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## **Information Paper**

# **Population Concepts**

**Australia**

**2008**



New  
Issue

# **Information Paper**

# **Population Concepts**

# **Australia**

# **2008**

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## ABBREVIATIONS

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**ABS** Australian Bureau of Statistics  
**ASGC** Australian Standard Geographical Classification  
**BPM5** *Balance of Payments Manual, Fifth Edition, 1993*(International Monetary Fund)  
**CD** collection district  
**DFAT** Australian Government Department of Foreign Affairs and Trade  
**DIAC** Australian Government Department of Immigration and Citizenship  
**DIMA** Australian Government Department of Immigration and Multicultural Affairs  
**DIMIA** Australian Government Department of Immigration and Multicultural and Indigenous Affairs  
**ERP** estimated resident population  
**FTE** full-time equivalent  
**IMF** International Monetary Fund  
**LGA** local government area  
**PES** post-enumeration survey  
**SLA** statistical local area

## MAIN FEATURES

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### INTRODUCTION

Population estimates are one of the major outputs of any National Statistical Office. They are key statistics for a wide range of planning and policy decisions and while population can be simply defined e.g. 'the total number of persons inhabiting a country, town or any district or area' (Macquarie Dictionary, 2005) the concepts associated with its measurement are increasingly complex.

In the Australian context the key population measure is the estimated resident population (ERP) which is based on the concept of usual residence. However there are a range of other population concepts that are relevant to different analytical situations. These can include the population in a particular area at a particular time, or, while not entirely consistent with above definition, it can extend to the concept of the population serviced by a particular area.

The objectives of this paper are to discuss the range of population concepts, highlight the differences between the various concepts and identify some of the measurement issues associated with the different concepts.

### SCOPE

For the purposes of this paper the following population concepts have been identified and considered:

- Population present - based on where people are at a particular point in time i.e. place of enumeration;
- Usually resident population - based on where people are usually resident using a range of criteria;
- Legal population - based on citizenship and residency permits;
- Economic population - based on economic concept of residence;
- Working population - based on place of employment;
- Service populations - based on demand for and use of services in a particular area.

Each of these concept is discussed briefly below and in more detail in the following chapters.

### POPULATION CONCEPTS

The five yearly Census of Population and Housing is the primary source of basic population statistics, providing a total count of the population on census night. Population count may be required on a place of enumeration (*de facto*) basis as well as on a place of usual residence (*de jure*) basis (United Nations, 1998a). Importantly the Australian Census can provide population counts on a place of enumeration on census night basis or a place of usual residence basis. It can also provide counts of the working population.

A 'population present' count is the simplest form of population count from a population census, in which people are counted at their place of enumeration (i.e. where they spend census night).

A usual resident count is a count of all usual residents of an area at the time of the census. It counts people where they usually live. The estimated resident population (ERP) is based on census usual residence counts with required adjustments, and is normally higher than the census count at the national level. It refers to all people, regardless of nationality or citizenship, who usually live in Australia.

## MAIN FEATURES *continued*

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### POPULATION CONCEPTS

*continued*

The legal population of Australia consists primarily of people with Australian citizenship. The legal population based on citizenship criteria is likely to be lower than the ERP, as many segments of the ERP, such as permanent residents and long-term visitors from overseas (including students) are not covered in the legal population. However, Australian citizens overseas (who may not be included in ERP) could form part of the legal population.

The concept of predominant centre of economic interest applies to the definition of an economic population. The concept recommends that a person be considered a resident of the economic territory with which he/she has the strongest links. For most cases, this would be approximated using the practical method of residence for one year or more. However, there are some exceptions which are discussed in the paper.

The concept of a working population relates to persons working and allocates them to the geographic area where they work. There is a limitation in the working population in that it does not account for school, tertiary and other students, and other persons not in employment.

The concept of service populations refers to the population accessing the services of a particular area and may include permanent or temporary residents of the area where the service is sought, or there may be regular and irregular daytime visitors (including commuters), or overnight or short-term visitors to the area.

The increasing mobility of the Australian population and use of population for resource distribution has created a growing demand for service population estimates at the local area level e.g. SLA. The ERP alone does not meet all information needs of users, as some services are also provided to persons who are not usual residents of a particular area. In recognition of the rising interest in the service population, various definitions, conceptual clarifications of the service population, and issues associated with them are discussed in this paper.

