotels, motels and hostels; shops; factories; offices; other business premises; education buildings; health buildings; and other non-residential buildings.

The current index series were introduced in October 1993 on a reference base of 1989–90 = 100.0. The composition of these indexes reflects the usage of materials in the five years ending June 1992.

The index was first compiled on a reference base of 1966–67 = 100.0 using a weighting pattern derived from estimated materials usage in 1966–67. Rebased indexes for the six state capital cities were introduced in February 1981 on a reference base of 1979–80 = 100.0. The composition of these indexes reflected the usage of materials in the three years ending June 1977.

Table 28.15 shows price index series from 1997–98 to 2002–03 for the weighted average of the six state capital cities and for the individual cities. The movements in the index are discussed in *Chapter 19, Construction* and information is provided in respect of individual building materials (table 19.18).

**28.14 PRICE INDEXES OF MATERIALS USED IN HOUSE BUILDING(a)(b)**

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six state capital cities
1997–98	119.7	117.1	117.1	123.3	115.9	121.0	118.2
1998–99	121.6	118.0	118.2	125.0	116.1	122.2	119.5
1999–2000	126.8	121.7	120.8	127.2	117.7	123.8	122.8
2000–01	130.0	123.1	120.6	129.6	118.8	126.0	124.4
2001–02	132.0	125.0	122.0	130.6	119.4	128.4	126.0
2002–03	137.2	128.4	127.6	135.7	123.0	133.7	130.5

(a) Reference base year 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)*.

**28.15 PRICE INDEXES OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING(a)(b)**

	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted average of six state capital cities
1997–98	114.4	111.4	117.2	115.1	114.6	117.4	114.2
1998–99	115.2	113.2	118.4	115.5	114.1	118.5	115.2
1999–2000	116.0	114.4	119.3	116.1	115.4	119.0	116.1
2000–01	116.1	115.4	119.1	116.8	115.6	119.3	116.4
2001–02	118.2	117.8	120.8	118.8	117.7	121.3	118.6
2002–03	123.0	122.7	126.9	123.5	122.8	124.2	123.6

(a) Reference base year is 1989–90 = 100.0. (b) The separate city indexes measure price movements within each city individually. They do not compare price levels between cities.

Source: *Producer Price Indexes, Australia* (6427.0).

## Service industries price indexes

In recognition of the increasing contribution of service industries to the Australian economy, the ABS has progressively extended the scope of the producer price indexes into the service sectors of the economy. Service industry price indexes are an important part of a broader ABS plan to provide a range of statistics that will improve the measurement of various aspects of service industries in the Australian economy.

Since April 2000, the ABS has been publishing quarterly producer price indexes for the output of the Transport (freight) and storage Division, and the Property and business services Division of ANZSIC. The Transport (freight) and storage Division index contains important freight transport industries such as road, rail, sea and air. The Property and business services Division index contains services such as real estate agents and the hire and lease of machinery and equipment, and a diverse range of business services including surveying, computer services, accounting services, employment placement, pest control, and security services. The index numbers are calculated on the reference base 1998–99 = 100.0 using weighting patterns derived from the 1996–97 input-output domestic production tables and are released quarterly in *Producer Price Indexes, Australia* (6427.0).

As part of an ongoing program to improve the coverage and quality of ABS price indexes, a price index for Accommodation has been developed and research is currently under way to extend the coverage of the services price indexes to include Postal and courier services, and Telecommunication services.

The services price indexes aim to:

- assist in improving the quality of the Australian national accounts by providing a wider range of deflators for deriving real (chain volume) measures of economic growth
- contribute to the development of new measures of inflation by expanding the coverage of the indexes compiled under the economy-wide stage of production price indexes (see *Stage of production producer price indexes*)
- be of use in their own right for industry analysis.

Tables 28.16, 28.17 and 28.18 provide broad level, summary index series.

## 28.16 PRODUCER PRICE INDEXES FOR SELECTED SERVICE INDUSTRIES, Transport (freight) and storage(a)

	Road transport	Rail transport	Water transport	Air and space transport	Other transport	Services to transport	Storage	Transport (freight) and storage Division
1997–98	98.8	105.1	n.a.	n.a.	n.a.	n.a.	99.4	n.a.
1998–99	100.0	100.0	100.0	100.0	n.a.	100.0	100.0	100.0
1999–2000	101.0	94.4	103.8	99.1	n.a.	97.2	100.9	100.2
2000–01	103.1	95.3	109.8	102.7	101.8	97.2	102.1	102.3
2001–02	105.0	94.9	109.4	103.5	102.9	97.0	102.2	103.2
2002–03	107.3	94.8	106.3	111.4	103.4	100.2	103.3	105.2

(a) Reference base year is 1998–99 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

## 28.17 PRODUCER PRICE INDEXES FOR SELECTED SERVICE INDUSTRIES, Property services(a)

	Property operators and developers	Real estate agents	Machinery equipment hiring and leasing	Property services Subdivision
1998–99	100.0	100.0	100.0	100.0
1999–2000	102.8	109.9	101.3	103.2
2000–01	109.0	121.6	100.9	108.7
2001–02	111.8	133.9	98.8	111.5
2002–03	111.2	149.7	100.0	113.3

(a) Reference base year is 1998–99 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

## 28.18 PRODUCER PRICE INDEXES FOR SELECTED SERVICE INDUSTRIES, Business services(a)

	Scientific research	Technical services	Computer services	Legal and accounting services	Marketing and business management services	Other business services	Business services Subdivision
1998–99	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1999–2000	102.7	102.2	108.0	103.1	104.7	102.1	103.8
2000–01	104.7	103.6	111.2	107.7	109.5	103.7	106.9
2001–02	107.0	106.7	112.6	113.2	114.4	105.7	110.1
2002–03	113.5	113.4	114.7	117.7	117.0	108.9	113.6

(a) Reference base year is 1998–99 = 100.0.

Source: *Producer Price Indexes, Australia (6427.0)*.

## International trade price indexes

### 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 (f.o.b.) 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 import price index are as deflators for the production of chain volume estimates, as a guide to future inflationary trends for macro-economic purposes, and the indexation of business contracts.

The commodities represented cover about 95% of merchandise imports.

This series has a reference base of 1989–90 = 100.0. From the early 1990s until 2000, the weights were based on the average value of merchandise imports landed in Australia during 1988–89 and 1989–90. In 1999 a review of the index was undertaken with the findings published in *Information Paper: Review of the Import Price Index and Export Price Index, Australia 1999 (6424.0)*. One of the results of the review was a move to an annually reweighted chain index. Each September quarter the weights of the index are updated to reflect the average value of merchandise imports landed in Australia in the previous financial year. These have been released

in the publication *International Trade Price Indexes, Australia* (6457.0) from the June quarter 2001.

Summary import price index numbers based on the Standard International Trade Classification Revision 3 (SITC Rev. 3) are contained in table 30.25, *Chapter 30, International accounts and trade*.

### Export price index

The 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.

This series has a reference base of 1989–90 = 100.0. Commencing with the September quarter 2000, it is reweighted annually and chained. Under the chaining process, new weights are introduced in each September quarter. An average of the export values for the latest two years is used each year to derive the new weights. The indexes have been released in the publication *International Trade Price Indexes, Australia* (6457.0) from the June quarter 2001.

The commodities represented constitute approximately 95% of the total value of exports from Australia.

In general, prices are obtained from the major exporters of the selected commodities 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 f.o.b. at the main Australian ports of export.

As the prices used in the index are expressed in Australian currency, changes in the relative value of the Australian dollar against overseas currencies

(in particular the major trading currencies such as the US dollar, Japanese yen, pound sterling and Euro) can have a direct and significant impact on the price movements of the many commodities that are sold in terms of prices expressed in overseas currencies. Forward exchange cover is excluded from the prices used in the index.

The prices collected and used in compiling the index relate to specified standards, grades, types, etc., of each commodity with the aim of incorporating in the index the price changes for exports of representative goods of constant quality. Wherever possible, prices to specific major export markets are used for each of the goods priced, in order to lessen the impact of price variations attributable solely to changes in market destinations. In most cases, prices are combined using fixed weights between markets. Weights between markets are reviewed from time to time and revised where necessary.

Summary export price index numbers based on the Standard International Trade Classification Revision 3 (SITC Rev. 3) are contained in table 30.24, *Chapter 30, International accounts and trade*.

#### 28.19 INTERNATIONAL TRADE PRICE INDEXES(a)

	Import price index (All groups)	Export price index (All groups)
1997–98	115.4	98.9
1998–99	119.9	95.7
1999–2000	120.2	98.0
2000–01	134.3	114.8
2001–02	132.3	116.7
2002–03	126.0	111.7

(a) Reference base year is 1989–90 = 100.0.

Source: *International Trade Price Indexes, Australia* (6457.0).

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## NATIONAL ACCOUNTS

A wide range of economic data is available to analyse the performance of various components of the Australian economy over time. For example, data are regularly published on the number of houses being built, the number of cars produced, whether employment is rising or falling, the composition of exports and imports, and so on. While these and other statistical series are important in their own right, none of them in isolation can provide an overall picture of the state of the economy.

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 system of national accounts includes national income, expenditure and product accounts, financial accounts, the national balance sheet and input-output tables. At their summary level, the national income, expenditure and product accounts reflect key economic flows: production, the distribution of incomes, 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, the market for financial instruments 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. Input-output tables show which goods and services are produced by each industry and how they are used.

The national accounts 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.

The chapter includes an article *Impact of the drought on Australian production in 2002–03*.

## Defining and measuring GDP

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 formally defined 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 economy is represented in the national accounts by such measures as growth in GDP. While movements in the chain 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 which can describe all aspects of the wellbeing of a country's citizens.

There are significant aspects of the quality of life which cannot be reflected in a system of economic accounts, just as there are significant aspects of an individual's wellbeing which are not measured in the conventional concept (or any other concept) of that individual's income.

Notwithstanding their limitations, especially in relation to uses for which they were never designed, the national accounts provide important information for a range of purposes. The system of national accounts also provides a framework or structure which can be, and has been, adapted and extended to facilitate the examination of many economic and social policy issues. An example of such extensions is in the article *Impact of the drought on Australian production in 2002–03* later in this chapter.

There are three ways of measuring GDP:

*Income approach* — which measures GDP by summing the incomes accruing from production: compensation of employees (wages and salaries, and employers' social contributions); gross operating surplus (profits); gross mixed income (income from unincorporated businesses, including a return to the owners of these businesses for their labour); and taxes less subsidies on production and imports.

*Expenditure approach* — which involves summing all final expenditures on goods and services (i.e. those goods and services which are not processed any further), adding on the contributions of changes in inventories and the value of exports, and deducting the value of imports. Final expenditures consist of final consumption expenditure and gross fixed capital formation. Exports are included in GDP because they are part of Australian production even though they are sold to overseas purchasers. Imports are deducted because, although they are included in final expenditures (e.g. when someone buys an imported video recorder its value is included as part of household final consumption expenditure), they are not part of Australian production.

*Production approach* — which calculates GDP by taking the value of goods and services produced by an industry (its output at basic prices, which implicitly includes taxes less subsidies on production) and deducting the cost of goods and services used up by the industry in the productive process (intermediate consumption), which leaves the value added by the industry. GDP is then obtained by summing value added across all industries, and adding taxes less subsidies on products.

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 which are available for 1994–95 to 2000–2001. Integration with balanced supply and use tables ensures that the same estimate of GDP is obtained from the three approaches, and thus annual estimates using the income, expenditure and production approaches are identical for the years for which supply and use tables are available.

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. Table 29.1 shows time series of chain volume measures for GDP, and GDP per capita, from 1975–76 to 2001–02. (For a discussion of chain volume measures, see *Chain volume or 'real' GDP* later in this chapter.)

The chain volume measure of GDP increased by 3.9% in 2001–02, following an increase of 1.8% in 2000–01. For some analytical purposes, it is important to allow for the impact of population growth on movements in GDP. Annual growth in GDP per capita has been about one to two percentage points lower than that for GDP since the mid-1970s and was negative in 1977–78, 1982–83, 1990–91 and 1991–92 (graph 29.2). In 2001–02, GDP per capita increased by 2.8%.

Compared to many developed economies, Australia has experienced relatively strong growth over the past 10 years. With an average annual growth rate of 4.0% for 'real' GDP from 1992 to 2001, it is higher than any of the 'G7' countries but unable to match the 5.6% average annual growth rate for the Republic of (South) Korea (table 29.3).

**29.1 GDP, Chain volume measures(a)**

	GDP	GDP per capita
	\$m	\$
1975–76	302 022	21 626
1976–77	312 074	22 116
1977–78	314 916	22 053
1978–79	331 068	22 933
1979–80	339 539	23 253
1980–81	349 847	23 623
1981–82	362 299	24 065
1982–83	352 747	23 068
1983–84	371 568	23 995
1984–85	389 404	24 831
1985–86	405 471	25 500
1986–87	415 818	25 764
1987–88	438 117	26 716
1988–89	455 744	27 314
1989–90	472 748	27 910
1990–91	472 293	27 496
1991–92	473 557	27 224
1992–93	490 898	27 912
1993–94	509 999	28 706
1994–95	531 578	29 596
1995–96	554 001	30 448
1996–97	574 989	31 215
1997–98	600 590	32 247
1998–99	632 488	33 579
1999–00	657 771	34 536
2000–01	669 307	34 730
2001–02	695 663	35 693

(a) Reference year is 2000–01.

Source: Australian System of National Accounts (5204.0).

**29.2 GDP AND GDP PER CAPITA**



Source: Australian System of National Accounts (5204.0).

**29.3 GDP AT CONSTANT PRICES, International comparison — 1993 to 2001(a)**

	Average annual growth rate
	%
<b>Australia</b>	<b>4.0</b>
'G7' countries	
Canada	3.6
France	2.1
Germany	1.4
Italy	1.8
Japan	1.2
United Kingdom	3.0
United States of America	3.3
Korea, Republic of (South)	5.6
New Zealand	3.5

(a) Average annual growth.

Source: OECD, *Quarterly National Accounts*, Vol. 2003/2.

**Impact of the drought on Australian production in 2002–03**

**Introduction**

Severe drought conditions have been experienced throughout Australia recently, resulting in a range of social and economic impacts. The purpose of this article is to briefly describe the impact of the drought on the estimates published in the Australian System of National Accounts. Both the direct and indirect effects of the drought on GDP are discussed. In addition, the article identifies those components of GDP that have been most affected.

The direct effect of the current drought on agricultural production is that it has had a downward impact on GDP growth of 1.0 percentage point between 2001–02 and 2002–03.

In addition to the direct effect there will be various indirect effects. These can be put into two categories. The first category is the effect on downstream industries, principally transport, wholesale trade and the manufacturing of products from agricultural outputs. The second category comprises the multiplier effects arising from the reduced value of production by the agriculture industry and its downstream industries. This has two elements. One arises from any reduction in the inputs of these industries which leads to a reduction in the production of other Australian industries. The other arises from any reduction in factor income

of the agriculture and downstream industries that leads to a fall in final expenditures by farmers and others who draw an income from these industries.

In this article no attempt is made to quantify the magnitude of the indirect effects, although consideration is given as to how this might be done. Assessments of the likely impacts of the drought on the economy have recently been released by Australian Bureau of Agricultural and Resource Economics (ABARE), the Treasury and the Reserve Bank of Australia.

**Direct effect of the drought on agricultural production**

Australian Bureau of Statistics (ABS) estimates of agricultural production and costs in respect of 2002–03 are primarily based on forecasts compiled by ABARE.

Table 29.4 shows, in seasonally adjusted chain volume terms, the published data for each quarter from the March quarter 2002 to the June quarter 2003. During that period a much more marked decline occurred in agricultural outputs than in agricultural inputs. The difference between the outputs and inputs is gross agricultural product at market prices. The expected fall in the estimates of gross agricultural product at market prices between 2001–02 and

2002–03 represents the direct impact on GDP of the current drought over this period. The decline in chain volume terms from \$25,796m in 2001–02 to \$18,436m in 2002–03, a fall of \$7,360m or 28.5%, representing a negative contribution of 1.0 percentage point to the growth in the volume of GDP between 2001–02 and 2002–03.

In the Australian system of national accounts, industry estimates of value added are presented at basic prices, in accordance with international standards. Such estimates give a better indication of an industry's actual value added as they exclude the taxes less subsidies on the products

produced by an industry. Gross value added at basic prices for the agriculture industry declined from \$23,325m in 2001–02 to \$16,606m in 2002–03, a fall of \$6,629m or 28.5%.

Graph 29.5 shows, in seasonally adjusted chain volume terms, the outputs for five major categories of agricultural output. It is clear that the major expected impact of the drought in 2002–03 is on the output of non-cereal crops.

For a complete picture of the impact of the drought on GDP the indirect effects of the drought must also be considered.

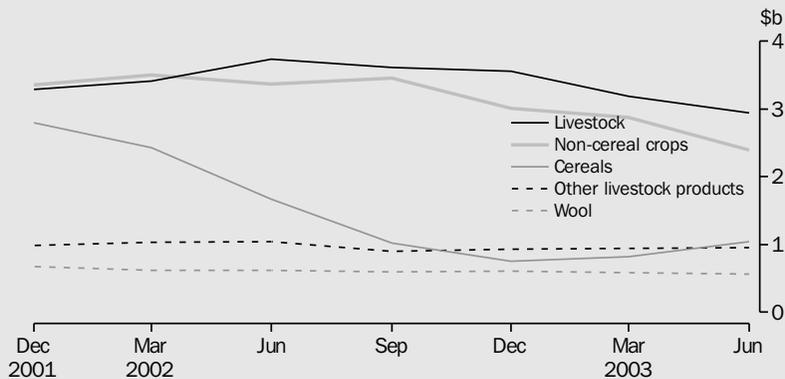
#### 29.4 AGRICULTURAL PRODUCTION, Chain volume measures(a): Seasonally adjusted

	2001–02				2002–03	
	Mar	Jun	Sep	Dec	Mar	Jun
	\$m	\$m	\$m	\$m	\$m	\$m
Outputs	10 940	10 361	9 480	8 712	8 309	7 863
less inputs	4 301	4 293	4 211	4 038	3 938	3 740
Gross agricultural product at market prices	6 639	6 068	5 269	4 674	4 371	4 123
less taxes less subsidies on products	662	606	525	464	433	409
Agriculture industry gross value added at basic prices	5 977	5 462	4 744	4 210	3 938	3 714
GDP	178 541	180 021	181 783	182 307	183 353	183 578

(a) Reference year is 2001–02.

Source: Australian National Accounts: National Income, Expenditure and Product, June Quarter 2003 (5206.0).

#### 29.5 FARM OUTPUT, Chain volume measures(a): Seasonally adjusted



(a) Reference year is 2001–02.

Source: Australian National Account: National Income and Product, June Quarter 2003 (5206.0).

## Indirect impacts

The relationships between direct and indirect impacts of the drought on the national accounts are quite complex. For instance, the reduced volume of grain produced means that less road and rail freight will be required to move the crops from the point of production to the various final users. Further, the volume of throughput for the wholesale industry will be reduced, resulting in reduced volumes of production by this industry. However, these negative impacts on the transport and wholesale trade industries could be offset somewhat by the likely increase in activity required to transport stock to market as well as the possible extra transport activity associated with transporting feed for stock and stock for agistment.

The need of some farmers to divest themselves of all but the core stock of animals causes increased manufacturing activity, in the form of slaughtering, in the short term. In the medium to longer term this will result in a reduction in the quantity of stock available for slaughter and thus a probable reduction in this type of activity in future periods.

While very difficult to measure, it is thought that, on balance, the secondary impact of the current drought on downstream industries, principally the transport, manufacturing and wholesale trade industries, is likely to be relatively small.

Another secondary impact of the drought is the effect on the production of other industries due to a reduction in farm inputs. As the table above shows, farm inputs are projected to fall much less significantly than farm outputs. For this reason, this impact is likely to be relatively insignificant for the economy as a whole.

The projected fall in farm income will be determined by a combination of changes in the volume of outputs and inputs, and the changes in output and input prices. While it is certain that there will be a fall in the volume of some outputs, such as cereals, there is some uncertainty about what will happen to prices.

There are other indirect effects of the drought. These may broadly be characterised as 'tertiary effects'. Tertiary effects denote the ensuing effects from the reduced value of production of the agriculture and downstream industries. It follows that if the secondary effect on downstream industries is small then the tertiary effect arising from any reduction in their production must be small too. That leaves the

tertiary effect arising from a reduction in final expenditures by farmers, and the like, who suffer a reduction in income as a result of a fall in the value of farm production. The impact on farmers' expenditures from the fall in farmers' income may be mitigated to some degree because farmers can draw down savings from the previous run of good years. Nevertheless, the decline in farm income is highly likely to have some impact on farmer's expenditures on final consumption goods and services and gross fixed capital formation, although the extent is unknown.

A reduction in expenditures as result of reduced production by agriculture and its downstream industries will, to the extent that such expenditures are on goods and services produced in Australia, lead to a further reduction in Australian incomes. This will in turn lead to a further reduction in expenditures and so on. In this way the so-called multiplier effect magnifies the effect of good or bad farm seasons.

In order to estimate the indirect impacts, Input-Output valued added multipliers can be used. These multipliers provide various measures of change that result from an initial exogenous change to final output. They are calculated based on the industrial structures published in the Input-Output tables (*Australian National Accounts: Input-Output Tables* (5209.0)). Care needs to be exercised in using these multipliers because they reflect average relationships. To the extent that changes at the margin are different from those on average, the results can be misleading. Further, as this approach does not capture the effects of change in structure over time that may result from these initial changes, they represent a static rather than a dynamic view of the economy.

Notwithstanding the caveats in the preceding paragraph, the Input-Output multipliers remain a potentially useful means of generating an assessment of the overall impact of the type of shock caused by an event such as the current drought. The calculation of the tertiary effect can be derived by applying the appropriate multiplier to each postulated initial impact on expenditures. An analysis of this type is described in a feature article appearing in the September quarter 1996 issue of *Australian National Accounts: National Income, Expenditure and Product* (5206.0), titled 'Impact of the 1995–96 farm season on Australian production'.

## Broad impact on major national accounting aggregates

Reduced levels of agricultural production are likely to be reflected in a number of national accounting aggregates. Production, expenditure and income-based estimates will all be affected. For the production and income-based estimates, the most obvious impacts will be seen in the level of gross value of agricultural production and the flow on impact on agricultural income — that is, the proceeds of sales net of operating costs. The downward impact of the drought on agricultural production, while offset somewhat by reduced farm costs, will result in a reduction in the value added and gross mixed income/gross operating surplus of the agriculture industry. Typically, fluctuations in agricultural incomes tend to be of a much greater magnitude than the fluctuations

in agricultural production. According to ABARE forecasts, this pattern will continue into the near future, with farm incomes expected to be very substantially lower in 2002–03 than in 2001–02.