### Next steps

The paper addresses the different population concepts, however, as noted there are a range of measurement issues. For example, there is no established standard method for determining or estimating the size of a service population of a geographic area or the Australian diaspora. Therefore further research needs to be undertaken into the feasibility of developing frameworks for estimating a service population of geographic areas within Australia and the Australian diaspora.

The ABS is interested in discussing with stakeholders the need for these types of estimates, their application in policy and program formulation, monitoring and decision making, and related matters to help formulate future directions in this statistical field. The ABS would welcome any comments on the matters discussed in this information paper. These may be sent to:

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## CHAPTER 1 POPULATION PRESENT

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### CONCEPT

A 'population present' count is based on the concept of place of enumeration and is the simplest form of population obtained through a population census. For example, a population present count is a count of every person who spends census night in Australia, based on where he/she is counted, including people on board vessels in or between Australian ports, or on long-distance buses or aircraft. People are counted where they spent census night, which may not be where they usually live. The total of all persons counted on the place of enumeration basis is also referred to as the *de facto* population.

If a 'present-in-area' population distribution is required, it is logical to enumerate each person at the place where he or she is (or was) present at the time of the census. It is not always possible to collect information about each individual at his or her usual residence due to the possibility of an entire household being away from its usual residence at the time of the census. Therefore, there is a need to collect information about such persons at the place where they are found at the time of the census.

Foreign residents and visitors to Australia who are in the country at the time of census are included, and usual residents of the country who are absent at the time of census are excluded from the population present counts.

An enumeration of population present removes complications associated with the application of the concept of place of usual residence, and can reduce the incidence of double counting or missing people. Ideally a population present should include all difficult to enumerate groups, such as nomads and refugees.

A disadvantage of an enumeration of a population present is that it does not provide a full count of usual residents, required for effective planning and policy purposes. In many areas significant numbers of people will not be at their usual residence at the time of enumeration, and the characteristics of absent usual residents may be different from non-residents present. Hence a population present is not a good proxy for a usual resident population. Large seasonal movements of people due to weather changes, holidays and other factors can add to this problem. The ability to produce accurate information on families and households is also reduced to the extent that persons are not enumerated with their usual family or household.

The 'population present' concept can be used in compiling other population statistics such as births by state of registration, divorces by state/territory of the court and overseas arrivals or departures by port of arrival and departure. However, the application of this concept to compiling place of enumeration population counts from a population census is of most relevance to the consideration of population concepts.

A population count on a place of enumeration basis was the most common form of compiling and reporting the population of Australia and areas within Australia prior to 1981.

### MEASUREMENT ISSUES

Population present is measured using a population census. Census information can be tabulated by where the people were present on census night (ABS, 2006a, 2006b). It is relatively simpler to enumerate each person where present on census night, and hence to produce a present-in-area population distribution. Population counts from a census

## CHAPTER 1 POPULATION PRESENT *continued*

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### MEASUREMENT ISSUES

*continued*

based on place of enumeration can be provided for individual Census Collection Districts(CDs), and any aggregation of CDs such as SLAs.

Although the census is timed to attempt to capture the typical situation, holiday resort areas such as the Gold Coast and snow fields may show a large count based on place of enumeration compared with the count based on place of usual residence. There is also an emerging phenomenon referred to as 'grey nomads', or itinerant holiday makers who travel north during the winter months. In addition, in some parts of Northern Australia (Western Australia, Northern Territory and Queensland) Aboriginal and Torres Strait Islander communities may have various geographic areas in which they usually live based on seasons. Therefore, the place of enumeration counts at August may not always represent the areas in which they live for various parts of the year.

Population counts based on place of usual residence cannot capture homeless people as these people may not have an address to report as a place of usual residence. Therefore census data for homeless people can only be collected on a place of enumeration basis. The two groups of people who pose particular difficulties for collecting census data are:

- people who live on the streets; and
- people living long term in boarding houses and refuges.

## CHAPTER 2 USUALLY RESIDENT POPULATION

---

### CONCEPT

The concept of usual residence, in simple terms, is the dwelling a person calls home and resides in on a permanent basis. In most circumstances this makes determining a person's usual residence straightforward. The concept of usual residence is based on the fact that each person has a basic attachment to a particular dwelling. However, this concept embodies two forms of attachment:

- Attachment to the dwelling in which a person lives the majority of the time, known as 'usual residence in a dwelling', and
- Attachment to the dwelling which a person considers to be his/her family home, known as 'usual residence in a household or family home'.

The majority of people live in their family home most of the time, therefore the same dwelling constitutes their usual residence in both cases (ABS, 2004c).

Attachment to the dwelling in which a person lives the majority of the time (usual residence in a dwelling) is the concept used in the Census of Population and Housing. In operational terms it is the dwelling at which a person spends six months or more in the census year. This form of usual residence is concerned with attachment to a place where a person usually lives (i.e. the place of usual residence), rather than the place where he/she was counted on census night or the place that the person regards as his/her home.

This concept of usual residence is used for producing official estimates of the resident population (ERP).

### Place of usual residence

The 2006 census has three questions on usual residence that ask where the person usually lives on census night, and where the person usually lived one year ago and five years ago. Census counts at place of usual residence are based on the reported usual residence in Australia of all people enumerated on census night. Census counts compiled on the place of usual residence basis are less likely to be influenced by seasonal factors such as school holidays and snow seasons, and provide information about the usual residents of an area. Usual residents may have citizenship or not, and they may also include foreigners who reside, or intend to reside, in the country for 12 months or more. The total of all usual residents is generally referred to as the *de jure* population. At the national level, the census count based on usual residence will be lower than the census count based on actual population present due to usual residents of other countries being removed from the usual residence count. However, Australian residents temporarily overseas on census night are included in the usually resident population estimates.

For geographic analysis, population counts based on place of usual residence are generally preferred to those based on place of enumeration since, for a given location, they include people who were away from home at the time of census and exclude temporary visitors. Ideally a usually resident population count should include all difficult to count groups, such as nomads and persons living in areas to which access is difficult. They should also include residents temporarily overseas on census night.

### MEASUREMENT ISSUES

There can be challenges in applying the concept of usual residence if a person could be considered to have more than one usual residence. There may also be those who do not consider themselves to have a usual residence, such as nomadic people and homeless people. Although most people will have no difficulty in stating their place of usual

### MEASUREMENT ISSUES

*continued*

residence, some confusion is bound to arise in a number of special cases, where persons have more than one residence. These cases might include:

- 'Fly-in/fly-out' workers who reside for a fixed period, usually of 2-3 weeks at a time, at a mining camp, construction site, oil rig or similar in a locality which is distant from their home.
- Workers whose jobs are based long term in a locality outside daily commuting distance from their home but who have not moved their main residence, usually for reasons such as extended family ties or a desire not to disrupt their children's education. These situations usually involve weekend, beginning/end of roster or contract and holiday commuting.
- Retired people who spend lengthy periods away from home typically in winter, to take advantage of warmer, dryer weather.
- Children whose parents live in separate dwellings and the children spend part of their time in each dwelling.
- Students who live in boarding houses during school terms and return to the family home during school holidays.
- Members of the armed forces living at a military installation but still maintaining private living quarters away from the installation.

### *Australian diplomatic population*

Australian diplomats working in the Australian missions abroad are not covered in census enumerations. For practical purposes, diplomats and their families who are overseas on a long-term basis (12 months or more) are not included in the Australian ERP.

### ESTIMATED RESIDENT POPULATION (ERP)

The official measure of Australia's population is the estimated resident population (ERP). The ERP is based on the concept of a person's 'usual residence' for a period of 12 months or more within Australia, regardless of nationality or citizenship, with the exception of foreign diplomatic personnel and their families. The concept excludes Australian residents who are overseas for more than 12 months and overseas visitors who are in Australia for less than 12 months. It includes Australian residents who are overseas for less than 12 months and overseas visitors who are in Australia for more than 12 months (ABS, 2003, 2006b). The ERP is based on results of the Census of Population and Housing adjusted for undercount and Australian usual residents temporarily overseas on census night. In the census, people who are usual residents of Australia are allocated a place of usual residence within Australia, based on where they have lived or intend to live for a total of six months or more in the census year (ABS, 2006a). The ERP is compiled as at 30 June of each census year and updated quarterly between censuses for Australia, states and territories. The intercensal estimates of the resident population are revised following the next census.