The drought will cause several notable direct impacts on expenditure-based estimates in the national accounts. Since the majority (around two-thirds) of farm production is either directly or indirectly exported, there will be a significant impact on exports of agricultural commodities, particularly cereals. Estimates of gross fixed capital formation of livestock will also be reduced. There are likely to be falls in farm inventories due to lower output and as farmers are forced to run down their stocks of fodder. In addition, wholesalers' inventories of agricultural outputs are likely to decline.

## Chain volume or 'real' GDP

Chain volume measures were introduced into the Australian national accounts in 1998. They were first presented as experimental measures for the expenditure components of GDP in the December quarter 1997 issue of *Australian National Accounts: National Income, Expenditure and Product* (5206.0) and were an addition to the longstanding constant price estimates which were still the 'official' volume estimates. Subsequently, in the September quarter 1998 issue of 5206.0, the constant price estimates of both the expenditure and production components of GDP were replaced with chain volume measures and they became the ABS' 'official' volume estimates.

The reason for having either chain volume or constant price estimates in the national accounts is to provide time series of expenditure and production aggregates which 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 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 equipment are estimated to have declined by about 86% between 1989–90 and 2001–02, 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, 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 commonly insufficient, and hence the latest international standards recommend rebasing every year and linking the resulting indexes to form annually reweighted chain volume measures.

Chain volume estimates are not generally additive. In other words, component chain 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 is using the latest base year as the reference year (i.e. the year when the annual chain volume estimate equals the current price value). Re-referencing changes the level of the chain 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.

The decision to replace all ABS constant price estimates with chain volume measures was announced in March 1998 in *Information Paper: Introduction of Chain Volume Measures in the Australian National Accounts (5248.0)*. That paper describes what chain volume measures are, their advantages and disadvantages with respect to constant price estimates, the advantages and disadvantages of different chain volume formulae, and the results of an empirical analysis.

## Chain price indexes and implicit price deflators

A by-product of the calculation of chain 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 chain 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 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 in some detail every 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)*.

### GDP account

The GDP account indicates changes in Australian production over time. Tables 29.6 and 29.7 show the GDP account in current prices for a number of years between 1965–66 and 2001–02; table 29.6 shows a series of snapshots at five-yearly intervals to 1990–91, while table 29.7 shows annual time series from 1994–95 to 2001–02. Table 29.8 shows expenditure on GDP in real or chain volume terms.

In real terms (i.e. after the effects of price change are removed from the dollar value of Australia's production), there was a fall in production during 1990–91. However, the nine years since the recession in 1990–91 have all shown growth in GDP. Although growth in 1991–92 was relatively low (0.3%), by 1994–95 it had accelerated to 4.2%, a growth rate which has generally been maintained since, except for a slight slowing in 1996–97. GDP growth of 3.9% for 2001–02 signified a return to the general level of growth exhibited throughout the majority of the 1990s after the moderate growth in 2000–01 of 1.8%.

**29.6 GDP ACCOUNT, Current prices — Five-yearly intervals**

	1965-66	1970-71	1975-76	1980-81	1985-86	1990-91
	\$m	\$m	\$m	\$m	\$m	\$m
Final consumption expenditure						
General government	3 146	5 547	14 715	27 123	49 760	74 663
Households	13 746	21 515	45 459	84 097	144 502	233 726
<i>Total</i>	16 892	27 062	60 175	111 220	194 263	308 390
Gross fixed capital formation						
Private	5 082	8 388	13 328	29 256	45 959	67 027
Public	2 040	2 896	6 582	9 926	19 182	23 238
<i>Total</i>	7 122	11 284	19 910	39 182	65 141	90 267
Changes in inventories	84	586	180	446	870	-1 366
<i>Gross national expenditure</i>	24 098	38 933	80 265	150 849	260 274	397 291
Exports of goods and services	3 136	5 086	11 225	22 604	38 948	66 259
less Imports of goods and services	3 683	5 214	11 163	25 530	47 199	66 948
Statistical discrepancy (expenditure-based)	-427	-528	-941	-2 280	-3 892	1 279
<b>Gross domestic product</b>	<b>23 124</b>	<b>38 277</b>	<b>79 386</b>	<b>145 643</b>	<b>248 131</b>	<b>397 881</b>
Compensation of employees	11 329	19 320	43 919	75 044	123 434	192 723
Gross operating surplus	5 096	9 175	17 299	36 169	68 337	118 690
Gross mixed income	4 638	6 343	10 704	19 904	28 738	42 545
<i>Total factor income</i>	21 063	34 838	71 922	131 117	220 509	353 958
Taxes less subsidies on production and imports	2 079	3 151	7 895	14 753	27 805	43 407
Statistical discrepancy (income-based)	-18	288	-431	-226	-183	516
<b>Gross domestic product</b>	<b>23 124</b>	<b>38 277</b>	<b>79 386</b>	<b>145 643</b>	<b>248 131</b>	<b>397 881</b>

Source: Australian System of National Accounts (5204.0).

**29.7 GDP ACCOUNT, Current prices — Annual intervals**

	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02
	\$m	$m	$m	$m	$m	$m	$m	$m
Final consumption expenditure								
General government	87 736	92 956	96 173	101 332	108 266	114 510	120 989	127 768
Households	282 870	301 069	314 565	335 102	354 420	374 922	403 875	428 260
<i>Total</i>	370 606	394 025	410 738	436 434	462 686	489 432	524 864	556 029
Gross fixed capital formation								
Private	84 993	88 029	95 040	108 722	113 721	125 858	118 449	131 782
Public	24 358	23 571	22 550	20 748	25 278	25 136	25 140	26 631
<i>Total</i>	109 350	111 600	117 588	129 473	138 999	150 994	143 589	158 413
Changes in inventories	1 393	-813	-10	62	4 662	2 483	-22	621
<i>Gross national expenditure</i>	481 350	504 812	528 316	565 969	606 347	642 909	668 431	715 062
Exports of goods and services	87 654	99 095	105 160	113 744	112 025	126 034	153 511	152 361
less Imports of goods and services	97 654	101 078	103 590	118 482	126 453	140 323	152 636	153 959
Statistical discrepancy (expenditure-based)	—	—	—	—	—	—	—	-484
<b>Gross domestic product</b>	<b>471 348</b>	<b>502 828</b>	<b>529 886</b>	<b>561 229</b>	<b>591 917</b>	<b>628 621</b>	<b>669 307</b>	<b>712 980</b>
Compensation of employees	224 450	241 100	257 968	268 912	286 610	302 385	321 731	338 514
Gross operating surplus	146 011	153 623	162 189	177 700	183 069	197 414	205 782	217 747
Gross mixed income	46 138	49 064	47 969	50 062	52 396	55 510	59 479	67 817
<i>Total factor income</i>	416 599	443 787	468 126	496 674	522 075	555 309	586 992	624 078
Taxes less subsidies on production and imports	54 749	59 041	61 760	64 555	69 842	73 312	82 315	88 305
Statistical discrepancy (income-based)	—	—	—	—	—	—	—	597
<b>Gross domestic product</b>	<b>471 348</b>	<b>502 828</b>	<b>529 886</b>	<b>561 229</b>	<b>591 917</b>	<b>628 621</b>	<b>669 307</b>	<b>712 980</b>

Source: Australian System of National Accounts, 2001–02 (5204.0).

### 29.8 EXPENDITURE ON GDP, Chain volume measures(a)

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	\$m	$m	$m	$m	$m	$m	$m	$m
Final consumption expenditure								
General government	99 356	103 381	104 870	108 830	113 236	118 414	120 989	125 012
Households	321 119	333 321	342 987	359 429	376 757	392 262	403 875	419 271
Total	420 471	436 698	447 858	468 260	489 994	510 684	524 864	544 283
Gross fixed capital formation								
Private	88 313	91 446	101 010	114 706	118 744	130 833	118 449	130 650
Public	24 370	23 449	22 868	20 988	25 181	25 202	25 141	26 682
Total	111 003	113 409	122 227	133 847	143 042	155 542	143 590	157 331
Domestic final demand	533 091	551 288	571 668	603 846	633 956	666 785	668 454	701 614
Changes in inventories	3 118	-272	-808	-37	5 336	2 650	-22	150
Gross national expenditure	533 535	549 979	570 355	602 505	637 839	668 344	668 432	701 764
Exports of goods and services	101 578	111 971	123 707	128 276	130 896	143 132	153 511	150 609
less Imports of goods and services	104 496	108 711	119 505	131 124	137 451	154 606	152 636	156 206
Statistical discrepancy (expenditure-based)	—	—	—	—	—	—	—	-504
<b>Gross domestic product</b>	<b>531 578</b>	<b>554 001</b>	<b>574 989</b>	<b>600 590</b>	<b>632 488</b>	<b>657 771</b>	<b>669 307</b>	<b>695 663</b>

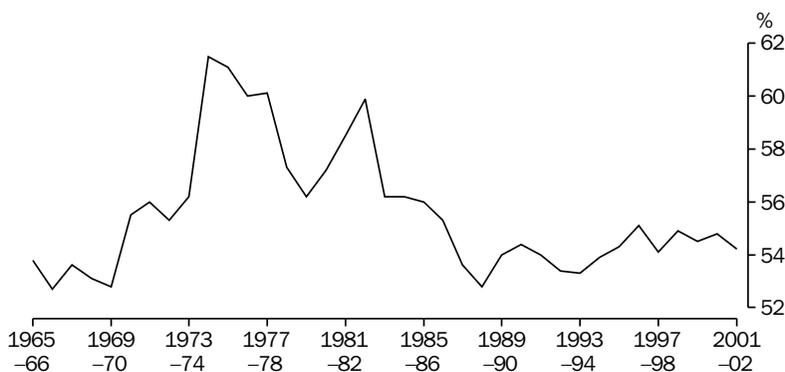
(a) Reference year is 2000-01.

Source: Australian System of National Accounts, 2001-02 (5204.0).

The GDP 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 29.9 and 29.10

show how the shares of total factor income accruing to wages 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.)

29.9 WAGES SHARE OF TOTAL FACTOR INCOME



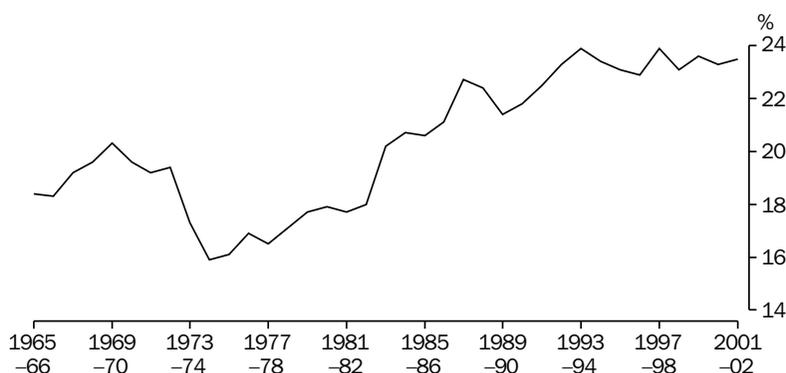
Source: Australian System of National Accounts, 2001-02 (5204.0).

The highest recorded value of the wages share of total factor income was 61.5% in 1974–75. The wages share has recovered somewhat from its low value of 52.8% in 1988–89, but at 54.2% for 2001–02 it remains below the level recorded for most of the 1970s and early-1980s. In 2001–02 the profits share of total factor income of 23.5% for private and public corporations was slightly below its highest share of 23.9%, which was recorded in both 1993–94 and 1997–98.

## 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 which is not spent in this way is saving. Tables 29.11 and 29.12 show the income account for a number of years between 1965–66 and 2001–02; table 29.11 shows a series of snapshots at five-yearly intervals to 1990–91, while table 29.12 shows annual time series from 1994–95 to 2001–02.

### 29.10 PROFITS SHARE OF TOTAL FACTOR INCOME



Source: Australian System of National Accounts, 2001–02 (5204.0).

### 29.11 NATIONAL INCOME ACCOUNT, Current prices — Five-yearly intervals

	1965–66	1970–71	1975–76	1980–81	1985–86	1990–91
	\$m	\$m	\$m	\$m	\$m	\$m
<b>INCOME</b>						
Compensation of employees	11 329	19 320	43 919	75 044	123 434	192 723
Gross operating surplus	5 096	9 175	17 299	36 169	68 337	118 690
Gross mixed income	4 638	6 343	10 704	19 904	28 738	42 545
Taxes less subsidies on production and imports	2 079	3 151	7 895	14 753	27 805	43 407
Net primary income from non-residents	-308	-600	-1 202	-2 397	-6 853	-17 224
<b>Gross national income</b>	<b>22 834</b>	<b>37 389</b>	<b>78 615</b>	<b>143 473</b>	<b>241 461</b>	<b>380 141</b>
Net secondary income from non-residents	-90	-110	-287	-441	-384	453
<b>Gross disposable income</b>	<b>22 744</b>	<b>37 279</b>	<b>78 328</b>	<b>143 032</b>	<b>241 077</b>	<b>380 594</b>
<b>USE OF DISPOSABLE INCOME</b>						
Final consumption expenditure						
General government	3 146	5 547	14 715	27 123	49 760	74 663
Households	13 746	21 515	45 459	84 097	144 502	233 726
<b>Total</b>	<b>16 892</b>	<b>27 062</b>	<b>60 175</b>	<b>111 220</b>	<b>194 263</b>	<b>308 390</b>
Net saving(a)	1 917	3 752	5 980	9 678	7 379	7 826
Consumption of fixed capital	3 933	6 466	12 169	22 134	39 435	64 378
<b>Total use of gross disposable income</b>	<b>22 744</b>	<b>37 279</b>	<b>78 328</b>	<b>143 032</b>	<b>241 077</b>	<b>380 594</b>

(a) Net saving is derived as a balancing item.

Source: Australian System of National Accounts, 2001–02 (5204.0).

### 29.12 NATIONAL INCOME ACCOUNT, Current prices — Annual intervals

	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02
	\$m	$m	$m	$m	$m	$m	$m	$m
<b>INCOME</b>								
Compensation of employees	224 450	241 100	257 968	268 912	286 610	302 385	321 731	338 514
Gross operating surplus	146 011	153 623	162 189	177 700	183 069	197 414	205 782	217 747
Gross mixed income	46 138	49 064	47 969	50 062	52 396	55 510	59 479	67 817
Taxes less subsidies on production and imports	54 749	59 041	61 760	64 555	69 842	73 312	82 315	88 305
Net primary income from non-residents	-18 117	-19 533	-19 151	-18 091	-18 430	-18 150	-19 077	-20 220
<i>Gross national income</i>	453 231	483 295	510 735	543 138	573 487	610 471	650 230	692 163
Net secondary income from non-residents	-323	64	-21	22	-749	218	32	-18
<b>Gross disposable income</b>	<b>452 908</b>	<b>483 359</b>	<b>510 714</b>	<b>543 160</b>	<b>572 738</b>	<b>610 689</b>	<b>650 262</b>	<b>692 146</b>
<b>USE OF DISPOSABLE INCOME</b>								
Final consumption expenditure								
General government	87 736	92 956	96 173	101 332	108 266	114 510	120 989	127 768
Households	282 870	301 069	314 565	335 102	354 420	374 922	403 875	428 260
<i>Total</i>	370 606	394 025	410 738	436 434	462 686	489 432	524 864	556 029
Net saving(a)	6 063	10 750	19 646	20 654	18 836	23 068	20 471	23 610
Consumption of fixed capital	76 239	78 584	80 330	86 072	91 216	97 821	104 927	112 507
<b>Total use of gross disposable income</b>	<b>452 908</b>	<b>483 359</b>	<b>510 714</b>	<b>543 160</b>	<b>572 738</b>	<b>610 689</b>	<b>650 262</b>	<b>692 146</b>

(a) Net saving is derived as a balancing item.

Source: Australian System of National Accounts, 2001–02 (5204.0).

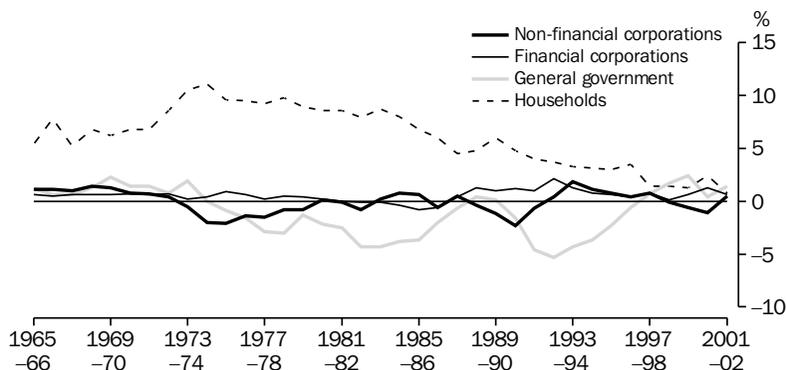
Graph 29.13 shows net saving by institutional sector as a proportion of GDP for the years 1965–66 to 2001–02. Household net saving as a percentage of GDP generally rose between 1965–66 and 1974–75, but has fallen subsequently from its high of 11.1% in 1974–75 to just 0.8% (\$5.5b) in 2001–02. General government net saving was negative from 1974–75 to 1996–97 (except for 1988–89 and 1989–90). In 2001–02 it was positive at 1.4% (\$9.9b). In 2001–02 net saving of non-financial corporations was 0.5% of GDP (\$3.7b). Net saving of financial corporations was negative from 1981–82 to 1986–87, the only period for which this sector has recorded negative net saving. In 2001–02 net saving of financial corporations was 0.6% of GDP (\$4.5b).

### 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. If, as is currently the case for Australia, the nation's saving and consumption of fixed capital are not sufficient to pay for all the fixed capital needed for Australian production, 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.

Tables 29.14 and 29.15 show the national capital account for a number of years between 1965–66 and 2001–02; table 29.14 shows a series of snapshots at five-yearly intervals to 1990–91, while table 29.15 shows annual time series from 1994–95 to 2001–02.

### 29.13 NET SAVING, By sector — Share of GDP



Source: Australian System of National Accounts, 2001-02 (5204.0).

### 29.14 NATIONAL CAPITAL ACCOUNT, Current prices — Five-yearly intervals

	1965-66	1970-71	1975-76	1980-81	1985-86	1990-91
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Net saving</b>						
Non-financial corporations	259	320	-1 629	102	1 427	-9 324
Financial corporations	131	278	733	308	-1 868	4 592
General government	267	551	-751	-3 174	-9 153	-6 387
Households	1 260	2 603	7 628	12 456	16 974	18 946
<i>Total</i>	<i>1 917</i>	<i>3 752</i>	<i>5 980</i>	<i>9 692</i>	<i>7 379</i>	<i>7 826</i>
Consumption of fixed capital	3 933	6 466	12 169	22 134	39 435	64 378
Net capital transfers receivable from non-residents	46	56	-27	167	830	2 071
<b>Gross saving and capital transfers</b>	<b>6 249</b>	<b>10 909</b>	<b>18 862</b>	<b>32 345</b>	<b>47 300</b>	<b>74 276</b>
<b>Gross fixed capital formation</b>						
Private	5 082	8 388	13 328	29 256	45 959	67 027
Public corporations	951	1 371	2 790	5 584	10 664	12 271
General government	1 089	1 525	3 792	4 342	8 518	10 967
<i>Total</i>	<i>7 122</i>	<i>11 284</i>	<i>19 910</i>	<i>39 182</i>	<i>65 141</i>	<i>90 267</i>
<b>Changes in inventories</b>						
Private non-farm	147	366	91	115	882	-1 125
Farm and public authorities	-63	220	89	331	-12	-241
<i>Total</i>	<i>84</i>	<i>586</i>	<i>180</i>	<i>446</i>	<i>870</i>	<i>-1 366</i>
Acquisitions less disposals of non-produced non-financial assets	—	—	—	—	—	-7
Statistical discrepancy(a)	-409	-815	-510	-2 053	-3 710	763
Net lending to non-residents	-899	-782	-1 454	-5 597	-14 658	-15 382
<b>Total capital accumulation and net lending</b>	<b>6 249</b>	<b>10 909</b>	<b>18 862</b>	<b>32 345</b>	<b>47 300</b>	<b>74 276</b>

(a) Statistical discrepancy (expenditure-based) less statistical discrepancy (income-based).

Source: Australian System of National Accounts, 2001-02 (5204.0).

**29.15 NATIONAL CAPITAL ACCOUNT, Current prices — Annual intervals**

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Net saving								
Non-financial corporations	5 082	4 125	1 994	4 253	-721	-3 864	-7 029	3 690
Financial corporations	3 810	3 073	2 076	4 234	679	3 709	8 547	4 530
General government	-17 313	-11 738	-2 996	4 082	10 333	15 251	2 976	9 934
Households	14 484	15 290	18 572	8 085	8 545	7 972	15 977	5 457
Total	6 063	10 750	19 646	20 654	18 836	23 068	20 471	23 610
Consumption of fixed capital	76 239	78 584	80 330	86 072	91 216	97 821	104 927	112 507
Net capital transfers receivable from non-residents	540	1 045	1 323	1 097	1 186	1 136	1 182	1 120
<b>Gross saving and capital transfers</b>	<b>82 842</b>	<b>90 379</b>	<b>101 299</b>	<b>107 823</b>	<b>111 238</b>	<b>122 393</b>	<b>126 580</b>	<b>137 238</b>
Gross fixed capital formation								
Private	84 993	88 029	95 040	108 722	113 721	125 858	118 449	131 782
Public corporations	11 864	11 322	9 525	8 013	11 620	9 158	8 967	11 317
General government	12 494	12 249	13 025	12 735	13 658	15 978	16 173	15 314
Total	109 350	111 600	117 588	129 473	138 999	150 994	143 589	158 413
Changes in inventories								
Private non-farm	659	-487	2 402	-418	4 675	2 556	550	704
Farm and public authorities	734	-326	-2 412	480	-13	-73	-572	-83
Total	1 393	-813	-10	62	4 662	2 483	-22	621
Acquisitions less disposals of non-produced non-financial assets	-32	-25	6	-30	19	83	73	82
Statistical discrepancy(a)	—	—	—	—	—	—	—	-1 081
Net lending to non-residents	-27 868	-20 382	-16 285	-21 680	-32 440	-31 168	-17 061	-20 797
<b>Total capital accumulation and net lending</b>	<b>82 842</b>	<b>90 379</b>	<b>101 299</b>	<b>107 823</b>	<b>111 238</b>	<b>122 393</b>	<b>126 580</b>	<b>137 238</b>

(a) Statistical discrepancy (expenditure-based) less statistical discrepancy (income-based).

Source: Australian System of National Accounts, 2001-02 (5204.0).