The ERP measure was developed in the late 1970s, reflecting the increasing mobility of the population, both internationally and within Australia. Prior to the introduction of the ERP, all overseas arrivals and departures were included in the population estimation process regardless of duration of stay. However, increasing volumes of international passenger movements (Australian residents departing overseas as well as overseas visitors to Australia) introduced increasing volatility in post-census estimates of the Australian population. Furthermore, with increased interstate travel, the use of census counts on a place of enumeration basis meant that the populations of Queensland, the Northern Territory and Western Australia were overstated while those of Victoria, South

## CHAPTER 2 USUALLY RESIDENT POPULATION *continued*

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### ESTIMATED RESIDENT POPULATION (ERP) *continued*

Australia and Tasmania were understated due to the fact that the census was usually conducted in winter. For electoral representation purposes it was important that population estimates were changed to a place of usual residence basis.

#### *Data sources*

ERPs are compiled using:

- counts and characteristics of persons enumerated in the most recent Census of Population and Housing;
- net undercount from the Census Post Enumeration Survey (PES);
- birth and death registrations from state and territory Registrars of Births, Deaths and Marriages;
- overseas arrivals and departures data from the Department of Immigration and Citizenship (DIAC);
- Medicare registration changes of address from Medicare Australia which are used as the basis for modelling interstate migration; and
- changes in state and territory defence force levels not accounted for in Medicare changes of address.

The five yearly Census of Population and Housing provides the benchmark for post-census population estimates. Australia has a history of very consistent and timely undertaking of censuses since 1961. The coverage achieved by the Australian census is also considered very good, and compares favourably with censuses in other countries. However, being a large operation, there are always chances for over or under enumeration in a population census of any country. The main method used to measure undercount and overcount is the Population Census Post Enumeration Survey (PES), a national sample survey that is undertaken three to four weeks after census night.

ERP represents the population that resides in a defined locality most of the time, that is, for more than 6 months of the year. The ERP for 30 June of a census year is derived by making the following three adjustments to the usual resident census counts (ABS, 2003).

- An adjustment for census net undercount. The level of net undercount is derived from the PES, adjusted by results of demographic analysis;
- The inclusion of an estimated number of Australian residents who are temporarily overseas on census night and are therefore not covered by the Australian census. The number of such people is estimated from statistics on overseas arrivals and departures based on passenger cards; and
- An adjustment because the census does not fall on 30 June. For example, the 2006 Census was held on 8 August. Backdating of population estimates from 8 August to 30 June 2006 was accomplished using data from birth and death registrations, net overseas migration, and estimates of interstate migration, for the period 1 July to 8 August.

#### *ERP outputs*

The estimated resident population by age and sex at the national and state/territory levels are updated quarterly by the use of demographic statistics (births, deaths, overseas and interstate migration) to provide up-to-date totals of the population of Australia, states and territories. At the SLA level, reliable statistics on migration are not available and the ERP at this level is updated annually, taking into consideration indicators of population change (e.g. dwelling approvals and Medicare enrolments). Estimates by country of birth are published annually at the national level.

## CHAPTER 2 USUALLY RESIDENT POPULATION *continued*

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### *ERP outputs continued*

Population estimates are referred to as either preliminary, revised or final. Preliminary estimates are generally made available five to six months after the reference period. Revised estimates are generally published each September for the financial year ending in the previous year. From 2006-07, revised estimates will be available 21 months after the end of the financial year because of the recent introduction of improved methods of estimating net overseas migration which require additional data over previous methods. Final estimates are published for the previous intercensal period after each census (ABS, 1999, 2006c).

## CHAPTER 3 LEGAL POPULATION

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### CONCEPT

Broadly, people with a legal right or permission to be in Australia together with the Australian diaspora living overseas constitute the legal population of Australia. They consist primarily of persons with Australian citizenship, irrespective of whether these persons are actually resident in Australia at a given time. In Australia, the word 'citizen' can have a specific legal meaning, as defined under the *Australian Citizenship Act 1948*. This legal status confers a range of rights and responsibilities including the right to apply for public office, the right to apply for an Australian passport, and the responsibility to enrol on electoral registers and vote in State/Territory and Federal elections.

Estimation of what the legal population would be is complicated by the fact that there are other groups of people who have a legal right to live in Australia, whether permanently or for a set duration of time. In the context of legal population based on citizenship and permanent and temporary residence criteria, the following population groups could be considered:

- Resident Australian citizens;
- Non-resident Australian citizens;
- New Zealand citizens residing in Australia who are not Australian citizens;
- Non-citizens (other than New Zealand citizens) with a legal right to live and work in Australia permanently;
- Non-citizens with a legal right to live and work in Australia for a fixed period; and
- Non-citizens with a legal right to live for a period but not work in Australia.

Based on a strict citizenship criterion, the first two groups would comprise the legal population of Australia. The next two groups, i.e. New Zealand citizens residing in Australia and other non-citizens who are permanent residents of Australia, are important population groups having a legal right to live in Australia permanently. The last two groups consist of temporary entrants, legally allowed to live in Australia for a prescribed period, and form a significant and increasing proportion of the total number of people in Australia at any one time.

There is another group 'Australian residents (including Australian citizens and non-citizens with a legal right to live in Australia) living in Australia and in another country' which overlaps the groups listed above. There is an increasing trend for some Australian citizens and resident non-citizens to live in more than one country because of employment, education, family and other reasons. A substantial proportion of Australians were either born overseas or are children of migrants. This means many Australians are dual nationals, or could be regarded as dual nationals by another country with rights to freely enter, live, travel and study in the other country. International commuting is on the rise, resulting in people working in other countries or visiting relatives for periods of time. Many people spend large parts of the year living abroad, dividing their time between Australia and their residences abroad. However, few comprehensive official statistics and analyses exist on the movements of such people, thus making it difficult to understand these important and increasing populations.

### Resident Australian citizens

Australian citizenship can be acquired through birth, descent, adoption or a grant of citizenship. People born in Australia of Australian citizen or permanent resident parents become Australian citizens by birth. Migrants to Australia may acquire citizenship upon application and by meeting certain eligibility criteria (for grant of Australian citizenship). Generally, migrants can apply for Australian citizenship when they have been present in

## CHAPTER 3 LEGAL POPULATION *continued*

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### *Resident Australian citizens continued*

Australia as a permanent resident for a total of two years in the previous five years, including 12 months in the two years immediately before they apply (DIMIA, 2004).

Most of the Australian resident population are citizens of Australia, the majority of whom acquired Australian citizenship by birth or descent. A sizeable proportion acquired theirs by grant of citizenship, and relatively few by adoption. Prior to Australia Day 1949, when the *Nationality and Citizenship Act 1948* came into effect, all Australians were British subjects. Since then, over 3.5 million overseas-born people have been granted Australian citizenship (although many became Australian citizens automatically on 26 January 1949) (DIMA, 2007). Among all these groups, those who are living in Australia are considered as resident citizens.

At any given time, the legal population having Australian citizenship who reside in Australia will be lower than the ERP. The reason is that the following groups of people who are in the Australian ERP are not in the legal population based on the citizenship criterion:

- People in the ERP who are permanent residents of Australia, but have not obtained citizenship; and
- People in the ERP who are not permanent residents of Australia but living in Australia for 12 months or more (i.e. long-term visitors, including students).

### *Non-resident Australian citizens*

Some Australian citizens live and work overseas on a permanent or long-term basis. In 2001, the Department of Foreign Affairs and Trade (DFAT) estimated their number to be around 860,000, along with an additional 265,000 persons overseas on a shorter term basis (DFAT, 2003 cited in Hugo et al, 2003). This is a significant number of Australians, and a quite specific group in terms of age, education, income and skill. This group is increasing, as evident from:

- The estimated number of Australian residents temporarily overseas on census night has increased substantially from 189,200 in 1986 to 330,200 in 2001, representing an increase of 75% in 15 years.
- The number of Australians voting in national elections at overseas embassies and consulates has increased from 46,300 in 1986 to 63,000 in 2001, an increase of 36% in 15 years.

Australian citizens living overseas (irrespective of the duration) are considered part of the legal population based on the citizenship criterion. They are eligible to cast their votes from overseas and also to seek assistance from Australian Missions overseas.

Australian citizens overseas for less than 12 months are part of the ERP, while those away for more than 12 months are not.

### *New Zealand citizens residing in Australia who are not Australian citizens*

Since the 1920s, there has been virtually unrestricted movement of people between Australia and New Zealand under various reciprocal entry arrangements. In 1973, the Trans-Tasman Travel Agreement was introduced which allows Australian and New Zealand citizens to enter each others' country freely to visit, live, work and remain indefinitely without a visa (DIMIA, 2004).