Graph 29.16 shows gross fixed capital formation (investment) by institutional sector as a proportion of GDP. For non-financial corporations this proportion generally fell during the 1970s, then rose to a peak of 13.1% in 1981–82. It has subsequently been above 10% except for the years 1991–92 to 1993–94, and in the last two years. In 2001–02 investment by non-financial corporations was 9.9% of GDP. Household investment has generally remained at around 9% of GDP and was 9.3% in 2001–02. General government investment as a proportion of GDP peaked at 4.8% in 1975–76. It has generally fallen since then and was 2.1% of GDP in 2001–02. Financial corporations investment peaked in 1988–89 at 1.9% of GDP. It has generally fallen since then and was 0.8% of GDP in 2001–02.

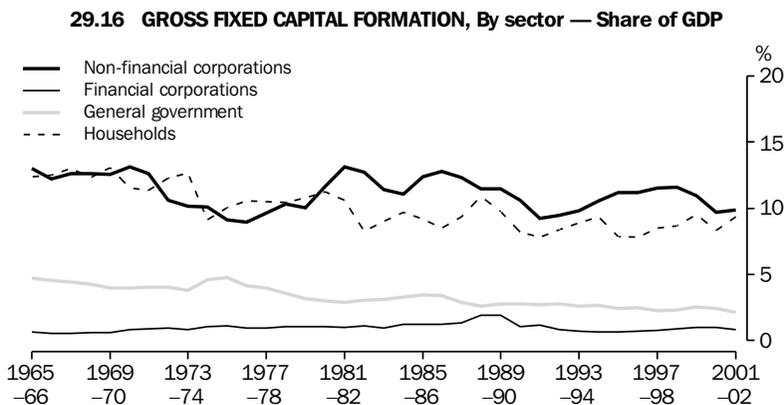
Graph 29.17 shows net lending by institutional sector as a proportion of GDP. A positive percentage for a sector indicates that it is a net lender to other sectors; a negative percentage indicates that it is a net borrower. The household sector has been a net lender for most years. As a proportion of GDP, net lending by households peaked in 1974–75 at 8.4%. Since then it has trended downwards, household lending being 2.4% in 2001–02. Non-financial corporations have been net borrowers over the whole period from 1965–66 to 2001–02, and the amounts borrowed have fluctuated significantly from year to year. As a proportion of GDP, their net borrowing was 1.9%

in 2001–02. After being a net borrower throughout the 1980s, the financial corporations sector returned to being a net lender in 1990–91 and has remained so since then. In 2001–02 financial corporations net lending represented 0.5% of GDP. After recording a record level of borrowing in 1992–93 as a proportion of GDP (6.2%), general government borrowing steadily declined. In 1997–98 the sector became a net lender until 2000–01 when it became a net borrower again. In 2001–02 general government net borrowing represented 0.8% of GDP.

## External account

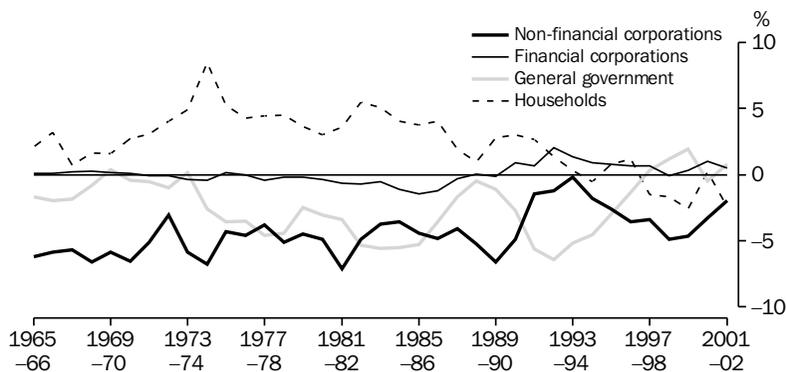
The external account is derived from the detailed balance of payments current and capital accounts (see *Chapter 30, International accounts and trade*). It shows Australia's exports and imports, incomes and transfers received by Australian residents from non-residents, and incomes and transfers payable 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.

Tables 29.18 and 29.19 show the external account for a number of years between 1965–66 and 2001–02; table 29.18 shows a series of snapshots at five-yearly intervals to 1990–91, while table 29.19 shows annual time series from 1994–95 to 2001–02.



Source: Australian System of National Accounts, 2001–02 (5204.0).

### 29.17 NET LENDING, By sector — Share of GDP



Source: Australian System of National Accounts, 2001–02 (5204.0).

### 29.18 EXTERNAL ACCOUNT, Current prices — Five-yearly intervals

	1965–66	1970–71	1975–76	1980–81	1985–86	1990–91
	\$m	\$m	\$m	\$m	\$m	\$m
Imports of goods and services	3 683	5 214	11 163	25 530	47 199	66 948
Primary income receivable						
Compensation of employees	11	17	44	110	164	429
Property income	400	760	1 587	3 147	8 879	20 552
Total	411	777	1 631	3 257	9 043	20 981
Secondary income	169	358	773	1 264	1 797	2 422
Capital transfers to non-residents	40	78	203	320	486	653
Acquisitions less disposals of non-produced non-financial assets	—	—	—	—	—	—7
Net lending	-899	-782	-1 454	-5 597	-14 658	-15 382
<b>Resources provided by non-residents</b>	<b>3 404</b>	<b>5 645</b>	<b>12 316</b>	<b>24 774</b>	<b>43 867</b>	<b>75 615</b>
Exports of goods and services	3 136	5 086	11 225	22 604	38 948	66 259
Primary income payable						
Compensation of employees	10	13	59	119	165	432
Property income	93	164	370	741	2 025	3 325
Total	103	177	429	860	2 190	3 757
Secondary income payable	79	248	486	823	1 413	2 875
Capital transfers from non-residents	86	134	176	487	1 316	2 724
<b>Resources provided to non-residents</b>	<b>3 404</b>	<b>5 645</b>	<b>12 316</b>	<b>24 774</b>	<b>43 867</b>	<b>75 615</b>

Source: Australian System of National Accounts, 2001–02 (5204.0).

**29.19 EXTERNAL ACCOUNT, Current prices — Annual intervals**

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Imports of goods and services	97 654	101 078	103 590	118 482	126 453	140 323	152 636	153 959
Primary income receivable								
Compensation of employees	389	458	539	792	854	963	1 065	1 035
Property income	24 669	26 215	27 175	27 683	27 864	30 960	34 191	34 098
Total	25 058	26 673	27 714	28 475	28 718	31 923	35 256	35 133
Secondary income	3 347	3 228	3 561	3 971	5 247	4 407	4 421	4 297
Capital transfers to non-residents	843	907	877	971	1 011	1 199	1 260	1 393
Acquisitions less disposals of non-produced non-financial assets	-32	-25	6	-30	19	83	73	82
Net lending	-27 868	-20 382	-16 285	-21 680	-32 440	-31 168	-17 061	-20 797
<b>Resources provided by non-residents</b>	<b>99 002</b>	<b>111 479</b>	<b>119 463</b>	<b>130 189</b>	<b>129 008</b>	<b>146 705</b>	<b>176 585</b>	<b>174 067</b>
Exports of goods and services	87 654	99 095	105 160	113 744	112 025	126 034	153 511	152 361
Primary income payable								
Compensation of employees	551	610	678	747	797	826	896	909
Property income	6 390	6 530	7 885	9 637	9 491	12 947	15 283	14 004
Total	6 941	7 140	8 563	10 384	10 288	13 773	16 179	14 913
Secondary income payable	3 024	3 292	3 540	3 993	4 498	4 625	4 453	4 280
Capital transfers from non-residents	1 383	1 952	2 200	2 068	2 197	2 335	2 442	2 513
<b>Resources provided to non-residents</b>	<b>99 002</b>	<b>111 479</b>	<b>119 463</b>	<b>130 189</b>	<b>129 008</b>	<b>146 705</b>	<b>176 585</b>	<b>174 067</b>

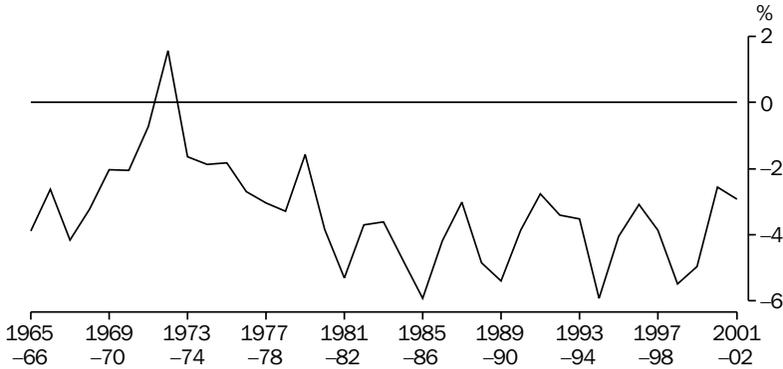
Source: Australian System of National Accounts, 2001-02 (5204.0).

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. The only exception to this pattern was in 1972-73 when Australia was a net lender to non-residents. Net borrowing from non-residents (i.e. negative net lending to non-residents), expressed as a proportion of GDP, increased significantly during the early-1980s and

has remained at relatively high levels since then. Graph 29.20 shows net lending to non-residents as a proportion of GDP since 1965-66.

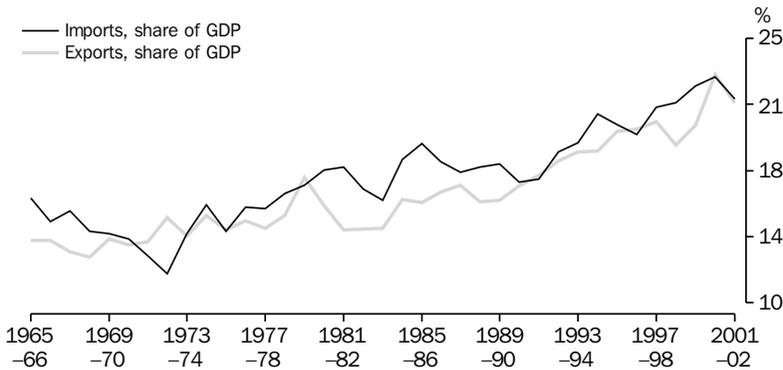
The importance of foreign trade to the Australian economy is illustrated by graph 29.21, which shows the ratios of exports and imports of goods and services to GDP for the financial years 1965-66 to 2001-02. In 2001-02 the import ratio was 21.6% and the export ratio was 21.4%.

### 29.20 NET LENDING TO NON-RESIDENTS, Share of GDP



Source: Australian System of National Accounts, 2001–02 (5204.0).

### 29.21 EXPORTS AND IMPORTS, Share of GDP



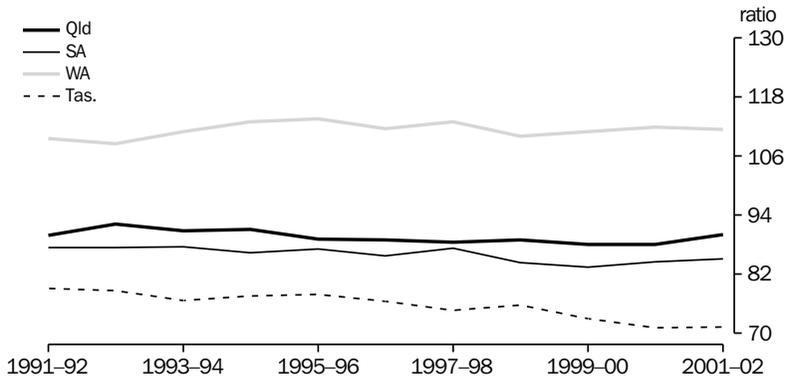
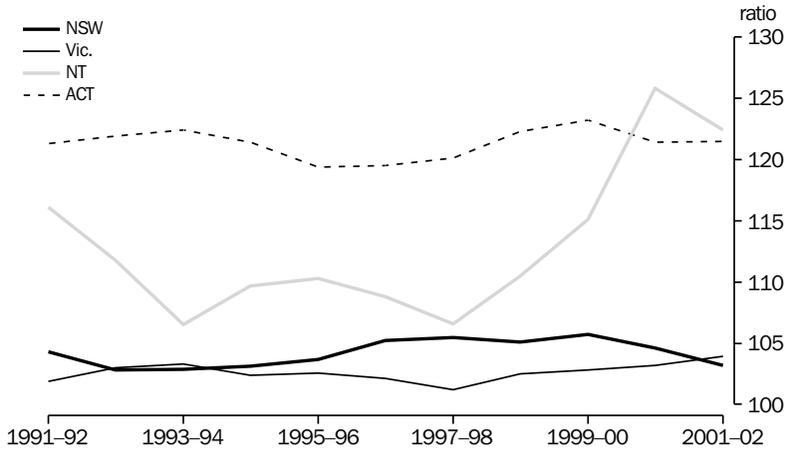
Source: Australian System of National Accounts, 2001–02 (5204.0).

## 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 gross state product (GSP) and state final demand. GSP is produced by summing the incomes generated in the production process (the income approach to measuring total production). State final demand is equal to the sum of government and household final consumption expenditure and public and private gross fixed capital formation. Estimates of state final demand and GSP are available in both current price and chain volume terms.

An important use of state accounts is to compare the performance of each state and territory. Graph 29.22 shows the ratio of GSP, in current prices, per head of mean population for each state and territory to the Australian value (GDP per head of mean population) since 1991–92. For New South Wales, Victoria, Western Australia, Northern Territory and Australian Capital Territory, GSP per head of mean population has been above the national average. For Queensland, South Australia and Tasmania, GSP per head of mean population has been below the national average.

## 29.22 GSP PER HEAD OF MEAN POPULATION(a)



(a) Aust. = 100.0.

Source: Australian National Accounts: State Accounts (5220.0).

## Input-output tables

### Basic structure

Input-Output (I-O) tables show the structure of a country's entire production system for a particular period, usually one year. They show which goods and services are produced by each industry and how they are used (e.g. some goods, such as cars, are sold to final consumers while others, such as steel, are used as inputs by other industries in producing more goods and services). The tables are based on the principle that the value of the output of each industry can be expressed as the sum of the values of all the inputs to that industry. These inputs include the use of the outputs of

other industries; any profits made from production; compensation of employees; and any taxes on production paid less any subsidies received. All the goods and services produced in a period are identified as being used as inputs by industries in their production process, being sold to final users of the goods and services (either in Australia, or overseas as exports), or contributing to the changes in inventories (an increase in inventories if more goods are produced than purchased, or a run-down in inventories if purchases exceed production). The net increase in inventories includes any timing difference between supply and use.

## Relationship to the national income and expenditure accounts

I-O tables are directly related to the GDP account. The income side of the GDP account shows the amount of income generated in the economy accruing to labour (in the form of compensation of employees) and to capital (as profits or, in national accounting terms, gross operating surplus and gross mixed income — the latter including some return to owners of businesses for their labour). The expenditure side of the account shows the value of goods and services entering into the various categories of final uses.

The I-O tables provide a much more detailed disaggregation of the GDP account than is available in the national income, expenditure and product accounts. The latter only shows details of the end results of economic activity, whereas the I-O tables show the flows of goods and services through the production process. The extra detail provided by the I-O tables is essential for many analyses.

### I-O table for seven industry sectors

Table 29.23 and diagram 29.24 show the flows of goods and services in respect of 1996–97.

The links between the table and the diagram are explained by working through the following formulae.

*Total intermediate use* — (\$482,483m) in the diagram is derived by summing from column 8 of the table: intermediate use (\$412,134m); taxes on products, net (\$13,378m); competing imports (\$56,890m); and complementary imports (\$81m).

*Domestic final use* — (\$530,600m) in the diagram is derived from the table by subtracting total exports (\$105,160m), column 12, from total final uses (\$635,760m), column 13.

*Imports* — (\$103,590m) is derived by summing from column 14 of the table: competing imports (\$103,257m); and complementary imports (\$333m). In the diagram it is dissected into imports for intermediate uses (\$56,971m); and imports for final uses (\$46,619m).

*Exports* — (\$105,160m) in the diagram is total exports, column 12 in the table.

*Total use* — (\$1,118,243m), which equals total supply, is the sum of domestic final use (\$530,600m); total intermediate use (\$482,483m); and exports (\$105,160m).

*Gross value added* — (\$493,377m) in the diagram is derived by summing from column 14 of the table: compensation of employees (\$257,193m); gross operating surplus and mixed income (\$213,534m); and other taxes on production (net) (\$22,650m).

*GDP (income measure)* — (\$532,170m) in the diagram is derived by summing from column 14 of the table: compensation of employees (\$257,193m); gross operating surplus and mixed income (\$213,534m); taxes on products (net) (\$38,793m); and other taxes on production (net) (\$22,650m).

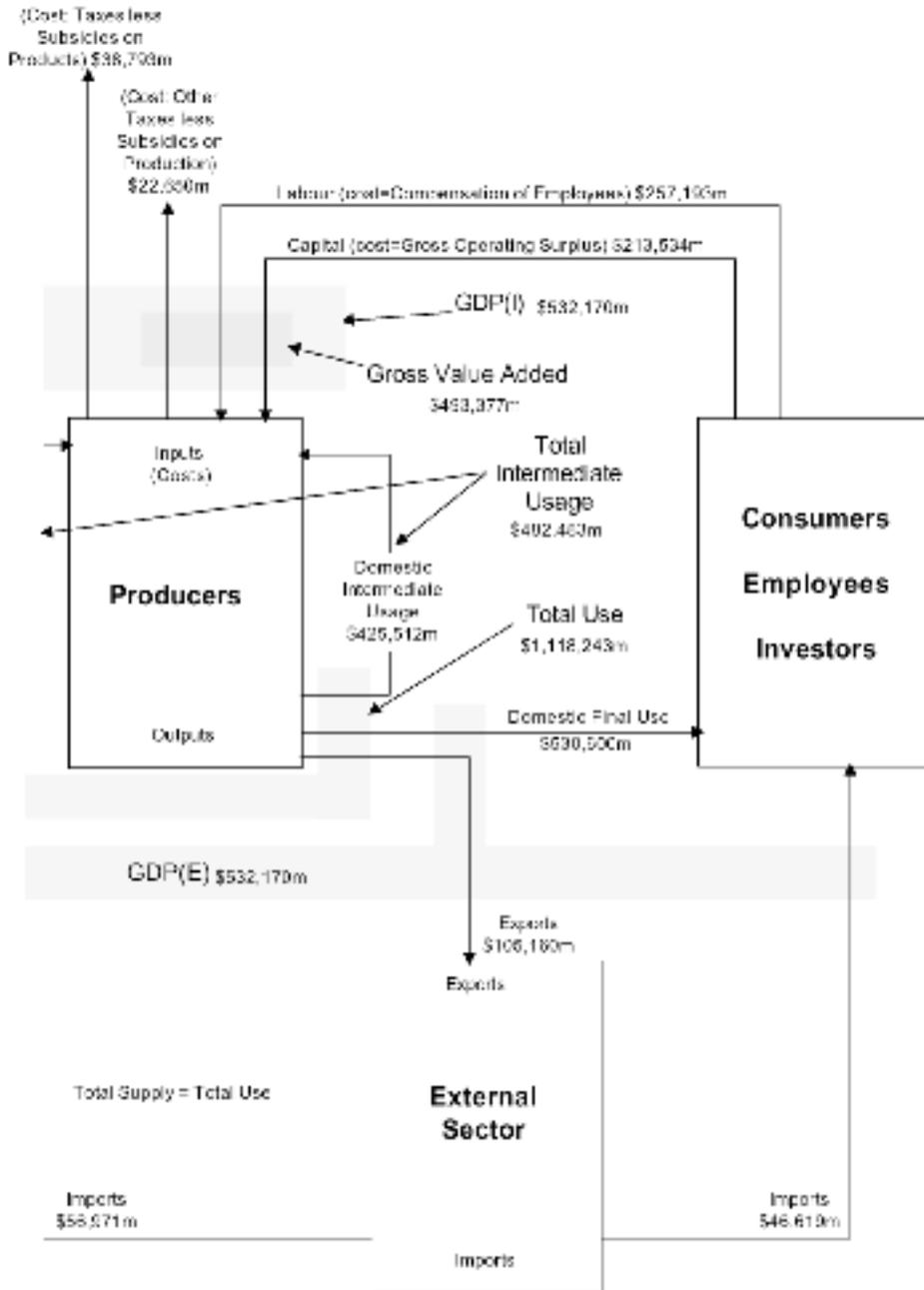
*GDP (expenditure measure)* — (\$532,170m) in the diagram is derived by summing domestic final use (\$530,600m); and exports (\$105,160m); and subtracting imports (\$103,590m).

**29.23 INDUSTRY BY INDUSTRY FLOW TABLE, Basic Values — 1996–97**

	1	2	3	4	5	6	7
	Agriculture	Mining	Manufacturing	Construction	Trade and transport	Service industries	Government admin. and defence
Supply	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Agriculture	4 071	16	13 710	123	283	1 304	52
Mining	42	3 851	9 719	651	238	2 897	96
Manufacturing	4 369	4 043	49 326	16 658	16 182	20 627	3 497
Construction	177	224	48	70	439	1 948	675
Trade and transportation	2 819	3 020	21 356	4 084	18 559	15 873	1 818
Service Industries	3 192	4 991	22 429	7 994	45 697	91 487	7 637
Government admin. and defence	53	226	578	120	1 260	1 100	2 505
<i>Intermediate use</i>	14 722	16 371	117 166	29 699	82 658	135 237	16 280
Compensation of employees	3 967	5 887	36 147	13 812	51 263	127 132	18 985
Gross operating surplus and gross mixed income	12 699	16 788	27 262	15 351	19 715	118 860	2 859
Taxes on products (net)	464	207	1 752	715	4 347	5 643	250
Other taxes on production (net)	588	499	2 505	700	4 053	11 054	29
Competing imports	1 641	2 015	28 646	3 406	5 793	13 548	1 842
Complementary imports	—	—	81	—	—	—	—
<b>Australian production</b>	<b>34 081</b>	<b>41 767</b>	<b>213 558</b>	<b>63 683</b>	<b>167 829</b>	<b>411 474</b>	<b>40 245</b>
	8	9	10	11	12	13	14
	Intermediate usage = Sum (1 to 7)	Final consumption expenditure	Gross fixed capital formation	Changes in inventories	Exports	Final demand = Sum (9 to 12)	Total supply = Sum (8+13)
	\$m	\$m	\$m	\$m	\$m	\$m	\$m
Agriculture	19 560	4 719	1 024	369	8 409	14 522	34 081
Mining	17 493	598	2 268	-2 428	23 835	24 274	41 767
Manufacturing	114 702	47 087	14 046	-495	38 219	98 856	213 558
Construction	3 581	2 964	57 048	-5	96	60 102	63 683
Trade and transportation	67 530	70 463	11 901	40	17 896	100 299	167 829
Service Industries	183 427	207 096	9 399	67	11 484	228 047	411 474
Government admin. and defence	5 842	33 847	405	—	151	34 403	40 245
<i>Intermediate use</i>	412 134	366 774	96 091	-2 452	100 090	560 503	972 637
Compensation of employees	257 193	—	—	—	—	—	257 193
Gross operating surplus and gross mixed income	213 534	—	—	—	—	—	213 534
Taxes on products (net)	13 378	20 262	3 352	158	1 643	25 415	38 793
Other taxes on production (net)	19 428	—	3 222	—	—	3 222	22 650
Competing imports	56 890	24 314	17 303	1 323	3 427	46 367	103 257
Complementary imports	81	111	151	-9	—	252	333
<b>Australian production</b>	<b>972 637</b>	<b>411 461</b>	<b>120 119</b>	<b>-980</b>	<b>105 160</b>	<b>635 760</b>	<b>1 608 397</b>
Gross value added	<b>490 155</b>	<b>..</b>	<b>3 222</b>	<b>..</b>	<b>..</b>	<b>3 222</b>	<b>493 377</b>
<b>Gross domestic product</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>532 170</b>

Source: Australian National Accounts: Input-Output Tables, 1996–97 (5209.0).

29.24 THE AUSTRALIAN ECONOMY, Flow of goods and services — 1996–97



Notes:

- (1) Flows are based on 1996–97 input-output tables.
- (2) This diagram shows the flows between producers and the rest of the economy. In this context a producer can also be a consumer (e.g. own account capital expenditure) or an investor.
- (3) The shaded areas identify the components that make up the main aggregates. Flows passing through the shaded areas are included in the calculation.

Source: Australian National Accounts: Input-Output Tables, 1996–97 (5209.0)

## Financial accounts

In addition to the national accounts, the ABS produces annual and quarterly 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 (*Chapter 26, Financial system*). National and sectoral financial accounts, which show major financial aggregates, are published annually in *Australian System of National Accounts* (5204.0) and quarterly in *Australian National Accounts: Financial Accounts* (5232.0).

## 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 major 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).

The 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 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 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.

## 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). Subsequently, estimates up to 2001–02 have been published in *Australian System of National Accounts* (5204.0) as released in November 2002 to complement the current price balance sheets already included in that publication. 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 inflation.

Volume estimates for the major categories of fixed asset stocks described as 'produced assets' — such as dwellings, other buildings and structures, and machinery and equipment — have been available for many years in the Australian national accounts. However, 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) have only recently become 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, equipment and standing timber, 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. The ABS calculates an annual volume index of an aggregate by dividing its value in one year with its value in the previous year, using the prices of the earlier of the two years — termed the base year — to derive the values for both years. Chain volume indexes are then derived by

multiplying successive annual volume indexes from a reference year to the current year. For example, starting with a year one reference year the chain volume index in year three is derived by multiplying the volume index for year one to year two by the volume index for year two to year three. ABS practice is to re-reference the chain indexes to the current price value of the aggregate in the year of the latest base year.

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 chain 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 in order to measure the purchasing power of the aggregate in question over a designated numeraire set of goods and services. Such measures are called 'real' estimates.

Real net worth has been derived by aggregating the chain volume estimates of the non-financial assets with the real estimates of financial assets less liabilities using the standard method of chain aggregation.

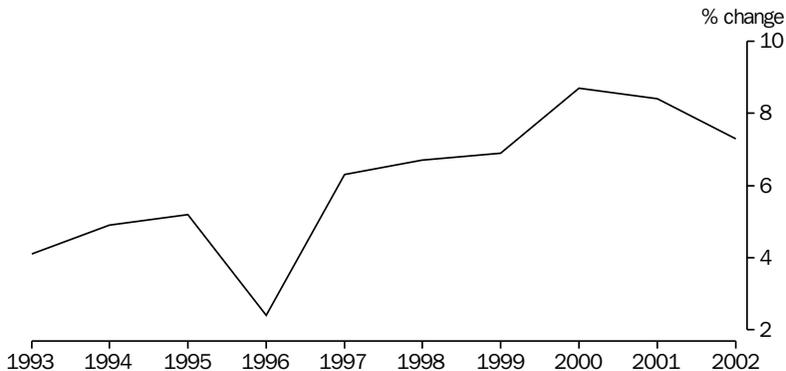
The ABS will continue to develop estimates of the value and volume of Australia's assets for inclusion in national balance sheets as additional data become available. Estimation techniques will be refined as research in Australia and abroad explores issues relating to the valuation of natural resources.

## Current price balance sheet estimates

Australia's net worth at 30 June 2002 is estimated at \$2,934.2b, an increase of \$198.9b (7.3%) since 30 June 2001. Of the increase, \$26.2b was due to transactions (both capital and financial), and \$172.6b was due to revaluations and other flows (including discoveries of subsoil assets). The average annual rise over the period 30 June 1989 to 30 June 2002 was 5.0%. However, net worth relative to annual GDP fell from 4.4:1 at the end of June 1989 to 4.1:1 at the end of June 2002. Graph 29.25 shows that the net worth series exhibited the strongest growth during the years 1996–97 to 2001–02 when average annual rates of at least 6% were achieved.

Total produced assets at 30 June 2002 are estimated at \$1,961.9b, an increase of 3.5% from the level at 30 June 2001 (table 29.26). The estimated value of produced assets rose at an average annual rate of 4.6% between 30 June 1989 and 30 June 2002 and consistently accounted for over 65% of net worth. Dwellings, other buildings and structures, and machinery and equipment, represent about 92% of total produced assets. While computer software has consistently accounted for less than 1% of total produced assets over the period, the series has exhibited by far the strongest growth of produced assets, with an average annual growth over the last fourteen years of 11.9%.

**29.25 CHANGE IN TOTAL NET WORTH — 30 June**



Source: Australian National Accounts: National Balance Sheet (5241.0.40.001).

**29.26 NATIONAL BALANCE SHEET, Current prices — 30 June**

	1995	1996	1997	1998	1999	2000	2001	2002
	$b	$b	$b	$b	$b	$b	$b	\$b
<b>Total assets</b>	<b>2 308.5</b>	<b>2 382.0</b>	<b>2 553.6</b>	<b>2 766.9</b>	<b>2 967.8</b>	<b>3 276.6</b>	<b>3 579.8</b>	<b>3 797.0</b>
<i>Non-financial assets</i>	2 123.7	2 188.6	2 323.8	2 467.4	2 642.7	2 850.5	3 096.3	3 324.7
<i>Produced assets</i>	1 402.7	1 447.5	1 497.4	1 570.2	1 665.9	1 775.7	1 896.2	1 961.9
<i>Fixed assets</i>	1 310.4	1 356.2	1 404.5	1 475.9	1 566.9	1 669.0	1 787.2	1 853.1
Dwellings	452.2	469.6	484.1	506.5	544.2	590.7	677.7	713.3
Other buildings and structures	571.6	596.7	622.4	652.6	692.1	728.2	749.4	765.3
Machinery and equipment	264.8	268.4	274.3	290.5	301.2	315.9	321.9	335.0
Livestock — fixed assets	10.3	9.6	10.9	12.1	12.7	14.1	14.9	14.8
Computer software	11.2	11.4	12.3	13.8	16.2	19.6	22.5	24.0
Entertainment, literary or artistic originals	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6
<i>Inventories</i>	92.3	91.3	92.9	94.3	99.0	106.7	109.0	108.8
Private non-farm(a)	72.5	71.2	73.0	73.1	77.1	84.0	86.7	86.2
Farm	6.4	6.8	6.8	7.0	6.7	6.8	7.1	6.9
Public authorities(b)	4.5	4.5	4.0	4.4	4.7	4.5	3.7	3.8
Livestock — inventories	3.1	2.7	2.5	2.7	3.1	3.6	3.9	4.4
Plantation standing timber	5.9	6.1	6.5	7.1	7.4	7.7	7.7	7.5
<i>Non-produced assets</i>	721.0	741.1	826.4	897.1	976.8	1 074.8	1 200.1	1 362.8
Land	625.5	643.3	710.1	768.9	834.9	906.5	991.4	1 107.8
Subsoil assets(c)	93.5	95.7	114.2	126.0	139.7	162.7	199.7	245.7
Native standing timber(c)	2.1	2.1	2.2	2.2	2.2	2.5	2.9	3.1
<i>Financial assets with the rest of the world(d)</i>	184.8	193.4	229.8	299.5	325.2	426.0	483.6	472.3
Monetary gold and SDRs	4.4	3.9	1.8	1.3	1.1	1.4	1.6	1.7
Currency and deposits	3.5	4.5	10.8	21.7	20.3	21.2	27.2	28.6
Securities other than shares	41.0	39.3	43.1	45.2	51.2	63.6	84.1	90.0
Loans and placements	22.3	26.8	30.3	37.3	38.1	39.8	50.7	49.4
Shares and other equity	107.3	111.7	135.5	180.3	196.0	282.1	298.2	278.4
Other accounts receivable	6.1	7.2	8.3	13.8	18.5	18.0	21.8	24.3
<b>Liabilities to the rest of the world(d)</b>	<b>440.3</b>	<b>468.7</b>	<b>519.9</b>	<b>596.5</b>	<b>646.8</b>	<b>752.5</b>	<b>844.6</b>	<b>862.8</b>
Currency and deposits	13.2	17.3	21.6	33.4	35.2	39.1	55.9	56.6
Securities other than shares	185.9	200.1	223.7	249.5	248.9	288.3	339.2	355.8
Loans and placements	63.3	52.2	51.3	56.6	66.6	85.0	94.3	102.0
Shares and other equity	172.0	193.2	217.1	249.5	287.0	330.8	345.8	339.1
Other accounts payable	5.8	6.0	6.3	7.5	9.1	9.4	9.4	9.3
<b>Net worth</b>	<b>1 868.2</b>	<b>1 913.3</b>	<b>2 033.7</b>	<b>2 170.4</b>	<b>2 321.0</b>	<b>2 524.0</b>	<b>2 735.3</b>	<b>2 934.2</b>
<b>Memorandum items</b>								
Consumer durables	116.3	119.1	117.2	120.7	121.8	124.2	129.8	134.2
Direct investment								
Foreign investment in Australia	128.7	140.0	150.8	162.4	174.5	195.7	201.1	n.a.
Australian investment abroad	70.8	74.2	89.0	125.6	129.5	178.3	181.8	n.a.
Non-rateable land	35.6	38.7	40.8	43.6	48.8	53.3	57.5	64.1

(a) Includes for all periods the marketing authorities privatised in July 1999. (b) Includes for all periods the remaining public marketing authorities. (c) These estimates are regarded as experimental. (d) Series break at 30 June 1995. See *Information Paper: Upgraded Australian National Accounts: Financial Accounts (5254.0)*.

Source: Australian System of National Accounts (5204.0).

## Real/volume balance sheet estimates

Table 29.27 presents real/volume balance sheet data for Australia. The data show that Australia's real net worth (total assets less total liabilities to the rest of the world) grew by 13.7% between 30 June 1995 and 30 June 2002, compared with an increase of 57.1% in current prices. This represents a real average annual growth rate of 2.2%.

Total assets, in real terms, grew by 24.4% during this period, driven mainly by increased volumes of dwellings (24.5%), machinery and equipment (30.4%), subsoil assets (23.6%), and real total financial assets with the rest of the world (123.6%). Real financial liabilities to the rest of the world increased by about 71.4% between 30 June 1995 and 30 June 2002.

**29.27 REAL/VOLUME BALANCE SHEET — 30 June**

	1995	1996	1997	1998	1999	2000	2001	2002
	$b	$b	$b	$b	$b	$b	$b	\$b
<b>Total assets</b>	<b>2 845.6</b>	<b>2 887.5</b>	<b>2 986.7</b>	<b>3 124.6</b>	<b>3 210.2</b>	<b>3 358.2</b>	<b>3 497.6</b>	<b>3 539.5</b>
<i>Non-financial assets</i>	2 658.2	2 693.1	2 751.5	2 812.6	2 873.1	2 923.8	3 018.7	3 083.3
<i>Produced assets</i>	1 579.0	1 634.9	1 665.7	1 709.4	1 755.9	1 800.4	1 886.0	1 930.0
<i>Fixed assets</i>	1 482.0	1 537.8	1 567.1	1 609.4	1 653.1	1 692.8	1 775.4	1 819.6
<i>Tangible fixed assets</i>	1 476.5	1 531.5	1 558.8	1 598.5	1 638.3	1 672.8	1 751.5	1 792.7
Dwellings	557.6	573.0	587.7	607.0	628.5	654.8	671.8	694.1
Other buildings and structures	664.1	676.3	690.7	706.2	724.0	737.2	745.2	754.6
Machinery and equipment	254.0	262.4	273.1	284.8	295.4	309.9	320.0	331.3
Livestock — fixed assets(a)	21.6	25.7	21.7	19.5	18.9	16.5	14.6	12.6
<i>Intangible fixed assets</i>	8.7	9.4	10.7	12.7	15.8	20.1	23.8	26.9
Computer software	8.0	8.7	10.0	11.8	14.8	19.0	23.2	26.3
Entertainment, literary or artistic originals	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6
<i>Inventories</i>	96.5	97.0	98.5	99.9	102.8	107.6	110.6	110.4
Private non-farm(b)	76.5	76.5	78.6	77.8	83.1	85.6	87.1	87.3
Farm	5.9	7.2	6.8	7.6	7.4	7.9	8.5	8.4
Public authorities	4.8	4.8	4.4	4.8	5.1	4.7	3.5	3.3
Livestock — inventories	4.0	4.0	3.9	3.7	3.7	3.8	3.6	3.6
Plantation standing timber	6.2	6.5	6.8	7.2	7.5	7.7	7.8	7.9
<i>Non-produced assets</i>	1 088.4	1 057.2	1 087.2	1 104.0	1 117.3	1 123.1	1 132.7	1 153.4
<i>Tangible non-produced assets</i>	1 088.4	1 057.2	1 087.2	1 104.0	1 117.3	1 123.1	1 130.0	1 150.9
Land	928.9	903.0	920.3	928.4	938.8	943.9	940.8	954.1
Subsoil assets(c)	153.9	148.9	162.4	171.6	174.9	176.2	182.9	190.2
Native standing timber(c)	2.8	2.6	2.6	2.6	2.4	2.6	2.8	3.0
Spectrum	—	—	—	—	—	1.7	3.4	3.5
<i>Intangible non-produced assets</i>	—	—	—	—	—	1.4	2.7	2.5
Spectrum licences	—	—	—	—	—	1.4	2.7	2.5
<i>Financial assets with the rest of the world(d)</i>	204.0	210.4	247.2	318.3	341.1	434.7	478.9	456.2
Monetary gold and SDRs	4.9	4.2	1.9	1.3	1.2	1.4	1.5	1.6
Currency and deposits	3.9	4.9	11.6	23.0	21.3	21.6	26.9	27.6
Securities other than shares	45.3	42.7	46.4	48.1	53.7	64.9	83.3	87.0
Loans and placements	24.7	29.2	32.6	39.6	39.9	40.6	50.2	47.7
Shares and other equity	118.5	121.6	145.8	191.6	205.6	287.8	295.4	268.9
Other accounts receivable	6.8	7.8	8.9	14.6	19.4	18.4	21.6	23.4
<b>Liabilities to the rest of the world(d)</b>	<b>486.2</b>	<b>509.9</b>	<b>559.3</b>	<b>633.8</b>	<b>678.5</b>	<b>767.9</b>	<b>836.4</b>	<b>833.5</b>
Currency and deposits	14.5	18.8	23.2	35.5	36.9	39.9	55.4	54.7
Securities other than shares	205.3	217.7	240.6	265.1	261.1	294.2	335.9	343.7
Loans and placements	69.9	56.8	55.2	60.1	69.9	86.7	93.4	98.5
Shares and other equity	190.0	210.2	233.5	265.1	301.0	337.5	342.5	327.6
Other accounts payable	6.4	6.5	6.8	8.0	9.6	9.6	9.3	9.0
<b>Net worth</b>	<b>2 379.3</b>	<b>2 394.5</b>	<b>2 439.7</b>	<b>2 497.7</b>	<b>2 535.4</b>	<b>2 590.7</b>	<b>2 661.2</b>	<b>2 706.0</b>

(a) Livestock — fixed assets included in the balance sheet include all animals and not just sheep and cattle as shown in the capital stock tables. (b) Includes for all periods the privatised marketing authorities. (c) Experimental — refer to *Real/volume balance sheets*. (d) Owing to the introduction of new international standards from 30 June 1995, estimates of financial assets and liabilities are not fully consistent with the estimates shown prior to this period. For more information on these changes see the 'Information Paper: Upgraded Australian National Accounts: Financial Accounts, June 1998' (5254.0).

Source: Australian System of National Accounts (5204.0).

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### Web sites

Australian Bureau of Statistics, <<http://www.abs.gov.au>>. National accounts theme page can be found by selecting 'Themes' and then selecting 'National Accounts' under the section headed 'Economy'. Access is provided to the latest national accounts estimates and publications. Also included are links to related economic information both internal and external to the Australian Bureau of Statistics.

Australian Government Department of the Treasury, <<http://www.treasury.gov.au>>. The Treasury web site provides departmental and business information relevant to the Treasury. The site also includes links to related web sites in which the Treasury provides more detailed information.

International Monetary Fund (IMF), <<http://www.imf.org>>. Contains information related to the IMF and its member countries. Information is included on the IMF's policies and practises as well as detailed information on the IMF's relationships with each individual member country.

Organisation for Economic Co-operation and Development (OECD), <<http://www.oecd.org>>. In addition to providing an overview of the history and structure of the organisation, this web site contains information on OECD publications and statistics which relate to a broad range of economic and social issues. Individual country surveys and reviews can also be found.

Reserve Bank of Australia, <<http://www.rba.gov.au>>. The Reserve Bank web site contains information on its various functions including monetary policy and system stability. There are also updates on Australia's major economic indicators and a news archive containing relevant media releases and a range of publications on its operations and research.



## INTERNATIONAL ACCOUNTS AND TRADE

This chapter presents statistics on Australia's international accounts, covering exports and imports of goods, international trade in services, international investment transactions, and levels of Australia's foreign financial assets and liabilities. Statistics are also provided on foreign ownership of equity in Australian enterprises.

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 for the purposes of domestic and international macroeconomic analysis and policy determination. They are also used by governments, government agencies, businesses, industry associations, research institutions and others to analyse patterns of trade and assess particular types of transactions and financial claims and liabilities between Australian residents and non-residents, for purposes such as trade promotion and negotiations, and market and industry performance studies.

## International accounts

International accounts cover the closely related and integrated balance of payments and international investment position statistics. Diagram 30.1 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 residents of other countries. Residents, who may be people or businesses, need not be Australian nationals. Transactions cover the provision (changes in ownership) of goods, services, income, financial claims on and liabilities to the rest of the world, and transfers (such as gifts) without anything provided in exchange.

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 with information on increases and decreases in the levels of these assets and liabilities as a result of the changes due to transactions (investment flows, including reinvestment of earnings) as shown in the financial account of the balance of payments, together with the other changes that affect either the value of the stock (price, exchange rate) or the volume (other adjustments) of the stock of financial assets and liabilities.

### Conceptual framework

Australia's international accounts statistics, which cover both the balance of payments and the international investment position, are compiled in accordance with international statistical standards as defined in the fifth edition of the International Monetary Fund's *Balance of Payments Manual (BPM5)*. The concepts of residency, transactions, valuation and time of recording are common to the balance of payments and international investment position statistics.

The balance of payments accounts, which present systematically the economic transactions between Australia and the rest of the world, incorporate four types of economic transactions. The first involves the provision of real resources, that is, transactions in goods, services and income. The second involves the

provision of financial resources, that is, foreign financial assets and liabilities. The third covers those one-sided transactions of a current nature (described as current transfers) that are offsets to transactions in current real or financial resources undertaken without an exchange. Current resources are not associated with, nor finance, fixed assets. For example, famine relief, whether in cash or in kind, would have its offset in current transfers. The fourth type is capital transfers that offset transactions undertaken, without exchange, in fixed assets or in their financing (such as development aid). For example, migrants' funds represent the shift of the migrants' net worth to or from Australia, and 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 this system, credit entries, which are shown with no arithmetic sign, are used to record the provision of real or financial resources. Credit entries are therefore required for exports of goods and services, and for income earned by residents (a return for providing the use of financial capital to non-residents, or for providing the labour of Australian residents). Credit entries are also required for providing financial resources to the rest of the world, either as new liabilities (such as issuing bonds), or through returning existing foreign assets (such as selling foreign equity securities to non-residents). Therefore, any credit entry in the financial account will reflect either an increase in Australia's foreign liabilities (more foreign debt or foreign ownership), or a decrease in Australia's foreign financial assets (such as a run-down in foreign exchange reserves).

Conversely, debit entries, which are identified by a minus sign (-), are used to record the provision by the rest of the world of real or financial resources to Australia, and are shown against imports of goods and services, income earned from Australia by non-residents, and financial transactions involving either an increase in foreign financial assets or a decrease in foreign liabilities.

### 30.1 RELATIONSHIP BETWEEN THE BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION STATEMENTS

#### Balance of Payments

<p><b>CURRENT ACCOUNT</b></p> <p><b>Goods</b> Credits Debits</p> <p><b>Services</b> Credits Debits</p> <p><b>Income</b> Credits Debits</p> <p><b>Current transfers</b> Credits Debits</p> <p><b>Balance on Current Account</b></p>
<p><b>CAPITAL ACCOUNT</b></p> <p>Capital transfers Acquisition/disposal of non-produced, non-financial assets</p> <p><b>Balance on Capital Account</b></p>

Investment income from International Investment

<b>International Investment Position</b>	<p><b>Position at Beginning of Period</b></p> <p><b>Australian Investment Abroad</b> Direct investment Portfolio investment Financial derivatives Other investment Reserve assets</p> <p><b>Foreign Investment in Australia</b> Direct investment Portfolio investment Financial derivatives Other investment</p> <p><b>Net International Investment Position</b></p>	<p><b>FINANCIAL ACCOUNT</b></p> <p><b>Transaction Changes</b></p> <p><b>Direct Investment</b> Abroad In Australia</p> <p><b>Portfolio Investment</b> Assets Liabilities</p> <p><b>Financial Derivatives</b> Assets Liabilities</p> <p><b>Other Investment</b> Assets Liabilities</p> <p><b>Reserve Assets</b></p> <p><b>Balance on Financial Account</b></p>	<p><b>Other Changes in Position Reflecting:</b></p> <table border="1"> <tr> <td>Price Changes</td> <td>Exchange Rate Changes</td> <td>Other Adjustments</td> </tr> </table>			Price Changes	Exchange Rate Changes	Other Adjustments	<p><b>Position at End of Period</b></p> <p><b>Australian Investment Abroad</b> Direct investment Portfolio investment Financial derivatives Other investment Reserve assets</p> <p><b>Foreign Investment in Australia</b> Direct investment Portfolio investment Financial derivatives Other investment</p> <p><b>Net International Investment Position</b></p>
	Price Changes	Exchange Rate Changes	Other Adjustments						
	<p><b>Net errors and omissions</b> (the sum, with sign reversed, of the balances on the current, capital and financial accounts)</p>								

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 due as payment for the export. Any entries that are not automatically paired in a transaction, that is, for which there is no 'quid pro quo', are matched by special offsetting entries. Such offsetting entries are made in the categories 'current transfers' (when offsetting the provision of current resources such as food for famine relief) and 'capital transfers' (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 and other changes 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 and other changes 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, using current replacement cost estimates of depreciation and excluding holding gains and losses. Current 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 transactions to ensure that they are recorded in the time period in which change of ownership occurs.