## CHAPTER 3 LEGAL POPULATION *continued*

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*New Zealand citizens  
residing in Australia who  
are not Australian citizens  
continued*

On 26 February 2001, the Australian and New Zealand Governments announced new bilateral social security arrangements. Under these arrangements, and unless covered by special transitional provisions, New Zealand citizens are required to obtain formal Australian permanent residence status if they wish to access certain social security payments, obtain Australian citizenship or sponsor people for permanent residence. These changes do not affect the Trans-Tasman Travel Agreement, which remains the primary means by which New Zealand citizens travel to and stay in Australia.

The size of the movement of New Zealanders to and from Australia responds to relative economic conditions in Australia and New Zealand such as differences in relative real incomes and employment opportunities. The number of New Zealanders in Australia increases in times of relative economic buoyancy in Australia and declines when economic conditions are slower (DIMA, 2007).

New Zealand citizens coming to Australia permanently do not enter as part of Australia's annual migration program, but are included in settler arrival and net overseas migration figures. New Zealand citizens are also included in the ERP if their stay in Australia is 12 months or more. At 30 June 2006, a preliminary estimated 477,000 New Zealand born people were included in the ERP (ABS, 2007b). Those without Australian citizenship are not considered part of the legal population based on the Australian citizenship criterion; however, they could be considered part of a broader legal population on the basis of their legal right to stay in Australia indefinitely.

*Non-citizens (other than  
New Zealand citizens) with  
a legal right to live and  
work in Australia  
permanently*

Overseas migration is an important component of population change in Australia. Over the last 25 years, the contribution of net overseas migration to population growth has averaged around 39% per year, but this has fluctuated significantly from a low of 18% in 1993 to a high of 55% in 1989. It is subject to fluctuation from year to year. The average net overseas migration to Australia has been around 90,000 per year over the last 50 years (ABS, 2004a). Permanent migrants under the various migration programs may not take up Australian citizenship until they meet certain criteria, but are allowed to live and work in Australia permanently.

Permanent migrants are non-citizens having a legal right to live and work in Australia for an indefinite period. These people had migrated for settling permanently in Australia. They are mostly included in the ERP, but are not entitled to all the rights and responsibilities applicable to citizens of Australia such as applying for public office, enrolling on the electoral register, and voting in elections. According to the citizenship criterion, this segment of the population is not considered part of the legal population. However, they would form part of a broader legal population based on their right to reside in Australia permanently.

*Non-citizens with a legal  
right to live and work in  
Australia for a fixed period*

The Temporary Entry Program allows people from overseas to come to Australia on a temporary basis for specific purposes. This category consists mainly of people who are long-term overseas students, working holiday makers, business people and other skilled workers.

The majority of the overseas students undertake full-time study in registered courses in Australia. During 2005-06 a record number of visas (190,700) were granted to overseas students (DIMA, 2007).

## CHAPTER 3 LEGAL POPULATION *continued*

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*Non-citizens with a legal right to live and work in Australia for a fixed period continued*

The Working Holiday Maker Program provides for temporary entry and stay of young people (aged 18-30 years) from countries with which Australia has a reciprocal arrangement. They are permitted to stay for up to 12 months once in a life-time, and combine holidaying in Australia with the opportunity to supplement travel funds through incidental employment, and consequently experience closer contact with the local community. They can work for up to three months with any one employer. In 2005-06 over 112,000 working holiday maker visas were granted. Recently, arrangements have been introduced so that people holding a working holiday visa may apply for a second such visa provided they met certain criteria (DIMA, 2007).

Australia has flexible and streamlined temporary entry arrangements which provide for business people and skilled personnel seeking to stay in Australia for up to four years. The Temporary Entry Program's key aim is to enable businesses to enhance international competitiveness through the quick and smooth transfer of key skills. There were a total of 71,200 long-stay business entrant visas granted in 2005-06 (DIMA, 2007).

People in this non-citizen category of the population are not permanent residents of Australia, but are allowed to live and work in Australia for a specified period of time. They are counted as part of the ERP if their stay in Australia is for 12 months or more. They are not part of the legal population based on citizenship or permanent residence criteria, but could be considered part of an even broader legal population that included those with the legal right to be in Australia for a fixed period.

*Non-citizens with a legal right to live for a period but not work in Australia*

People in this group come to Australia with Temporary Entry Visas. They include visitors, overseas students, business people and other temporary entrants on a short-term basis (less than 12 months). Consistent with the growing trend world-wide, short-term temporary entrants form a significant and increasing proportion of the total number of people in Australia at any one time.