International investment position statistics provide information on the levels (stock) of Australia's foreign financial assets and liabilities. The investment position at the end of a period reflects the foreign financial asset and liability positions at the start of the period, and the financial transactions (investment flows) from the balance of payments which increase or decrease these assets and liabilities, together with the non-transaction changes due to exchange rate effects, other price effects and changes in the volume of these assets and liabilities that are not due to transactions (such as debt write-off).

While the international investment position statistics form an integral part of Australia's balance of payments (diagram 30.1), 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. By convention, this is generally taken to be the time at which the event is recorded in the books.

## Classifications

In the following tables, estimates are presented 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, goods credits are shown separately from 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, income and current transfers. Goods are classified into five main components: general merchandise; goods for processing; goods procured in ports by carriers; repairs on goods; and non-monetary gold. Changes of ownership from residents to non-residents are recorded as credits (also referred to as exports), and changes from non-residents to residents are recorded as debits (also referred to as imports). Services, comprising 11 primary components, cover services provided by Australian residents to non-residents (credits) and by non-residents to residents (debits), together with transactions in a few types of goods (e.g. goods purchased by travellers). 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). Current transfers cover the offsetting entries required when resources are provided, without something of economic value being received in return. When non-residents provide something to Australian residents, offsetting credits are required; when residents provide resources to non-residents, offsetting debits are required. General government transfers (e.g. official foreign aid) are distinguished from transfers by other sectors.

The capital account covers capital transfers (such as migrants' funds), distinguished between general government and other sectors, and the acquisition/disposal of non-produced, non-financial assets.

The financial account shows transactions in foreign financial assets and liabilities. The primary split is by functional type of capital (direct investment, portfolio investment, financial derivatives, other investment and reserve assets) further split into assets and liabilities (where appropriate). 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 used.

The primary distinction used in international investment position statistics is between assets and liabilities. Assets primarily represent Australian investment abroad, and liabilities primarily

represent foreign investment in Australia. The difference between the two represents the net international investment position (graph 30.8 and table 30.9). Australian investment abroad refers to the stock of foreign financial assets owned by Australian residents, after netting off any liabilities of Australian direct investors to their direct investment enterprises abroad. Conversely, foreign investment in Australia refers to the stock of financial assets in Australia owned by non-residents, after netting off any claims of Australian direct investment enterprises on their foreign direct investors. The first breakdown below this asset/liability dichotomy is by functional type of capital, with details of the instruments of investment (table 30.11), the resident sectors and contractual maturities involved.

While many types of instruments of investment can be identified, similar instruments are combined for analytical reasons and ease of reporting. Some of those instruments are:

*Equity capital* — which includes ordinary and participating preference shares, units in trusts and net equity in branches.

*Reinvestment of earnings of direct investors* — which refers to income retained within the enterprise from after-tax profits that is attributable to direct investors.

*Debt securities* — which include longer term, generally tradable security instruments such as bonds and debentures, with a contractual maturity of more than one year after issue, together with money market instruments (e.g. bills, commercial finance paper, negotiable certificates of deposit) with a contractual maturity of one year or less.

*Trade credits* — which cover the direct extension by suppliers and buyers for goods and services, including advances for work in progress or to be undertaken.

*Loans* — which cover the direct lending of funds either without a security evidencing the transaction, or with non-negotiable documentation. They include financial leases.

*Deposits* — which comprise both transferable and other deposits.

*Other assets and liabilities* — which consist of miscellaneous accounts in respect of interest, dividends, etc.

## Statistical overview

As shown in table 30.2, the balance on current account for 2002–03 was a deficit of \$42.5b, an increase of \$20.5b (94%) on the previous year. The deficit on goods and services was \$19.7b, an increase of \$18.0b on the 2001–02 deficit of \$1.6b. The main contributing factors were the decrease in goods credits of \$5.2b, down from \$121.1b in 2001–02 to \$115.9b in 2002–03 and the \$12.3b increase in goods debits, from \$121.9b in 2001–02 to \$134.2b in 2002–03. The net goods deficit rose by \$17.4b, the net services deficit by \$0.6b and the net income deficit by \$2.3b on the previous year.

The surplus on capital account increased by \$0.3b (28%) to \$1.3b in 2002–03.

The balance on financial account recorded a net inflow of \$41.6b, up \$20.5b (98%) on the previous year. Direct investment recorded a net outflow of \$10.6b, a \$6.6b increase on the net outflow of \$4.0b in 2001–02. A fall in the net outflow on Australian direct investment abroad of \$9.2b to \$11.0b was partly offset by a fall of \$2.5b in the inflow of direct investment into Australia. The net inflow on portfolio investment increased \$12.1b (138%) while other investment also rose by \$9.6b. Reserve assets and Financial derivatives fell \$6.4b and \$1.3b, respectively.

### 30.2 BALANCE OF PAYMENTS, Summary

	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Current account</b>	<b>-22 807</b>	<b>-33 607</b>	<b>-32 320</b>	<b>-18 334</b>	<b>-21 938</b>	<b>-42 463</b>
<i>Goods and services</i>	-4 738	-14 428	-14 289	875	-1 648	-19 688
Credits	113 744	112 025	126 034	153 511	152 290	147 269
Debits	-118 482	-126 453	-140 323	-152 636	-153 938	-166 957
<i>Goods</i>	-3 546	-12 644	-12 945	-30	-792	-18 236
Credits	88 538	85 783	97 665	120 307	121 090	115 925
Debits	-92 084	-98 427	-110 610	-120 337	-121 882	-134 161
<i>Services</i>	-1 192	-1 784	-1 344	905	-856	-1 452
Credits	25 206	26 242	28 369	33 204	31 200	31 344
Debits	-26 398	-28 026	-29 713	-32 299	-32 056	-32 796
<i>Income</i>	-18 091	-18 430	-18 249	-19 241	-20 273	-22 555
Credits	10 384	10 288	13 769	16 203	15 147	14 094
Debits	-28 475	-28 718	-32 018	-35 444	-35 420	-36 649
<i>Current transfers</i>	22	-749	218	32	-17	-220
Credits	3 993	4 498	4 625	4 453	4 280	4 233
Debits	-3 971	-5 247	-4 407	-4 421	-4 297	-4 453
<b>Capital and financial account</b>	<b>25 769</b>	<b>31 281</b>	<b>32 112</b>	<b>16 386</b>	<b>22 067</b>	<b>42 889</b>
<i>Capital account</i>	1 127	1 167	1 053	1 109	1 016	1 298
<i>Capital transfers</i>	1 097	1 186	1 136	1 182	1 186	1 431
Credits	2 068	2 197	2 335	2 442	2 543	2 724
Debits	-971	-1 011	-1 199	-1 260	-1 357	-1 293
Net acquisition/disposal of non-produced, non-financial assets	30	-19	-83	-73	-170	-133
<i>Financial account</i>	24 642	30 114	31 059	15 277	21 051	41 591
<i>Direct investment</i>	2 852	4 747	9 804	2 496	3 992	10 640
Abroad	-7 435	-3 253	-3 343	-9 736	-20 187	-11 009
In Australia	10 287	8 000	13 147	12 232	24 179	21 649
Portfolio investment	21 164	6 455	13 033	17 863	8 725	20 790
Financial derivatives	-2 828	2 748	470	-538	358	-977
Other investment	2 996	16 558	10 374	4 336	7 199	16 756
Reserve assets	458	-394	-2 622	-8 880	777	-5 618
<b>Net errors and omissions</b>	<b>-2 962</b>	<b>2 326</b>	<b>208</b>	<b>1 948</b>	<b>-129</b>	<b>-426</b>

Source: Balance of Payments and International Investment Position, Australia (5302.0).

Graph 30.3 illustrates the differing influences of the trade balance and the net income deficit on the balance on current account. The net income deficit rose from \$7b in 1986–87 to between \$18–\$20b each year from 1995–96 to 2001–02. In 2002–03 the deficit rose to \$22.6b. The underlying level of net income continues to drive the level and direction of the current account deficit, as Australia continues to service its external liabilities. However, the trade deficit has fluctuated quite significantly over the past 20 years, moving from surpluses of \$2b to a deficit of almost \$20b in 2002–03.

Table 30.4 shows the annual levels of Australia’s official reserve assets and both the end of year and period average exchange rates for the major currencies, special drawing rights, and the trade weighted index.

### International trade in goods and services (balance of payments basis)

Australia’s international trade in goods and services for the six years to 2002–03 is shown in tables 30.5 (exports or credits) and 30.6 (imports or debits). The tables provide both current price and chain volume measures.

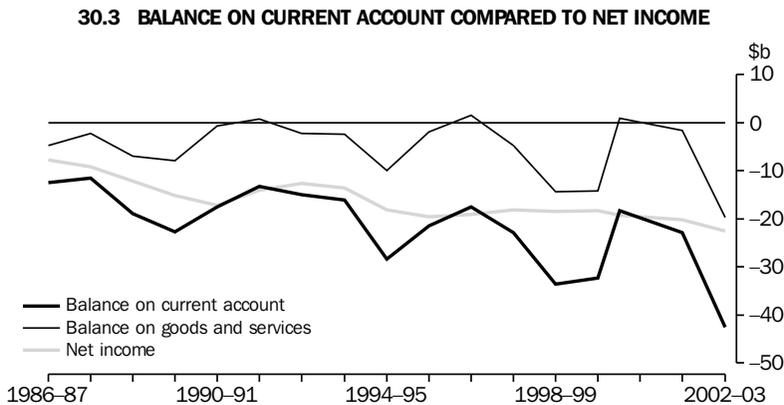
The components of merchandise goods shown in tables 30.5 and 30.6 are defined in terms of groupings of items in the United Nations (UN)

Broad Economic Categories (BEC) for credits, and a version of the BEC for Balance of Payments purposes modified for debits.

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.

The current price value of a transaction may be expressed conceptually as the product of a price and quantity. The value of the transaction in chain volume measures may then be thought of as being derived by substituting, for the current price, the corresponding price in the chosen reference year.

There are, however, many transactions recorded in statistics of international trade in goods and services for which it is not possible to apply such an approach. In such cases it is necessary to make assumptions and approximations (e.g. revaluing by means of the price index which is considered to be most closely related to the commodity involved). The published chain volume measures should be viewed in this light. For more information on chain volume measures refer to *Information Paper: Introduction of Chain Volume Measures in the Australian National Accounts* (5248.0).



Source: *Balance of Payments and International Investment Position, Australia* (5302.0).

### 30.4 RESERVE ASSETS AND EXCHANGE RATES

	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
RESERVE ASSETS(a) (\$m)						
<b>Total reserve assets</b>	<b>-24 260</b>	<b>-23 954</b>	<b>-27 948</b>	<b>-37 951</b>	<b>-37 435</b>	<b>-40 759</b>
Monetary gold	-1 236	-1 013	-1 233	-1 367	-1 445	-1 329
Special drawing rights	-25	-88	-141	-197	-216	-226
Reserve position in IMF	-1 449	-2 338	-2 225	-2 412	-2 992	-3 185
<i>Foreign exchange</i>	<i>-21 550</i>	<i>-20 515</i>	<i>-24 349</i>	<i>-33 975</i>	<i>-32 782</i>	<i>-36 019</i>
Currency and deposits	-11 675	-7 971	-9 148	-11 340	-11 761	-10 253
Securities	-9 875	-12 544	-15 143	-22 562	-21 137	-25 758
Financial derivatives (net)	n.a.	n.a.	-58	-73	116	-8
EXCHANGE RATES						
End of period(a)						
United States dollar	0.6135	0.6596	0.5986	0.5075	0.5248	0.5952
United Kingdom pound	0.3681	0.4188	0.3941	0.3603	0.3573	0.3719
Euro	..	0.6379	0.6282	0.6002	0.5737	0.5587
Japanese yen	86.16	79.66	63.19	62.94	65.94	71.29
Special drawing right	0.4617	0.4932	0.4481	0.4076	0.4105	0.4373
Period average(b)						
United States dollar	0.6808	0.6276	0.6289	0.5379	0.5239	0.5847
United Kingdom pound	0.4138	0.3824	0.3948	0.3704	0.3632	0.3685
Euro	..	..	0.6278	0.6023	0.5850	0.5577
Japanese yen	86.02	77.81	67.90	61.49	66.10	70.01
Special drawing right	0.5026	0.4589	0.4642	0.4177	0.4135	0.4313
TRADE-WEIGHTED INDEX OF VALUE OF THE AUSTRALIAN DOLLAR(c)						
End of period(a)	57.9	58.4	53.3	49.7	50.4	54.2
Period average(b)	58.3	56.0	55.2	50.3	50.8	53.5

(a) As at 30 June. (b) These period average exchange rates and index numbers are derived by averaging figures for each trading day. (c) May 1970 = 100.0. The trade weighted index is reweighted annually and on special occasions as required.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

In current price terms the balance on goods and services recorded a deficit of \$19.7b in 2002-03, a significant increase on the \$1.6b deficit recorded in 2001-02. Between these two years, goods and services credits fell \$5.0b to \$147.3b (down 3.3%) while debits rose by \$13.0b to \$167.0b (up 8.5%).

Over the same period goods credits fell \$5.3b (4.3%) to \$115.9b, with rural goods falling \$4.6b and non-rural goods down by \$1.6b. Goods debits rose by \$12.3b to \$134.2b (10.1%) with Consumption goods increasing by \$3.8b, Capital

goods by \$4.2b and Intermediate and Other Merchandise goods by \$3.7b. In Capital goods, Civil aircraft rose by \$2.4b to \$3.9b with ADP equipment falling slightly (2.9%) to \$4.9b in 2002-03.

More detailed information on exports and imports of goods, on a merchandise trade basis without adjustment for balance of payments purposes and trade in services, are shown later in this chapter.

### 30.5 GOODS AND SERVICES CREDITS

	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
	\$m	\$m	\$m	\$m	\$m	\$m
AT CURRENT PRICES						
<b>Goods and services credits</b>	<b>113 744</b>	<b>112 025</b>	<b>126 034</b>	<b>153 511</b>	<b>152 290</b>	<b>147 269</b>
<i>Goods credits</i>	88 538	85 783	97 665	120 307	121 190	115 925
General merchandise	80 571	78 323	90 110	112 897	113 471	107 232
Rural goods	22 130	21 862	23 617	29 164	30 085	25 474
Meat and meat preparations	3 731	4 008	4 467	5 796	6 246	5 655
Cereal grains and cereal preparations	5 094	5 046	4 941	5 937	6 481	4 486
Wool and sheepskins	4 020	2 583	2 963	3 897	3 687	3 548
Other rural	9 285	10 225	11 246	13 534	13 671	11 785
Non-rural goods	58 441	56 461	66 493	83 733	83 386	81 758
Metal ores and minerals	10 835	11 037	11 760	15 205	14 774	14 471
Coal, coke and briquettes	9 586	9 288	8 336	10 844	13 430	11 995
Other mineral fuels	5 309	4 461	9 082	13 464	10 940	11 071
Metals (excl. non-monetary gold)	7 185	6 984	8 810	10 146	9 650	8 691
Machinery	7 549	6 569	7 133	8 797	7 999	7 352
Transport equipment	3 412	3 343	4 597	5 041	5 686	6 280
Other manufactures	9 834	10 273	11 539	13 530	13 758	13 503
<i>Other non-rural (incl. sugar)</i>	4 731	4 506	5 236	6 706	7 149	8 395
Beverages	993	1 176	1 515	1 931	2 287	2 601
Sugar, sugar preparations and honey	1 939	1 472	1 229	1 330	1 610	1 363
Other	1 799	1 858	2 492	3 445	3 252	4 431
Other goods	7 967	7 460	7 555	7 410	7 619	8 693
<i>Services credits</i>	25 206	26 242	28 369	33 204	31 200	31 344
CHAIN VOLUME MEASURES(a)(b)						
<b>Goods and services credits</b>	<b>129 141</b>	<b>131 772</b>	<b>144 100</b>	<b>154 528</b>	<b>152 290</b>	<b>151 259</b>
<i>Goods credits</i>	100 938	102 691	113 565	120 367	121 090	120 805
General merchandise	91 184	93 754	104 533	112 506	113 470	112 409
Rural goods	25 204	26 979	29 718	31 169	30 085	26 232
Meat and meat preparations	5 322	5 649	5 766	6 519	6 246	6 318
Cereal grains and cereal preparations	5 761	6 653	6 640	6 371	6 481	4 407
Wool and sheepskins	4 072	3 453	4 051	4 229	3 687	2 956
Other rural	10 150	11 407	13 304	14 059	13 672	12 550
Non-rural goods	66 151	66 691	75 005	81 458	83 386	86 176
Metal ores and minerals	12 394	12 725	13 014	14 229	14 774	15 561
Coal, coke and briquettes	11 034	11 423	11 959	13 107	13 430	14 070
Other mineral fuels	9 136	8 753	10 349	11 129	10 940	10 267
Metals (excl. non-monetary gold)	7 298	9 135	8 945	9 013	9 650	8 955
Machinery	6 930	6 253	7 069	8 526	7 998	7 877
Transport equipment	4 044	3 897	5 317	5 237	5 686	6 526
Other manufactures	10 251	10 696	12 284	13 483	13 758	14 060
<i>Other non-rural (incl. sugar)</i>	5 044	4 956	6 044	6 669	7 148	8 859
Beverages	1 103	1 221	1 628	1 937	2 287	2 739
Sugar, sugar preparations and honey	1 978	1 667	1 800	1 421	1 610	756
Other	1 954	2 065	2 716	3 291	3 252	1 886
Other goods	9 870	8 951	9 120	7 882	7 618	8 397
<i>Services credits</i>	28 273	29 147	30 696	34 239	31 200	30 458

(a) Reference year is 2001-02. (b) Chain volume measures are not additive for most periods; the component measures do not sum to a total in the same way as the corresponding current price components do.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

### 30.6 GOODS AND SERVICES DEBITS

	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
	\$m	\$m	\$m	\$m	\$m	\$m
AT CURRENT PRICES						
<b>Goods and services debits</b>	<b>-118 482</b>	<b>-126 453</b>	<b>-140 323</b>	<b>-152 636</b>	<b>-153 938</b>	<b>-166 957</b>
<i>Goods debits</i>	-92 084	-98 427	-110 610	-120 337	-121 882	-134 161
General merchandise	-87 521	-94 389	-106 549	-115 979	-116 742	-128 517
Consumption goods	-25 899	-28 041	-30 781	-35 775	-37 422	-41 233
Food and beverages, mainly for consumption	-3 282	-3 606	-3 943	-4 483	-4 687	-5 066
Household electrical items	-2 062	-2 245	-2 456	-3 000	-3 166	-3 658
Non-industrial transport equipment	-7 102	-7 231	-7 735	-9 627	-9 930	-11 034
Textiles, clothing and footwear	-3 456	-3 739	-4 232	-4 811	-4 849	-5 238
Toys, books and leisure goods	-2 956	-3 184	-3 238	-3 359	-3 494	-3 740
Consumption goods n.e.s.	-7 041	-8 036	-9 177	-10 495	-11 296	-12 227
Capital goods	-21 168	-23 055	-26 695	-25 552	-27 148	-31 392
Machinery and industrial equipment	-8 862	-9 226	-8 912	-8 876	-9 502	-11 007
ADP equipment	-4 345	-4 496	-4 912	-5 260	-5 055	-4 908
Telecommunications equipment	-2 070	-2 812	-4 150	-4 379	-3 643	-3 619
Civil aircraft	-464	-649	-1 414	-609	-1 513	-3 887
Industrial transport equipment n.e.s.	-2 560	-2 860	-3 981	-2 753	-3 553	-3 746
Capital goods n.e.s.	-2 867	-3 012	-3 326	-3 675	-3 882	-4 225
Intermediate and other merchandise goods	-40 454	-43 293	-49 073	-54 652	-52 172	-55 892
Food and beverages, mainly for industry	-746	-758	-731	-592	-577	-736
Primary industrial supplies n.e.s.	-950	-882	-1 117	-1 133	-1 117	-1 220
Fuels and lubricants	-4 276	-4 428	-7 450	-10 358	-8 823	-10 400
Parts for transport equipment	-5 346	-6 085	-6 874	-7 089	-6 827	-7 270
Parts for ADP equipment	-1 993	-1 944	-1 936	-2 255	-2 159	-2 012
Other parts for capital goods	-7 193	-7 692	-8 008	-9 072	-8 216	-8 607
Organic and inorganic chemicals	-2 814	-3 139	-3 572	-3 777	-3 447	-3 089
Paper and paperboard	-1 901	-1 978	-2 207	-2 311	-2 225	-2 326
Textile yarn and fabrics	-2 005	-2 006	-1 987	-1 863	-1 830	-1 839
Iron and steel	-1 623	-1 470	-1 509	-1 437	-1 765	-1 961
Plastics	-1 814	-1 889	-2 037	-2 193	-2 182	-2 479
Processed industrial supplies n.e.s.	-9 431	-10 140	-10 772	-11 252	-11 441	-12 244
Other merchandise goods	-362	-882	-873	-1 320	-1 563	-1 709
Other goods	-4 563	-4 038	-4 061	-4 358	-5 140	-5 644
<i>Services debits</i>	-26 398	-28 026	-29 713	-32 299	-32 056	-32 796

For footnotes see end of table.

...continued

**30.6 GOODS AND SERVICES DEBITS — *continued***

	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
	\$m	\$m	\$m	\$m	\$m	\$m
CHAIN VOLUME MEASURES(a)(b)						
<b>Goods and services debits</b>	<b>-129 378</b>	<b>-135 621</b>	<b>-152 548</b>	<b>-150 605</b>	<b>-153 939</b>	<b>-175 191</b>
<i>Goods debits</i>	-98 338	-104 220	-118 862	-117 629	-121 882	-141 651
General merchandise	-93 007	-99 604	-114 106	-113 109	-116 741	-136 043
Consumption goods	-28 619	-29 597	-33 320	-36 256	-37 423	-42 931
Food and beverages, mainly for consumption	-3 339	-3 672	-4 105	-4 485	-4 686	-5 014
Household electrical items	-2 132	-2 273	-2 566	-2 970	-3 166	-3 988
Non-industrial transport equipment	-8 246	-8 040	-8 549	-10 065	-9 930	-11 616
Textiles, clothing and footwear	-4 038	-4 145	-4 855	-5 035	-4 849	-5 602
Toys, books and leisure goods	-3 456	-3 369	-3 563	-3 346	-3 494	-4 032
Consumption goods n.e.s.	-7 547	-8 172	-9 729	-10 396	-11 296	-12 682
Capital goods	-19 829	-22 119	-27 323	-24 822	-27 148	-34 788
Machinery and industrial equipment	-10 326	-9 884	-9 803	-8 991	-9 502	-11 941
ADP equipment	-2 150	-2 909	-4 054	-4 331	-5 055	-6 288
Telecommunications equipment	-1 784	-2 673	-4 130	-4 289	-3 643	-4 056
Civil aircraft	-632	-757	-1 653	-643	-1 513	-4 129
Industrial transport equipment n.e.s.	-2 888	-3 060	-4 256	-2 784	-3 553	-3 868
Capital goods n.e.s.	-3 378	-3 403	-3 749	-3 794	-3 882	-4 507
Intermediate and other merchandise goods	-44 805	-47 993	-53 303	-52 001	-54 172	-58 325
Food and beverages, mainly for industry	-490	-515	-638	-597	-577	-606
Primary industrial supplies n.e.s.	-936	-896	-1 200	-1 113	-1 118	-1 218
Fuels and lubricants	-7 724	-8 833	-8 422	-8 302	-8 823	-9 353
Parts for transport equipment	-6 477	-6 796	-7 642	-7 276	-6 827	-7 679
Parts for ADP equipment	-995	-1 558	-1 601	-1 862	-2 160	-2 558
Other parts for capital goods	-7 111	-7 427	-8 397	-8 892	-8 215	-9 402
Organic and inorganic chemicals	-2 965	-3 347	-4 122	-3 813	-3 447	-3 488
Paper and paperboard	-2 336	-2 247	-2 544	-2 344	-2 225	-2 493
Textile yarn and fabrics	-2 077	-2 134	-2 220	-1 858	-1 829	-1 930
Iron and steel	-1 734	-1 531	-1 571	-1 443	-1 655	-1 940
Plastics	-2 222	-2 343	-2 583	-2 227	-2 182	-2 634
Processed industrial supplies n.e.s.	-10 384	-10 831	-11 783	-11 147	-11 440	-13 173
Other merchandise goods	-391	-922	-957	-1 317	-1 564	-1 849
Other goods	-5 629	-4 696	-4 754	-4 483	-5 140	-5 610
<i>Services debits</i>	-31 328	-31 578	-33 779	-33 050	-32 055	-33 539

(a) Reference year for chain volume measures is 2001-02. (b) Chain volume measures are not additive for most periods; the component measures do not sum to a total in the same way as the corresponding current price components do.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

Table 30.7 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 by the corresponding chain volume measures. These IPDs reflect not only price change, but compositional effects from year to year.

Unlike IPDs, chain price indexes measure only the impact of a price change. The chain Laspeyres price index for goods and services credits fell 2.2% in 2002–03 to \$97.8b. The fall resulted from reduced commodity prices in 2002–03 and a stronger Australian dollar. The chain Laspeyres price index for goods and services debits fell 4.2% to \$95.8b.

Australia's terms of trade IPD (derived by dividing the IPD for credits by the IPD for debits, rose by 2.1% in 2002–03, resulting from a 2.6% fall in the IPD for goods and services credits, offset by a 4.7% fall in the IPD for goods and services debits (table 30.7).

## 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.

Australia's net international investment position at 30 June 2003 was a net foreign financial liability of \$441.5b. This was up \$44.8b (11.3%) on the position a year earlier and resulted from net increases of \$15.0b in the level of foreign equity and \$29.8b in the level of foreign debt.

Graph 30.8 shows the components of Australia's international investment position between 30 June 1993 and 30 June 2003. It shows that the increases in net foreign liabilities reflect increases in both net foreign debt liabilities and net foreign equity liabilities in most years.

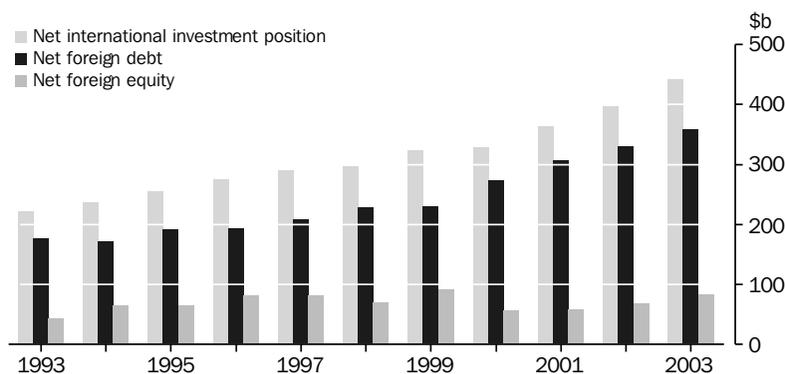
### 30.7 IMPLICIT PRICE DEFLATORS, PRICE INDEXES AND TERMS OF TRADE(a)

	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
Implicit price deflators(b)						
Goods and services credits	88.1	85.0	87.5	99.3	100.0	97.4
Goods credits	87.7	83.5	86.0	99.9	100.0	96.0
Services credits	89.1	90.0	92.4	97.0	100.0	102.9
Goods and services debits	91.6	93.2	92.0	101.3	100.0	95.3
Goods debits	93.6	94.4	93.1	102.3	100.0	94.7
Services debits	84.3	88.8	88.0	97.7	100.0	97.8
Chain Laspeyres price indexes						
Goods and services credits	87.8	84.9	87.0	99.3	100.0	97.8
Goods credits	87.6	83.6	85.7	100.0	100.0	96.5
Services credits	88.8	89.7	92.2	96.9	100.0	103.0
Goods and services debits	89.0	91.4	91.1	100.9	100.0	95.8
Goods debits	90.6	92.3	92.1	101.8	100.0	95.2
Services debits	83.5	88.0	87.4	97.5	100.0	98.1
Terms of trade(c)						
Goods and services	96.2	91.2	95.1	98.0	100.0	102.2
Goods	93.7	88.5	92.4	97.7	100.0	101.3
Services	105.8	101.4	105.1	99.2	100.0	105.2

(a) Reference year for price and terms of trade indexes is 2001–02. (b) Derived by dividing the estimates at current prices in tables 30.5 and 30.6 by the chain volume measures in those tables. (c) Derived by dividing the IPDs for credits by the IPDs for debits.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

### 30.8 NET INTERNATIONAL INVESTMENT POSITION — 30 June



Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

Table 30.9 shows a reconciliation between opening and closing levels for foreign financial assets, foreign financial liabilities and Australia's net international investment position. Increases or decreases in these assets and liabilities are due to financial transactions (investment flows), price changes, exchange rate changes and other adjustments.

#### Foreign debt

Foreign debt is a subset of the financial obligations that make up a country's international investment position. It includes all the non-equity components of the net international investment position, that is, all recorded assets and liabilities other than equity securities and direct investment equity capital, including reinvested earnings.

The level of borrowing and other non-equity liabilities of Australian residents at a particular date make up Australia's foreign debt liabilities. The

level of Australian lending abroad and other non-equity assets at the same date are deducted from the level of borrowing to arrive at Australia's net foreign debt.

The level of net foreign debt at 30 June 2003 was \$359.0b, up \$29.8b (9.0%) on 30 June 2002. The increase during 2002–03 resulted from a \$44.0b (8.4%) increase in foreign debt liabilities partly offset by an increase of \$14.2b (7.3%) in foreign debt assets (table 30.10).

At 30 June 2003 the net foreign debt of the public sector (general government plus public financial and non-financial corporations) was \$9.1b, which accounted for 2.5% of total net foreign debt. Net foreign debt levels of private financial corporations and private non-financial corporations were \$284.4b (79.2% of total net foreign debt) and \$65.5b (18.2%) respectively (table 30.10).

### 30.9 INTERNATIONAL INVESTMENT POSITION

	Position at beginning of period \$m	Changes in position reflecting				Position at end of period \$m
		Transactions \$m	Price changes \$m	Exchange rate changes \$m	Other adjustments \$m	
<b>NET INTERNATIONAL INVESTMENT POSITION</b>						
<b>Total</b>						
2000-01	328 770	15 277	28 813	-6 945	-2 011	363 905
2001-02	363 905	21 052	12 296	-1 345	839	396 746
2002-03	396 746	41 590	-3 139	5 136	1 198	441 532
<b>Equity</b>						
2000-01	56 131	5 814	25 495	-28 139	-1 484	57 818
2001-02	57 818	-19 913	15 563	14 266	-180	67 555
2002-03	67 555	-4 021	-2 158	21 080	112	82 566
<b>Debt</b>						
2000-01	272 639	9 464	3 316	21 194	-527	306 087
2001-02	306 087	40 964	-3 265	-15 610	1 017	329 191
2002-03	329 191	45 611	-979	-15 945	1 087	358 965
<b>FOREIGN ASSETS(a)</b>						
<b>Total</b>						
2000-01	-426 176	-53 617	34 010	-39 019	-626	-485 427
2001-02	-485 427	-52 178	44 535	13 751	-167	-479 487
2002-03	-479 487	-26 747	1 994	17 563	692	-485 986
<b>Equity</b>						
2000-01	-281 990	-20 023	33 078	-28 139	-467	-297 542
2001-02	-297 542	-47 367	46 571	14 266	-172	-284 244
2002-03	-284 244	-21 495	7 052	21 080	1 100	-276 507
<b>Debt</b>						
2000-01	-144 186	-33 595	934	-10 879	-158	-187 885
2001-02	-187 885	-4 811	-2 038	-515	5	-195 243
2002-03	-195 243	-5 253	-5 059	-3 516	-410	-209 480
<b>FOREIGN LIABILITIES(b)</b>						
<b>Total</b>						
2000-01	754 946	68 895	-5 199	32 073	-1 384	849 332
2001-02	849 332	73 230	-32 237	-15 096	1 005	876 233
2002-03	876 233	68 338	-5 132	-12 427	508	927 518
<b>Equity</b>						
2000-01	338 121	25 839	-7 581	—	-1 016	355 360
2001-02	355 360	27 454	-31 010	—	-7	351 799
2002-03	351 799	17 472	-9 211	—	-987	359 073
<b>Debt</b>						
2000-01	416 825	43 058	2 384	32 073	-368	493 972
2001-02	493 972	45 776	-1 228	-15 096	1 011	524 434
2002-03	524 434	50 864	4 079	-12 427	1 495	568 445

(a) Assets include claims of Australian direct investment enterprises on direct investors abroad, which are classified as part of direct investment in Australia. (b) Liabilities include liabilities of Australian direct investors to direct investment enterprises abroad, which are classified as part of direct investment abroad.

Source: *Balance of Payments and International Investment Position, Australia (5302.0)*.

### 30.10 LEVELS OF FOREIGN DEBT — 30 June

	1998	1999	2000	2001	2002	2003
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Foreign debt assets(a)</b>	<b>-119 189</b>	<b>-129 150</b>	<b>-144 186</b>	<b>-187 885</b>	<b>-195 243</b>	<b>-209 480</b>
<i>Public sector</i>	-41 329	-40 770	-44 876	-63 659	-56 156	-55 838
General government	-8 095	-9 378	-9 219	-10 565	-10 869	-10 757
<i>Financial corporations</i>	-32 196	-30 470	-35 263	-46 151	-42 832	-43 376
Central Bank	-23 998	-22 883	-27 184	-37 040	-35 053	-37 640
Central borrowing authorities	-179	-385	-1 090	-1 426	-998	-568
Other financial corporations	-8 019	-7 203	-6 990	-7 685	-6 781	-5 168
Non-financial corporations	-1 037	-922	-393	-6 943	-2 455	-1 705
<i>Private sector</i>	-77 860	-88 380	-99 311	-124 225	-139 087	-153 641
Financial corporations	-58 762	-66 328	-75 689	-93 122	-110 335	-118 892
Non-financial corporations	-19 098	-22 052	-23 622	-31 103	-28 752	-34 749
<b>Foreign debt liabilities(a)</b>	<b>346 971</b>	<b>359 839</b>	<b>416 825</b>	<b>493 972</b>	<b>524 434</b>	<b>568 445</b>
<i>Public sector</i>	86 721	75 279	63 413	71 709	68 078	64 967
General government	38 463	32 373	22 872	26 554	24 927	24 049
<i>Financial corporations</i>	41 392	37 284	33 968	32 649	28 926	26 990
Central Bank	48	40	34	366	43	150
Central borrowing authorities	36 571	32 772	29 060	27 622	24 906	23 962
Other financial corporations	4 774	4 473	4 875	4 661	3 976	2 879
Non-financial corporations	6 866	5 622	6 572	12 506	14 225	13 927
<i>Private sector</i>	260 250	284 560	353 413	422 262	456 356	503 478
Financial corporations	187 507	209 734	269 917	327 240	362 285	403 258
Non-financial corporations	72 742	74 825	83 496	95 022	94 071	100 220
<b>Net foreign debt</b>	<b>227 782</b>	<b>230 689</b>	<b>272 639</b>	<b>306 087</b>	<b>329 191</b>	<b>358 965</b>
<i>Public sector</i>	45 392	34 509	18 537	8 050	11 922	9 129
General government	30 368	22 995	13 652	15 989	14 058	13 292
<i>Financial corporations</i>	9 196	6 814	-1 295	-13 502	-13 906	-16 386
Central Bank	-23 950	-22 843	-27 150	-36 674	-35 010	-37 490
Central borrowing authorities	36 391	32 387	27 970	26 196	23 908	23 393
Other financial corporations	-3 245	-2 730	-2 115	-3 024	-2 805	-2 290
Non-financial corporations	5 828	4 700	6 179	5 563	11 770	12 222
<i>Private sector</i>	182 390	196 179	254 102	298 037	317 269	349 836
Financial corporations	128 746	143 406	194 228	234 118	251 950	284 366
Non-financial corporations	53 644	52 773	59 874	63 919	65 319	65 470

(a) Foreign debt levels between direct investors and direct investment enterprises are recorded on a gross basis for assets and liabilities.

Source: Balance of Payments and International Investment Position, Australia (5302.0).

## Levels of foreign investment in Australia and Australian investment abroad

In table 30.11, levels of investment are categorised by direction (Australian investment abroad and foreign investment in Australia), type of investment (direct, portfolio, financial derivatives, other and reserve assets) and instrument.

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 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 and debt securities other than direct investment, financial derivative assets, other investment assets and reserve assets.

The items Australian investment abroad and foreign investment in Australia in table 30.11 do not equate with foreign assets and liabilities respectively in table 30.9. The difference is due to netting of assets and liabilities in regard to direct investment, both abroad and in Australia. Claims by direct investment enterprises on their direct investors, separately identified in table 30.11, are netted off in that table against liabilities to direct investors. These items are not netted off in table 30.9.

At 30 June 2003 Australian investment abroad totalled \$464.4b, up \$4.2b (0.9%) on the level a year earlier. This rise was the net effect of a \$1.8b decrease in direct investment abroad, a \$5.2b decrease in portfolio investment assets, a \$9.7b increase in financial derivative assets, a \$1.9b decrease in other investment assets and a \$3.3b increase in reserve assets.

Foreign investment in Australia totalled \$905.9b at 30 June 2003, up \$49.0b (5.7%) on June 2002. This rise was due to a \$20.7b increase in direct investment in Australia, a \$4.7b increase in portfolio investment liabilities, a \$13.4b increase in financial derivative liabilities and a \$10.3b increase in other investment liabilities.

### 30.11 LEVELS OF AUSTRALIAN INVESTMENT ABROAD AND FOREIGN INVESTMENT IN AUSTRALIA — 30 June

	1998	1999	2000	2001	2002	2003
	\$m	\$m	\$m	\$m	\$m	\$m
<b>Levels of Australian investment abroad</b>	<b>-290 293</b>	<b>-313 359</b>	<b>-410 656</b>	<b>-464 002</b>	<b>-460 154</b>	<b>-464 353</b>
<i>Direct investment abroad(a)</i>	-125 580	-129 465	-178 304	-183 303	-158 376	-156 535
Equity capital and reinvested earnings	-124 085	-128 988	-179 805	-178 485	-159 211	-154 868
Other capital	-1 494	-477	1 502	-4 819	-835	-1 667
Claims on affiliated enterprises	-5 050	-5 496	-6 496	-14 470	-9 742	-13 394
Liabilities to affiliated enterprises	3 555	5 020	7 997	9 651	10 577	11 727
<i>Portfolio investment assets</i>	-71 962	-87 196	-126 653	-150 312	-160 257	-155 079
Equity securities	-56 254	-67 025	-102 185	-119 058	-125 033	-121 638
Debt securities	-15 708	-20 171	-24 469	-31 254	-35 224	-33 440
Financial derivative assets	-14 357	-15 529	-18 659	-23 804	-30 250	-39 996
<i>Other investment assets</i>	-54 134	-57 215	-59 092	-68 633	-73 836	-71 984
Trade credits	-9 658	-10 106	-9 982	-9 620	-10 259	-10 435
Loans and other assets	-37 427	-39 587	-42 057	-50 549	-54 254	-52 146
Currency and deposits	-7 049	-7 522	-7 053	-8 464	-9 324	-9 404
Reserve assets	-24 260	-23 954	-27 948	-37 951	-37 435	-40 759
<b>Levels of foreign investment in Australia</b>	<b>587 231</b>	<b>635 014</b>	<b>739 425</b>	<b>827 907</b>	<b>856 900</b>	<b>905 885</b>
<i>Direct investment in Australia(b)</i>	162 371	174 478	196 186	201 238	215 322	235 974
Equity capital and reinvested earnings	138 943	152 753	171 462	170 908	178 838	192 961
Other capital	23 428	21 725	24 724	30 330	36 484	43 013
Claims on direct investors	-5 680	-6 785	-7 523	-11 774	-8 756	-9 907
Liabilities to direct investors	29 107	28 510	32 247	42 104	45 240	52 920
<i>Portfolio investment liabilities</i>	332 038	348 145	419 867	484 898	485 050	489 723
Equity securities	110 552	134 226	166 659	184 452	172 962	166 112
Debt securities	221 485	213 919	253 209	300 446	312 088	323 610
Financial derivative liabilities	15 040	17 826	21 433	23 593	31 586	44 980
<i>Other investment liabilities</i>	77 783	94 565	101 939	118 177	124 943	135 209
Trade credits	7 221	7 685	3 708	3 322	3 193	4 124
Loans	34 144	41 361	53 588	53 682	61 689	65 925
Currency and deposits	33 356	35 347	39 508	56 172	56 585	61 664
Other liabilities	3 061	10 172	5 135	5 001	3 475	3 496

(a) Net direct investment abroad, after deduction of liabilities to direct investment enterprises abroad. (b) Net direct investment in Australia, after deduction of claims of Australian direct investment enterprises on direct investors.

Source: Balance of Payments and International Investment Position, Australia (5302.0).

## Ratios

Table 30.12 and graph 30.13 show that the ratio of the current account deficit to gross domestic product (GDP) was 5.6% in 2002–03, an increase on the previous year, and above the average for the last 10 years (4.4%).

Graph 30.14 shows that the ratio of Australia's net foreign liabilities (Australia's net international investment position) to GDP has risen for most years since 1988 and reached its highest level of almost 60% at 30 June 2003. The ratio of net foreign debt to GDP was 47.8% at 30 June 2003,

an increase over the 46.3% recorded the previous year. The ratio of net foreign equity to GDP was 11.1% at 30 June 2003, up on the ratio at 30 June 2002, but below the average for the last 10 years (12.6%).

Table 30.12 shows that the net investment income payable on net foreign debt as a percentage of goods and services credits was 8.3% in 2002–03, continuing the downward trend of the previous two years. The ratio of net investment income payable on equity to goods and services credits was 7.0% in 2002–03, up from 3.9% the previous year.

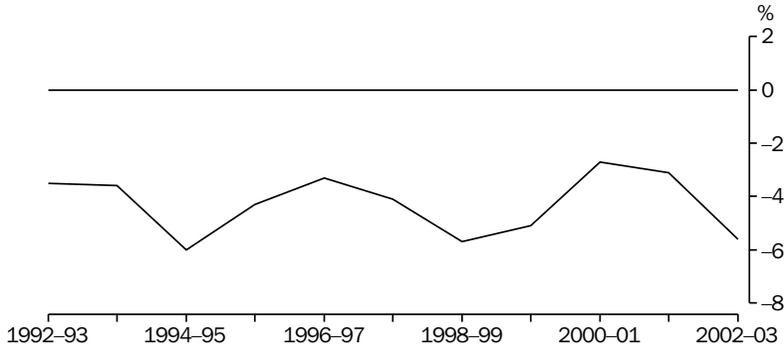
### 30.12 RATIOS

	Units	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
Value							
GDP(a)	\$m	561 229	591 917	628 621	669 307	711 547	751 647
Ratios to GDP							
Current account	%	-4.1	-5.7	-5.1	-2.7	-3.1	-5.6
Goods and services	%	-0.8	-2.4	-2.3	0.1	-0.2	-2.6
Credits	%	20.3	18.9	20.0	22.9	21.4	19.6
Debits	%	-21.1	-21.4	-22.3	-22.8	-21.6	-22.2
Income	%	-3.2	-3.1	-2.9	-2.9	-2.8	-3.0
Net international investment position(b)	%	52.9	54.3	52.3	54.4	55.8	58.7
Net foreign equity	%	12.3	15.4	8.9	8.6	9.5	11.0
Net foreign debt	%	40.6	39.0	43.4	45.7	46.3	47.8
Ratios to good and services credits							
Net investment income	%	-15.9	-16.4	-14.4	-12.4	-13.2	-15.3
Net foreign equity	%	-6.2	-7.0	-3.7	-2.7	-3.9	-7.0
Net foreign debt	%	-9.7	-9.4	-10.7	-9.7	-9.3	-8.3

(a) GDP at current prices. (b) These ratios are derived by expressing net foreign liabilities at end of year as a percentage of GDP at current prices for that year.

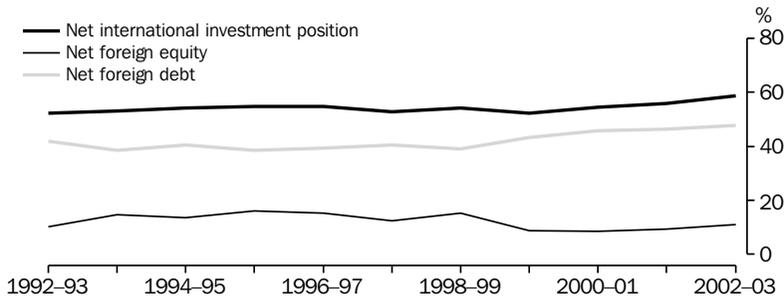
Source: *Australian National Accounts: National Income, Expenditure and Product (5206.0)*; *Balance of Payments and International Investment Position, Australia (5302.0)*.