Visitors are mostly tourists either here for a holiday or visiting friends and relatives, while some come for short-term business purposes. A small number of people come to Australia for prearranged medical treatment. Most visitor visas are granted for periods of up to three months.

Seasonal fluctuations are most prevalent for individuals arriving in Australia on student and visitor visas. Student arrival numbers increase in the March and September quarters each year reflecting the attendance requirements of the academic year. Visitor numbers are highest during the Australian summer, and are lowest in the middle of the year.

Professionals, managers and government officials from overseas who wish to undertake tailored training programs that are relevant to their further professional development also come under this category. However, they are not large in number.

Visitors who wish to enter Australia for up to three months for business purposes may be granted business visitor visas. They include people transacting business, attending business meetings, events, conferences, pursuing business investment opportunities consistent with their overseas business operations, or undertaking short-term highly skilled project work. In 2005-06, a total of 368,300 business visitor visas were granted (DIMA, 2007).

## CHAPTER 3 LEGAL POPULATION *continued*

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### *Non-citizens with a legal right to live for a period but not work in Australia*

*continued*

There is also a range of other temporary residence visas designed to allow overseas people to come to Australia for a variety of social, cultural, economic and international relations purposes.

While individuals can be part of the legal population at a point in time, only those who have been or intend to be resident in Australia for 12 months or more are included in ERP.

### MEASUREMENT ISSUES

There has been no comprehensive assessment of the legal population of Australia. The five yearly Census of Population and Housing includes a question on Australian citizenship, but does not include questions on the visa status of non-Australian citizens. Australian expatriates are also not included in the Australian population census and there is no comprehensive listing available for them. Department of Foreign Affairs and Trade maintains an online registration service which covers only 10% of expatriate Australians (Hugo et al, 2003).

Some attempts have been made to assess the stock of Australian expatriates (Hugo et al, 2003). However, there are difficulties in measuring the number of citizens living overseas. The US was supposed to include expatriate Americans in its 2010 population census, but will not do so based on the 2004 feasibility study of an overseas enumeration indicating it could not secure a successful count (United States Government Accountability Office, 2004). ABS also informed the Senate Legal and Constitutional Reference Committee that it had no plans to include overseas Australians in the Australian Census as this was not regarded as practical, nor was it likely to yield a quality outcome. ABS, further argued that unsuccessful attempts by Canada and the US to include overseas citizens in past censuses support its position in the matter (Department of the Senate, 2005).

Some statistics on the flows of Australian citizens and non-citizens across Australian borders can be compiled from ABS Overseas Arrivals and Departures data. However, there are no citizenship questions on death registration forms. Birth registration statistics do not collect information on the citizenship or permanent residency status of a child's parents making it difficult to determine which births would be added to an estimate of the legal population of Australia.

Accordingly, considerable estimation and assumptions would be required to compile a series of legal population statistics.

## CHAPTER 4 ECONOMIC POPULATION

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### CONCEPT AND SCOPE

The ABS compiles a range of statistics relating to the Australian economy, including the national accounts, financial accounts, balance of payments, and government finance statistics. These economic statistics are compiled according to international standards, and comply with the *System of National Accounts 1993* (United Nations, 1993) as well as the *Balance of Payments Manual* (BPM5) (International Monetary Fund, 1993).

The scope of an economic population differs from that of the resident population both in terms of what constitutes Australian territory, and what persons are included as resident individuals or in resident households.

Conceptually, the Australian economy comprises economic entities (whether households, non-profit institutions, government units or corporations) that have a closer association with the territory of Australia than with any other territory. Each such economic entity is described as a resident of Australia. Any economic entity which is not regarded as a resident of Australia is described as non-resident. Australia's territory is defined to include:

- territories lying within Australia's political frontiers and territorial seas, and in the international waters over which Australia has exclusive jurisdiction; and
- territorial enclaves abroad, whether owned or rented by Australian governments with the formal agreement of the countries where they are located (e.g. embassies, consulates, military bases, scientific stations, information or immigration offices and aid agencies). Similar foreign enclaves in Australia are excluded from Australia's economic territory.

BPM5 defines an economic territory of a country to consist of the geographic territory administered by the government within which persons, goods, and capital freely circulate. This includes islands belonging to the country where goods and persons may move freely to and from the islands without any customs or immigration formalities.