### 30.13 RATIO OF BALANCE ON CURRENT ACCOUNT TO GDP



Source: Australian National Accounts: National Income, Expenditure and Product (5206.0); Balance of Payments and International Investment Position, Australia (5302.0).

### 30.14 RATIOS(a) OF NET INTERNATIONAL INVESTMENT POSITION TO GDP



(a) These ratios are derived by expressing net foreign liabilities at end of year as a percentage of GDP at current prices for that year.

Source: Australian National Accounts: National Income, Expenditure and Product (5206.0); Balance of Payments and International Investment Position, Australia (5302.0).

## International merchandise trade

International merchandise trade statistics cover all movable goods which add to (imports) or subtract from (exports) Australia's stock of material resources. The statistics are compiled from information submitted by importers and exporters to the Australian Customs Service. 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.

The data about merchandise exports and imports are used in the compilation of the balance of payments. However, various adjustments relating to coverage, timing, classification and valuation are necessary to put international merchandise

trade statistics on a balance of payments basis. Consequently, the merchandise exports and imports statistics, and the excess of exports(+) or imports (-), shown in this section differ from those shown in the *International accounts* section earlier in this chapter.

### Conceptual framework

Australia's 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).

The UN recommendations state that merchandise trade covers all movable goods which add to (imports) or subtract from (exports) the stock of material resources of a country as a result of their movement into or out of the country.

The UN definition excludes:

- direct transit trade, that is, goods being transhipped or moved through Australia for purposes of transport only
- ships and aircraft moving through Australia while engaged in the transport of passengers or goods between Australia and other countries
- non-merchandise trade, consisting primarily of goods moving on a temporary basis (e.g. mobile equipment, goods under repair and goods for exhibition).

International merchandise trade statistics are compiled by the Australian Bureau of Statistics (ABS) from information submitted by exporters and importers or their agents to the Australian Customs Service.

## Classification

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 ABS adopts this as the basis for exports classification using the Australian Harmonised Export Commodity Classification and for imports classification using the Combined Australian Customs Tariff Nomenclature and Statistical Classification (Customs Tariff).

The ABS also classifies export and import statistics according to:

- the UN Standard International Trade Classification (SITC Rev. 3) which groups goods according to the degree of processing they have undergone, from food and crude raw materials through to highly transformed manufactures
- the UN Classification by Broad Economic Categories (BEC) which classifies international trade for the purposes of general economic analysis according to the main end use of the commodities traded.

Commodity statistics in this section are presented according to SITC Rev. 3.

## Valuation

For exports, the point of valuation adopted is free-on-board (f.o.b.) at the Australian port of shipment, while the basis of valuation is 'transactions value', that is, the actual price at which the goods are sold.

For imports, the point of valuation is the point of containerisation (in most cases), or f.o.b. at the customs frontier of the exporting country or the port of loading, whichever comes first. The basis of valuation is the customs value. For transactions between independent buyers and sellers, this will generally be the price actually payable. Where traders are not independent (e.g. if they are related or affiliated in some way), an appropriate customs value may be determined.

## Total merchandise exports and imports

Australia's international merchandise trade balance in 2002–03 was a record deficit of \$17.7b. This followed two successive years of surpluses in 2000–01 and 2001–02. The previous highest deficit was \$12.8b in 1999–2000. In 2002–03, there was a substantial fall in exports (down 5% to \$115.4b) as well as a sharp rise in imports (up 11% to \$133.1b). Table 30.15 and graph 30.16 show the period since 1997–98.

### 30.15 TOTAL MERCHANDISE EXPORTS AND IMPORTS

	Exports	Imports	Merchandise trade balance(a)
	\$m	\$m	\$m
1997-98	87 768	90 684	-2 916
1998-99	85 991	97 611	-11 620
1999-2000	97 286	110 078	-12 792
2000-01	119 539	118 317	1 222
2001-02	121 108	119 649	1 459
2002-03	115 442	133 131	-17 689

(a) A negative sign indicates that merchandise imports exceed merchandise exports.

Source: *International Trade in Goods and Services, Australia* (5368.0).

### Merchandise exports and imports by commodity

In 2002-03 exports decreased by \$5.7b (5%) to \$115.4b. The SITC sections with the largest decreases were:

- Food and live animals, down \$4,007m (18%)
- Mineral fuels, lubricants and related materials, down \$1,323m (5%)
- Crude materials, inedible, except fuels, down \$1,019m (5%)
- Manufactured goods classified chiefly by material, down \$974m (7%)
- Machinery and transport equipment, down \$632m (4%).

These decreases were partly offset by increases in:

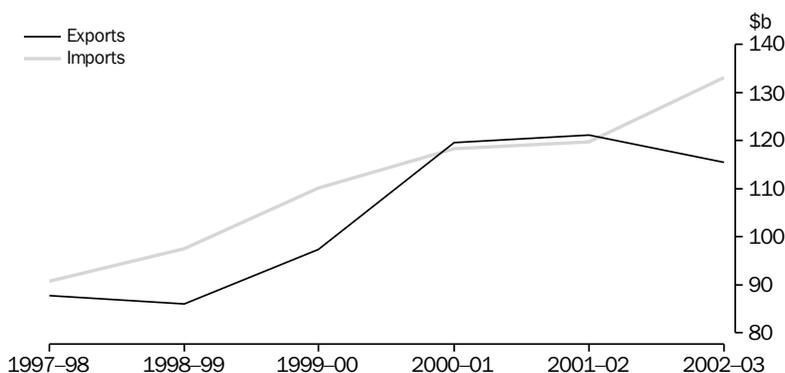
- Commodities and transactions not classified elsewhere, up \$2,176m (20%)
- Beverages and tobacco, up \$363m (15%).

In 2002-03 imports increased by \$13.5b (11%) to \$133.1b. Imports of goods in all SITC sections increased. The largest increases were:

- Machinery and transport equipment, up \$6,986m (13%)
- Mineral fuels, lubricants and related materials, up \$1,568m (17%)
- Miscellaneous manufactured articles, up \$1,300m (7%)
- Manufactured goods classified chiefly by material, up \$1,254m (8%)
- Commodities and transactions not classified elsewhere, up \$1,019m (40%)
- Food and live animals, up \$494m (11%)
- Chemicals and related products, up \$390m (3%).

The value of merchandise exports and imports by commodity for 2001-02 and 2002-03, and their share of total merchandise trade for 2002-03, are shown in table 30.17.

### 30.16 TOTAL MERCHANDISE EXPORTS AND IMPORTS



Source: *International Trade in Goods and Services, Australia* (5368.0).

### 30.17 MERCHANDISE EXPORTS AND IMPORTS, By commodity

Standard International Trade Classification (SITC)	Exports			Imports		
	2001-02	2002-03	Share of total for 2002-03	2001-02	2002-03	Share of total for 2002-03
	\$m	\$m	%	\$m	\$m	%
Food and live animals(a)(b)	22 380	18 374	15.9	4 613	5 107	3.8
Beverages and tobacco	2 360	2 723	2.4	864	1 062	0.8
Crude materials, inedible, except fuels(a)(b)	22 448	21 429	18.6	1 756	1 953	1.5
Mineral fuels, lubricants and related materials(b)	25 130	23 807	20.6	9 030	10 598	8.0
Animal and vegetable oils, fats and waxes(a)	310	324	0.3	289	364	0.3
Chemical and related products, n.e.s.(a)(b)	5 293	5 099	4.4	14 635	15 025	11.3
Manufactured goods classified chiefly by material(a)(b)	13 572	12 597	10.9	14 819	16 074	12.1
Machinery and transport equipment(a)(b)	14 160	13 528	11.7	53 654	60 640	45.5
Miscellaneous manufactured articles(a)(b)	4 483	4 413	3.8	17 416	18 716	14.1
Commodities and transactions not classified elsewhere in the SITC(c)(d)	10 973	13 148	11.4	2 573	3 592	2.7
<b>Total</b>	<b>121 108</b>	<b>115 442</b>	<b>100.0</b>	<b>119 649</b>	<b>133 131</b>	<b>100.0</b>

(a) Excludes export commodities subject to a confidentiality restriction. (b) Excludes import commodities subject to a confidentiality restriction. (c) Includes commodities subject to a confidentiality restriction. (d) Includes small value export entries that cannot yet be allocated by commodity.

Source: *International Trade in Goods and Services, Australia* (5368.0).

Australia's most valuable commodity exports for 2002-03, and their principal markets, were:

*Coal, \$11.9b* — 10% of total exports: Japan (42% of total coal exports), the Republic of (South) Korea (10%), India (9%), and Taiwan (6%).

*Crude petroleum products, \$5.9b* — 5% of total exports: Singapore (31% of total crude petroleum product exports), the Republic of (South) Korea (21%), Japan (16%), and the United States of America (15%).

*Non-monetary gold, \$5.6b* — 5% of total exports: the United Kingdom (38% of total non-monetary gold exports), the Republic of (South) Korea (17%) and Singapore (11%).

*Iron ore, \$5.3b* — 5% of total exports: Japan (41% of total iron ore exports), China (32%), the Republic of (South) Korea (14%), and Taiwan (6%).

Between 2001-02 and 2002-03 the commodities that recorded the largest change in the value of exports were Wheat (down \$1.5b or 33%) and Coal (down \$1.5b or 11%). These decreases were partially offset by an increase in the value of exports of Non-monetary gold (up \$455m or 9%) and Special commodities not classified according to kind, mainly gold re-exported after processing (up \$648m or 29%).

Table 30.18 lists the highest value exports for 2001-02 and 2002-03, and their share of total merchandise export's for 2002-03.

### 30.18 MERCHANDISE EXPORTS OF MAJOR COMMODITIES

Commodity (SITC 3-digit code)	2001-02	2002-03	Share of total merchandise imports 2002-03
	\$m	\$m	%
Coal, not agglomerated (321)	13 403	11 946	10.3
Petroleum oils and oils obtained from bituminous minerals, crude (333)	5 963	5 881	5.1
Gold, non-monetary (excl. gold ores and concentrates) (971)	5 129	5 584	4.8
Iron ore and concentrates (281)	5 160	5 328	4.6
Aluminium (684)	4 412	4 059	3.5
Meat of bovine animals, fresh, chilled or frozen (011)	4 333	3 906	3.4
Aluminium ores and concentrates (incl. alumina) (285)(a)	4 042	3 587	3.1
Wool and other animal hair (incl. wool tops) (268)(a)	3 397	3 299	2.9
Wheat (incl. spelt) and meslin, unmilled (041)	4 527	3 036	2.6
Motor vehicles principally designed for transport of persons (excl. public-transport type, incl. racing cars) (781)	2 996	2 797	2.4
Natural gas (343)	2 612	2 620	2.3
Alcoholic beverages (112)	2 264	2 574	2.2
Petroleum oils, oils from bituminous minerals (not crude); preparations, with 70% or more by weight of these oils (334)	2 358	2 441	2.1
Medicaments (incl. veterinary medicaments) (542)	1 926	1 725	1.5
Meat and edible meat offal (excl. bovine), suitable or fit for human consumption, fresh, chilled or frozen (012)	1 827	1 660	1.4
Milk and cream and milk products (excl. butter and cheese) (022)	1 821	1 345	1.2
Copper (682)	1 515	1 327	1.1
Aircraft and associated equipment; spacecraft (incl. satellites and spacecraft launch vehicles; parts thereof) (792)	1 321	1 269	1.1
Ores and concentrates of base metal (excl. iron, copper, nickel, aluminium, uranium and thorium) (287)(a)	1 387	1 216	1.1
Live animals (excl. fish, crustaceans, molluscs and aquatic invertebrates) (001)	1 112	1 167	1.0
Cotton (263)	1 549	1 157	1.0
Total of all other commodities(b)	48 054	47 518	41.2
<b>Total</b>	<b>121 108</b>	<b>115 442</b>	<b>100.0</b>

(a) Excludes commodities subject to a confidentiality restriction. (b) Includes commodities subject to a confidentiality restriction.

Source: *International Trade in Goods and Services, Australia* (5368.0).

Australia's most valuable commodity imports for 2002-03, and their principal sources, were:

*Passenger motor vehicles, \$10.3b* — 8% of total imports: Japan (57% of total passenger motor vehicle imports), Germany (16%), and the United States of America, South Africa and the Republic of (South) Korea (each 4%).

*Crude petroleum oils, \$7.8b* — 6% of total imports: Vietnam (27% of total crude petroleum imports), Indonesia (21%), Brunei Darussalam (9%), Malaysia, the United Arab Emirates and Saudi Arabia (each 8%) and Papua New Guinea (7%).

*Aircraft and parts, \$5.5b* — 4% of total imports: the United States of America (78% of total aircraft and parts) and France (19%).

*Computing equipment, \$4.9b* — 4% of total imports: China (20% of total computing equipment imports), Malaysia, the United States of America and Singapore (each 14%) and Taiwan (11%).

Between 2001-02 and 2002-03 most major commodities recorded increases in the value of imports with the largest being Aircraft and parts (up \$2.4b or 79%), Passenger motor vehicles (up \$1.3b or 15%) and Crude petroleum oils (up \$1.0b or 15%).

Table 30.19 lists the highest value imports for 2001-02 and 2002-03, and their share of total merchandise imports for 2002-03.

### 30.19 MERCHANDISE IMPORTS OF MAJOR COMMODITIES

Commodity (SITC 3-digit code)	2001–02	2002–03	Share of total merchandise imports 2002–03
	\$m	\$m	%
Motor vehicles principally designed for transport of persons (excl. public-transport type, incl. racing cars) (781)	8 955	10 283	7.7
Petroleum oils and oils obtained from bituminous minerals, crude (333)	6 785	7 812	5.9
Aircraft and associated equipment; spacecraft (incl. satellites and spacecraft launch vehicles; parts thereof) (792)	3 060	5 481	4.1
Automatic data processing machines & units thereof, magnetic, optical readers; data transcribers & processors (752)	5 028	4 871	3.7
Medicaments (incl. veterinary medicaments) (542)	4 002	4 241	3.2
Telecommunications equipment, n.e.s. parts, and accessories of radio, television, video & similar apparatus, n.e.s. (764)	4 507	4 239	3.2
Gold, non-monetary (excl. gold ores and concentrates) (971)	2 219	2 959	2.2
Motor vehicles for the transport of goods and special purpose motor vehicles (782)	2 545	2 888	2.2
Petroleum oils, oils from bituminous minerals (not crude); preparations, with 70% or more by weight of these oils (334)(a)	1 829	2 411	1.8
Parts and accessories (excl. covers, cases and the like) for use with office & automatic data processing mach. (759)	2 491	2 376	1.8
Parts, n.e.s. and accessories of the motor vehicles of Groups 722, 781, 782 and 783 (784)	2 217	2 311	1.7
Paper and paperboard (641)	1 868	2 076	1.6
Electrical machinery and apparatus, n.e.s. (778)	1 749	1 895	1.4
Measuring, checking, analysing and controlling instruments and apparatus, n.e.s. (874)	1 914	1 879	1.4
Baby carriages, toys, games and sporting goods (894)	1 501	1 715	1.3
Internal combustion piston engines, and parts thereof, n.e.s. (713)	1 507	1 697	1.3
Civil engineering and contractors' plant and equipment (723)	1 248	1 541	1.2
Heating and cooling equipment, and parts thereof, n.e.s (741)	1 269	1 521	1.1
Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings (821)	1 194	1 485	1.1
Household type, electrical and non-electrical equipment, n.e.s. (775)	1 230	1 459	1.1
Pumps for gas (incl. air), compressors, fans; ventilating hoods; centrifuges; purifying apparatus; parts (743)	1 111	1 372	1.0
Articles, of plastics, n.e.s. (893)	1 226	1 274	1.0
Total of all other commodities(b)	73 676	65 345	49.1
<b>Total</b>	<b>119 649</b>	<b>133 131</b>	<b>100.0</b>

(a) Excludes commodities subject to a confidentiality restriction. (b) Includes commodities subject to a confidentiality restriction.

Source: *International Trade in Goods and Services, Australia* (5368.0).

## Merchandise exports and imports by country

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 takes place.

In 2002–03 Australia's merchandise trade balance declined by \$19.1b from a surplus of \$1.5b in 2001–02 to a deficit of \$17.7b. The main trading partners contributing to this decline were:

- *the United States of America* — trade deficit increased by \$2,647m, due to a \$1,639m decrease in exports and a \$1,007m increase in

imports. Exports of most commodities decreased, particularly Meat and meat preparations (down \$471m), Non-ferrous metals (down \$289m), Transport equipment (excluding road vehicles) (down \$259m) and Medicinal and pharmaceutical products (down \$229m). The increase in imports was due almost solely to Aircraft and associated equipment and parts (up \$1,589m).

- *Japan* — trade surplus decreased by \$1,932m, due to a \$1,058m decrease in exports and an \$872m increase in imports. Exports of Coal, coke and briquettes decreased by \$821m, while imports of Road vehicles increased by \$695m.

- *China* — trade deficit increased by \$1,540m, due to a \$2,517m increase in imports, partly offset by a \$977m increase in exports. Imports of most commodity groups increased, particularly Office and automatic data processing machines (up \$374m) and Telecommunications and sound recording and reproducing equipment (up \$326m). The largest increase in exports were Metalliferous ores and metal scrap (up \$254m) and Petroleum, petroleum products and related materials (up \$201m).
- *France* — trade deficit increased by \$1,262m due to a \$173m decrease in exports and a \$1,090m increase in imports. Imports of Aircraft rose \$941m.
- *Italy* — trade deficit increased by \$1,043m due to a \$304m decrease in exports and a \$738m increase in imports.

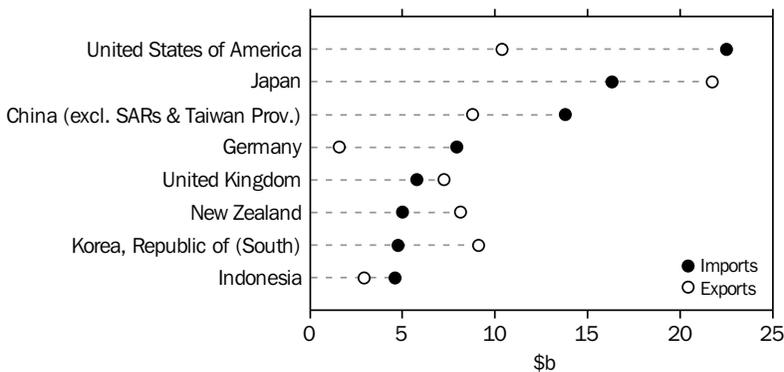
These declines in the merchandise trade balance were partly offset by a \$2,486m improvement in the trade balance with the United Kingdom. This was mainly due to a \$2,036m increase in exports, particularly Non-monetary gold (up \$946m) and Special transactions and commodities not classified according to kind (up \$1,082m). The latter was predominantly gold re-exported after processing.

Graph 30.20 shows Australian merchandise exports and imports by value for Australia's top trading partners. Graph 30.21 shows the countries with which Australia has the highest net merchandise trade balance (surplus or deficit).

Table 30.22 shows total merchandise exports and imports for the last two financial years and the merchandise trade balance in 2002–03 for Australia's top trading partners. Statistics are also provided for the following country grouping:

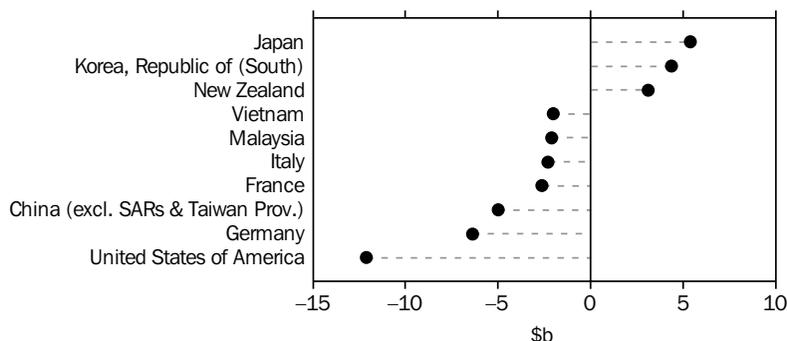
- *APEC* — Brunei Darussalam, Canada, Chile, China, Hong Kong (SAR of China), Indonesia, Japan, Republic of (South) Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russian Federation, Singapore, Taiwan, Thailand, United States of America and Vietnam. Peru, Russian Federation and Vietnam are included from 1998–99.
- *ASEAN* — Brunei Darussalam, Burma, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam. Burma and Laos are included from July 1997. Cambodia is included from April 1999.
- *EU* — Austria, Belgium, Denmark, Finland, France, Germany, Greece, Republic of Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom.
- *OECD* — Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Republic of Ireland, Italy, Japan, Republic of (South) Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States of America. Czech Republic and Hungary are included from January 1996 and Republic of (South) Korea and Poland are included from 1996–97.

**30.20 MERCHANDISE IMPORTS AND EXPORTS, Selected countries — 2002–03**



Source: *International Trade in Goods and Services, Australia, June 2003* (5368.0).

### 30.21 MERCHANDISE TRADE BALANCE(a), Selected countries — 2002–03



(a) A negative amount indicates that merchandise imports exceed merchandise exports.

Source: *International Trade in Goods and Services, Australia* (5368.0).

### Merchandise exports and imports by industry of origin

Table 30.23 shows Australia's merchandise trade statistics classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC). The statistics are compiled by allocating international trade data for a commodity to an ANZSIC industry of origin category, based upon the industry which predominantly produces that commodity in Australia as defined by the ANZSIC.

The majority of exports in 2002–03 were classified to Manufacturing, \$65.8b (57% of total exports) and Mining, \$31.2b (27% of total exports). Most ANZSIC subdivisions recorded decreases in 2002–03 with the largest being in Agriculture, down \$2.1b (20%), Food, beverage and tobacco, down \$1.8b (11%) and Coal mining, down \$1.5b (11%).

The majority of imports were classified to Manufacturing, \$123.0b (92% of total imports). There were increases in all ANZSIC subdivisions except Other mining during 2002–03, with the largest being in Machinery and equipment manufacturing, up \$7.1b (12%), Metal products, up \$1.5b (18%) and Petroleum, coal, chemical and associated product manufacturing, up \$1.2b (6%).

### International trade price indexes

The export price index for goods (all groups) decreased by 5% in 2002–03 (table 30.24). The largest decreases were in Miscellaneous manufactured articles, down 15%, Chemicals and related products, n.e.s., down 13% and Food and live animals, down 10%. The only increase was in Beverages and tobacco, up 1%.

Between 1997–98 and 2002–03 the all groups index increased by 13%. The major contributors were Mineral fuels, lubricants and related materials, up 39%, Beverages and tobacco, up 24% and Food and live animals, up 10%.

The import price index for goods (all groups) decreased by 6% in 2002–03 (table 30.25), due largely to decreases in the import prices of Miscellaneous manufactured articles, down 11%, Machinery and transport equipment, down 10% and Chemicals and related products n.e.s., down 8%. These decreases were partly offset by large increases in Animal and vegetable oils, fats and waxes, up 19% and Mineral fuels, lubricants and other related materials, up 17%.

Between 1997–98 and 2002–03 the all groups index increased by 11%. The major contributor to this increase was Mineral fuels, lubricants and other related materials, up 82%.

**30.22 MERCHANDISE EXPORTS AND IMPORTS, By country and country group(a)**

	Exports		Imports		Balance of trade
	2001-02	2002-03	2001-02	2002-03	2002-03
	\$m	\$m	\$m	\$m	\$m
Belgium-Luxembourg	862	839	876	1 153	-314
Brazil	457	412	470	490	-78
Canada	1 900	1 816	1 607	1 755	61
China (excl. SARs & Taiwan Prov.)	7 816	8 793	11 275	13 792	-4 999
Denmark	108	125	671	770	-645
Egypt(a)	754	370	20	20	350
Fiji	529	543	232	222	321
Finland	392	441	727	680	-239
France	1 343	1 171	2 691	3 781	-2 610
Germany	1 349	1 579	6 732	7 953	-6 374
Hong Kong (SAR of China)	3 996	3 215	1 410	1 234	1 981
India	2 524	2 577	874	979	1 598
Indonesia	3 194	2 908	4 010	4 600	-1 692
Iran	785	413	39	40	373
Iraq	840	360	—	37	323
Ireland	307	183	1 469	1 607	-1 424
Israel	291	194	525	481	-287
Italy	2 165	1 861	3 410	4 149	-2 288
Japan	22 796	21 738	15 461	16 335	5 403
Korea, Republic of (South)	9 818	9 116	4 722	4 753	4 363
Kuwait	518	518	133	184	334
Malaysia	2 519	2 147	3 857	4 262	-2 115
Mexico	478	430	521	572	-142
Netherlands	1 522	1 364	1 094	1 283	81
New Zealand	7 669	8 120	4 740	5 019	3 101
Pakistan	477	286	200	192	94
Papua New Guinea	1 013	949	1 124	1 502	-553
Philippines	1 252	1 091	623	815	276
Saudi Arabia	2 598	1 990	1 026	1 284	706
Singapore	4 936	4 655	3 972	4 370	285
South Africa	1 341	1 313	870	1 060	253
Spain	792	668	761	1 047	-379
Sweden	220	211	1 625	1 810	-1 599
Switzerland	227	380	1 302	1 230	-850
Taiwan	4 828	4 314	3 132	3 401	913
Thailand	2 291	2 479	2 886	3 469	-990
Turkey	317	296	186	223	73
United Arab Emirates	1 245	1 233	749	753	480
United Kingdom	5 199	7 236	6 219	5 770	1 466
United States of America	12 008	10 369	21 488	22 496	-12 127
Vietnam	497	472	1 855	2 503	-2 031
Others countries(b)	6 935	6 266	4 065	5 057	1 209
<b>Total</b>	<b>121 108</b>	<b>115 442</b>	<b>119 649</b>	<b>133 131</b>	<b>-17 689</b>
APEC	87 452	82 998	83 816	92 247	-9 249
ASEAN	14 807	13 850	17 634	20 722	-6 872
EU	14 486	15 841	27 122	31 400	-15 559
OECD	69 882	68 323	78 154	84 752	-16 429

(a) Exports of Alumina to Egypt are excluded from its country total and included in the 'Other Countries' category. (b) Others include: all countries not displayed in table; Zone of Co-op A-Timor Gap; Destination or Origin Unknown; International Waters; No country details; Confidentialised alumina exports; and Ship and aircraft stores.

Source: *International Trade in Goods and Services, Australia* (5368.0).

### 30.23 MERCHANDISE EXPORTS AND IMPORTS, By industry of origin

Industry of origin	Exports			Imports		
	2000-01 \$m	2001-02 \$m	2002-03 \$m	2000-01 \$m	2001-02 \$m	2002-03 \$m
<b>Agriculture, forestry, fishing and hunting</b>						
Agriculture	9 741	10 643	8 544	606	575	870
Services to agriculture; hunting and trapping	2 107	1 710	1 249	6	8	8
Forestry and logging	78	100	116	6	6	7
Commercial fishing	885	972	929	213	164	181
<i>Total</i>	<i>12 811</i>	<i>13 425</i>	<i>10 838</i>	<i>831</i>	<i>753</i>	<i>1 066</i>
<b>Mining</b>						
Coal mining	10 833	13 407	11 949	7	12	13
Oil and gas extraction	11 144	9 298	9 357	8 421	6 904	7 890
Metal ore mining	9 667	9 541	9 686	198	173	191
Other mining	268	261	255	180	171	163
<i>Total</i>	<i>31 912</i>	<i>32 507</i>	<i>31 248</i>	<i>8 807</i>	<i>7 259</i>	<i>8 257</i>
<b>Manufacturing</b>						
Food, beverage and tobacco	16 649	17 538	15 693	5 090	5 387	5 959
Textile, clothing, footwear and leather	2 937	2 740	2 757	7 389	7 420	7 842
Wood and paper products	1 635	1 783	1 882	3 577	3 473	3 759
Printing, publishing and recorded media	546	577	586	1 918	2 020	2 194
Petroleum, coal, chemical and associated products	8 868	8 182	8 021	19 306	20 052	21 249
Non-metallic mineral products	379	332	325	1 402	1 472	1 631
Metal products	21 038	20 301	19 502	7 442	8 416	9 924
Machinery and equipment	16 191	16 714	15 812	58 672	59 155	66 288
Other manufacturing	886	944	1 178	3 536	3 767	4 198
<i>Total</i>	<i>69 128</i>	<i>69 111</i>	<i>65 756</i>	<i>108 331</i>	<i>111 162</i>	<i>123 045</i>
Other(a)(b)	5 689	6 066	7 601	349	475	763
<b>Total</b>	<b>119 539</b>	<b>121 108</b>	<b>115 442</b>	<b>118 317</b>	<b>119 649</b>	<b>133 131</b>

(a) Includes exports which cannot yet be allocated by industry of origin. (b) Includes commodities subject to a confidentiality restriction.

Source: ABS data available on request, *International Trade*.

### 30.24 EXPORT PRICE INDEX(a), Index numbers based on SITC

Commodity (SITC)	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Food and live animals	99.6	96.6	95.7	109.6	118.9	109.3
Beverages and tobacco	120.2	128.3	131.5	137.8	142.8	143.8
Crude materials, inedible, except fuels	90.3	84.0	82.6	95.7	99.0	97.0
Mineral fuels, lubricants and related materials	121.8	119.7	127.1	162.7	164.7	160.9
Chemicals and related products, n.e.s.	96.0	96.2	102.5	119.9	113.0	100.4
Manufactured goods classified chiefly by materials	93.7	86.8	101.0	116.7	105.1	102.1
Machinery and transport equipment	95.9	97.7	98.8	104.1	105.6	100.6
Miscellaneous manufactured articles	108.2	111.7	112.5	118.4	119.2	104.5
<b>All groups</b>	<b>98.9</b>	<b>95.7</b>	<b>98.0</b>	<b>114.8</b>	<b>116.7</b>	<b>111.7</b>

(a) Reference year 1989-90 = 100.0.

Source: *International Trade Price Indexes, Australia (6457.0)*.

### 30.25 IMPORT PRICE INDEX(a), Index numbers based on SITC

Commodity (SITC)	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Food and live animals chiefly for food	129.0	125.1	116.9	121.4	122.5	125.1
Beverages and tobacco	126.0	130.5	127.0	128.5	132.9	139.2
Crude materials, inedible, except fuels	119.1	119.8	124.9	139.9	124.9	123.1
Mineral fuels, lubricants and other related materials	93.4	84.9	135.4	188.0	158.4	174.9
Animal and vegetable oils, fats and waxes	156.4	178.2	138.5	122.6	122.1	141.0
Chemicals and related products n.e.s.	112.9	114.2	111.0	128.1	128.5	120.2
Manufactured goods classified chiefly by material	116.7	122.6	120.2	131.3	133.9	129.2
Machinery and transport equipment	115.5	121.9	119.4	129.7	128.2	118.7
Miscellaneous manufactured articles	120.3	127.9	126.1	140.0	143.0	132.1
Commodities and transactions n.e.c.	90.5	91.9	89.8	99.6	110.8	115.4
<b>All groups</b>	<b>115.4</b>	<b>119.9</b>	<b>120.2</b>	<b>134.3</b>	<b>132.3</b>	<b>126.0</b>

(a) Reference year 1989-90 = 100.0.

Source: *International Trade Price Indexes, Australia (6457.0)*.

## 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), where services are broadly defined as products other than tangible goods. As international trade in services cover a diverse range of activities, various data sources and methods are used to compile estimates of the different service types.

### Conceptual framework

Australia's international trade in services statistics are compiled in accordance with the fifth edition of the International Monetary Fund's *Balance of Payments Manual (BPM5)*. 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 (5331.0)*.

### Classification

The international standard for the classification of international trade in services is defined in the BPM5 framework. This framework has been further elaborated in the 'Extended Balance of Payments Service Classification', as detailed in the UN publication *Manual on Statistics of International Trade in Services*.

International trade in services statistics are compiled for transportation, travel, communications, construction, computer and information services, royalties and licence fees, other business services, personal, cultural and

recreational services and government services. Some information is also available by partner country and state.

### Statistical overview

In current price terms, Australia's international net trade in services in 2002-03 recorded a deficit of \$1.5b, an increase of \$0.6b on the \$0.9b deficit recorded in 2001-02. Services exports (credits) rose marginally, by \$0.1b (0.5%) to \$31.3b. Small rises in computer and information services and other business services were offset by a fall in travel services. Services imports (debits) increased by \$0.7b to \$32.8b (2.3%). Most categories recorded rises with the largest increase being \$231m in other business services. Table 30.26 provides details of the international trade in services, by service type.

As shown in table 30.27, the main destinations for services exports in 2001-02 (the latest year available) were the United States of America (15%), the United Kingdom (11%), Japan (11%), Singapore (7%) and New Zealand (7%). Services exports to each of these markets fell in 2001-02, except for Singapore. The main source countries for services imports in 2001-02, as shown in table 30.28, were the United States of America (19%), the United Kingdom (11%), Singapore (7%), Hong Kong (SAR of China) (6%), Japan (5%) and New Zealand (5%). Services from Singapore have almost doubled since 1996-97 while services from Hong Kong have risen by over 50% since 1999-2000.

**30.26 INTERNATIONAL TRADE IN SERVICES, By service type**

	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
	\$m	\$m	\$m	\$m	\$m	\$m
<b>EXPORTS</b>						
Transportation services	6 611	6 803	6 865	8 062	7 665	7 568
Passenger	5 550	5 604	5 848	7 024	6 664	6 643
Freight	1 061	1 199	1 017	1 038	1 001	925
Other	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Travel services	11 540	11 944	13 139	15 366	14 775	14 485
Business	893	1 009	1 040	1 166	1 071	1 060
Personal	10 647	10 935	12 099	14 200	13 704	13 425
Communications services	1 361	1 239	1 475	1 397	976	1 057
Construction services	31	18	23	68	101	103
Insurance services	840	859	766	709	673	673
Financial services	713	716	747	747	784	784
Computer and information services	532	676	668	797	949	1 100
Royalties and licence fees	449	488	572	626	515	568
Other business services	2 224	2 552	2 904	3 185	3 391	3 566
Merchanting and other trade-related	481	586	501	489	549	496
Operational leasing	8	8	15	16	26	27
Miscellaneous business, professional and technical	1 735	1 958	2 388	2 680	2 894	3 043
Personal, cultural and recreational services	352	388	475	1 514	568	649
Government services n.e.i.	553	559	735	733	773	791
<b>Total</b>	<b>25 206</b>	<b>26 242</b>	<b>28 369</b>	<b>33 204</b>	<b>31 200</b>	<b>31 344</b>
<b>IMPORTS</b>						
Transportation services	9 110	9 367	10 018	11 352	10 776	11 000
Passenger	3 224	3 485	3 876	4 337	4 182	4 266
Freight	5 013	5 009	5 257	5 991	5 626	5 810
Other	873	873	885	1 024	968	924
Travel services	8 372	9 044	9 836	11 189	10 934	11 025
Business	2 416	2 239	2 536	2 854	2 701	2 677
Personal	5 956	6 805	7 300	8 335	8 233	8 348
Communications services	1 407	1 467	1 664	1 766	1 459	1 414
Construction services	—	—	—	—	—	—
Insurance services	915	922	902	878	856	856
Financial services	442	468	527	528	556	556
Computer and information services	336	424	458	417	451	604
Royalties and license fees	1 519	1 692	1 805	1 706	1 791	1 825
Other business services	3 003	3 253	3 046	3 070	3 719	3 950
Merchanting and other trade-related	392	329	221	248	334	399
Operational leasing	-864	1 034	942	1 011	948	975
Miscellaneous business, professional and technical	1 747	1 890	1 883	1 811	2 437	2 576
Personal, cultural and recreational services	702	756	808	767	865	882
Government services n.e.i.	592	633	649	626	649	684
<b>Total</b>	<b>26 398</b>	<b>28 026</b>	<b>29 713</b>	<b>32 299</b>	<b>32 056</b>	<b>32 796</b>

Source: Balance of Payments and International Investment Position, Australia (5302.0).

### 30.27 SERVICE EXPORTS, By country and country group(a)

	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	\$m	\$m	\$m	\$m	\$m	\$m
Belgium and Luxembourg	105	129	100	95	121	111
Brunei Darussalam	14	17	25	18	24	31
Canada	309	359	349	377	458	408
Central America and Caribbean	15	14	40	12	25	25
Chile	9	12	28	9	20	28
China (excl. SARs & Taiwan Prov.)	396	485	573	700	862	875
Fiji	62	122	149	192	146	113
France	207	191	265	290	396	343
Germany	665	725	732	767	868	775
Greece	49	60	64	78	83	54
Hong Kong (SAR of China)	1 054	1 033	964	985	1 154	1 460
Indonesia	1 029	933	835	806	883	962
Ireland, Republic of	77	94	126	165	215	214
Italy	244	251	288	271	310	228
Japan	3 688	3 520	3 253	3 312	3 609	3 343
Korea, Republic of (South)	927	614	449	598	727	780
Malaysia	733	774	659	769	856	807
Mexico	4	5	19	9	13	13
Netherlands	211	272	275	299	325	258
New Zealand	1 666	1 825	1 806	2 041	2 218	2 116
Papua New Guinea	279	341	287	370	376	256
Philippines	189	193	168	184	166	128
Russian Federation	63	60	45	56	76	64
Singapore	1 256	1 199	1 339	1 665	2 099	2 172
South Africa	177	167	217	176	222	169
Sweden	99	188	258	285	226	173
Switzerland	261	280	300	313	374	376
Taiwan	570	536	453	420	434	359
Thailand	474	356	347	441	486	458
United Kingdom	2 171	2 487	2 837	3 100	3 573	3 489
United States of America	3 220	4 108	4 351	4 569	5 042	4 662
Vietnam	n.a.	n.a.	103	96	102	162
Africa n.e.s.	103	122	114	134	146	150
America n.e.s.	324	265	327	292	210	135
Asia n.e.s.	994	980	1 023	1 133	1 366	1 369
Europe n.e.s.	645	554	665	747	1 021	1 021
Oceania n.e.s.	288	216	245	273	361	211
International institutions	2	—	—	—	—	—
Unallocated	1 647	1 719	2 163	2 321	2 709	2 904
<b>Total</b>	<b>24 226</b>	<b>25 206</b>	<b>26 242</b>	<b>28 369</b>	<b>33 204</b>	<b>31 200</b>
APEC	15 817	16 310	16 055	17 428	20 507	19 083
ASEAN	3 825	3 571	3 487	3 992	4 624	4 722
EU	4 152	4 678	5 219	5 667	6 591	5 911
OECD	14 371	15 478	15 780	16 986	19 992	17 756

(a) At the time of compilation, final country data for 2002-03 were not available for inclusion.

Source: ABS web site <<http://www.abs.gov.au>>, International trade theme page, feature article 'International Trade in Services by Partner Country'.

### 30.28 SERVICE IMPORTS, By country and country group(a)

	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	\$m	\$m	\$m	\$m	\$m	\$m
Belgium and Luxembourg	67	95	70	92	58	36
Brunei Darussalam	9	10	30	24	36	42
Canada	318	322	319	390	395	388
Central America and Caribbean	164	219	222	237	256	261
Chile	16	62	40	36	59	76
China (excl. SARs & Taiwan Prov.)	448	595	615	608	680	805
Fiji	179	248	318	354	322	323
France	288	393	351	380	428	419
Germany	529	709	841	870	1 149	1 273
Greece	212	237	234	268	285	279
Hong Kong (SAR of China)	1 276	1 255	1 158	1 273	1 688	1 957
Indonesia	707	682	583	525	576	638
Ireland, Republic of	140	178	153	181	230	252
Italy	536	526	459	421	437	459
Japan	1 546	1 285	1 697	2 010	2 051	1 750
Korea, Republic of (South)	282	315	205	206	336	302
Malaysia	629	690	744	745	923	788
Mexico	16	20	22	33	30	35
Netherlands	409	468	499	590	510	387
New Zealand	1 153	1 351	1 355	1 546	1 682	1 644
Papua New Guinea	174	226	150	162	179	160
Philippines	145	225	159	170	188	179
Russian Federation	79	62	57	43	157	126
Singapore	1 202	1 216	1 571	1 923	2 316	2 375
South Africa	156	194	189	170	188	235
Sweden	99	161	88	83	101	73
Switzerland	569	619	727	750	920	1 011
Taiwan	156	182	119	135	136	127
Thailand	407	494	533	625	759	792
United Kingdom	3 853	3 630	3 233	3 645	3 758	3 593
United States of America	4 956	5 585	5 602	6 203	6 440	5 931
Vietnam	n.a.	n.a.	278	214	248	265
Africa n.e.s.	164	184	269	424	370	337
America n.e.s.	224	223	160	135	160	164
Asia n.e.s.	609	738	733	902	1 145	1 228
Europe n.e.s.	864	895	1 021	907	982	1 178
Oceania n.e.s.	156	223	217	231	256	311
International institutions	—	—	1	1	1	—
Unallocated	1 416	1 895	3 000	2 198	1 864	1 858
<b>Total</b>	<b>24 152</b>	<b>26 398</b>	<b>28 026</b>	<b>29 713</b>	<b>32 299</b>	<b>32 056</b>
APEC	13 439	14 515	15 241	16 871	18 880	18 398
ASEAN	3 179	3 340	3 913	4 248	5 061	5 092
EU	6 429	6 856	6 284	6 880	7 356	7 317
OECD	15 569	16 503	16 499	18 179	19 367	18 546

(a) At the time of compilation, final country data for 2002-03 were not available for inclusion.

Source: ABS web site <<http://www.abs.gov.au>>, International trade theme page, feature article 'International Trade in Services by Partner Country'.

## Foreign ownership in Australia

Statistics of foreign ownership in Australia presented in this section use data from the survey of international investment to estimate the foreign ownership of equity in Australian enterprises.

Table 30.29 shows that the total value of equity on issue by Australian enterprise groups at 30 June 2003 stood at \$1,183b. Of this total, 64% related to shares or equivalent equity interests issued by non-financial corporations. Banks accounted for a further 15% of total equity issued, and the other financial enterprises, including life offices and superannuation funds (but excluding non-bank deposit taking institutions), also accounted for 17%. Lesser amounts were issued by non-bank deposit taking institutions (3% of the total) and the central bank (1%).

Of the total equity on issue by Australian enterprise groups at 30 June 2003, non-residents held equity valued at \$359b (30%), while residents held \$824b (70%).

Although the proportion of equity held by non-residents has remained relatively stable, the total value of equity on issue has increased by 19%, from \$991b to \$1,183b, over the period from 30 June 1999 to 30 June 2003.

Analysed by sectoral components, the value of equity on issue by non-financial corporations rose 5% to \$755.5b over the period 30 June 1999 to 30 June 2003, while the proportion held by non-residents rose from 34% to almost 38%.

The amount issued by banks has increased by 60% between 30 June 1999 and 30 June 2003, while the proportion of non-resident holdings of the total equity issued by banks has risen from 25% to 28% over the same period.

The value of equity issued by life offices, superannuation funds and other financial enterprises increased by 57% over the period from 30 June 1999 to 30 June 2003, with foreign ownership of this equity falling from 12% at 30 June 1999 to 9% at 30 June 2003.

**30.29 FOREIGN OWNERSHIP OF EQUITY(a), By sectoral components — 30 June**

	Units	1999	2000	2001	2002	2003
<b>Non-financial corporations(b)</b>						
Amount issued(c)	\$b	722.4	791.8	802.7	762.2	755.5
Amount held by rest of world	\$b	247.4	279.0	275.3	267.4	284.2
Proportion of foreign ownership	%	34.2	35.2	34.3	35.1	37.6
<b>Banks</b>						
Amount issued(c)	\$b	113.3	138.6	178.2	189.7	181.2
Amount held by rest of world	\$b	28.4	35.9	52.8	57.4	51.0
Proportion of foreign ownership	%	25.1	25.9	29.6	30.3	28.1
<b>Non-bank deposit taking institutions</b>						
Amount issued(c)	\$b	15.0	15.7	20.2	25.1	31.9
Amount held by rest of world	\$b	4.0	4.1	4.2	4.5	5.2
Proportion of foreign ownership	%	26.7	26.1	20.8	17.9	16.3
<b>Other financial enterprises(d)</b>						
Amount issued(c)	\$b	129.4	161.8	204.0	198.8	203.1
Amount held by rest of world	\$b	15.1	19.3	23.1	22.5	18.7
Proportion of foreign ownership	%	11.7	11.9	11.3	11.3	9.2
<b>Central bank</b>						
Amount issued(e)(f)	\$b	10.9	10.4	12.3	11.4	11.7
<b>Total amount issued</b>	<b>\$b</b>	<b>991.0</b>	<b>1 118.3</b>	<b>1 217.4</b>	<b>1 187.2</b>	<b>1 183.4</b>
<b>Total amount held by rest of world</b>	<b>\$b</b>	<b>294.9</b>	<b>338.3</b>	<b>355.4</b>	<b>351.8</b>	<b>359.1</b>
<b>Proportion of foreign ownership</b>	<b>%</b>	<b>29.8</b>	<b>30.3</b>	<b>29.2</b>	<b>29.6</b>	<b>30.3</b>

(a) Equity includes units in trusts. (b) Includes private non-financial corporations, and Commonwealth, state and local public non-financial corporations. (c) These estimated market values are considered to be of poor quality. They should be used cautiously. (d) Includes life offices and superannuation funds, central borrowing authorities, and other financial enterprises. (e) Net asset values. (f) There is no foreign ownership in this component.

Source: Australian National Accounts: Financial Accounts (5232.0); Balance of Payments and International Investment Position, Australia (5302.0).

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