The ABS definition of economic territory is based on the 2001 *Australian Standard Geographical Classification* (ASGC) plus the Australian Antarctic Territory. There are some uncertainties about the treatment of parts of Australian territory where there are customs and/ or immigration controls between them and other parts of the territory, for example, Norfolk Island.

With the *System of National Accounts 1993* Rev.1 and BPM6, the definition of economic territory no longer has the requirement that persons, goods, and capital circulate freely. Treatment of zones of joint jurisdiction/ administration, based on strength of connection with a primary territory or as a multi-territory zone, is introduced (IMF, 2007).

In Australia's economic statistics, economic entities in the external territories of Christmas Island, Cocos (Keeling) Islands, the Australian Antarctic Territory and Norfolk Island are regarded as part of the Australian economy (ABS, 1998, 2007a).

### CENTRE OF ECONOMIC INTEREST

In recognition of the existence of cases where persons have economic links with more than one economic territory, the concept of predominant centre of economic interest is used. This concept recommends that a person be considered a resident of the economic territory with which they have the strongest links. Each institutional unit is a resident of one and only one economic territory determined by its centre of predominant economic interest (IMF, 2007).

## CHAPTER 4 ECONOMIC POPULATION *continued*

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### *CENTRE OF ECONOMIC INTEREST continued*

In the current standards of determining centre of economic interest, units are considered to be resident in an economic territory where they have a centre of economic interest. This applies to all units, although the nature of this centre of economic interest will differ from, for example, corporations to households. In determining the residence of households, the BPM Version 5 states "a household has a centre of economic interest when it maintains a dwelling, or succession of dwellings, within the country that members of the household treat, and use, as their principal residence" (IMF, 1993). Draft BPM Version 6 adds that the residence of households is to be determined according to the centre of predominant economic interest of its members. Students who study abroad and medical patients who go for treatment abroad continue to be resident in the territory in which they were resident prior to going abroad. This treatment is adopted even though their stay is intended to be for more than a year. In both cases, the rationale for not changing the territory of residence is that the movement to the different territory is considered to have a temporary motivation (IMF, 2007).

For balance of payments purposes, resident households and individuals include all persons residing in Australia's economic territory for one year or more, whose general centre of interest is considered to be Australia. Official diplomatic and consular representatives, armed forces and other government personnel stationed abroad (and their dependents), as well as Australian students studying abroad for one year or more are also considered to be Australian residents because their centre of economic interest remains Australia.

Generally the centre of interest of persons visiting Australia for less than one year is considered to be outside Australia and they are therefore regarded as non-residents but if they stay for one year or more they are considered to be residents. However, irrespective of their length of stay, foreign diplomatic, consular, military and other government personnel and their dependents, and foreign students studying in Australia are considered non-residents for balance of payments purposes.

### *Guidelines and standards*

The guidelines for determining centre of economic interest can often be inconclusive when individuals have strong links to more than one country. The adoption of the principle of a predominant centre of economic interest recognises that individuals may have multiple centres of interest, but each individual should be classified to the territory with which they have the strongest economic connection. For most cases this would be approximated using the practical method of residence/stay for one year or more. However, there are complex cases where alternative guidelines need to be specified.

Resident household members who leave for limited periods of time and return to the household continue being a resident of the economic country in the following cases:

- travellers and visitors for business and personal purposes for periods of less than one year; and
- people working abroad, including seasonal workers, border workers, staff of international organisations who work in the enclaves of those organisations, locally recruited staff of foreign embassies, military bases, etc., and crews of ships, aircraft or other mobile equipment.

## CHAPTER 4 ECONOMIC POPULATION *continued*

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### *Guidelines and standards continued*

In general, the guidelines provided are adequate to determine exclusive residence of an individual or a household in a country. However, there are shortcomings of current treatment.

Under current guidelines, students and medical patients are excluded from the one-year rule, that is, they are deemed to remain as residents of their original country regardless of the length of time spent overseas. This exclusion can lead to inconsistency and ambiguity in the international treatment of these groups. Such inconsistency can arise because of difficulties in capturing students' movements as they often travel regularly between the country of study and the country of original residence. There may be instances where the student or medical patient is recorded as a non-resident by their original country of residence under the one-year rule and is recorded by the country where they are studying as remaining a resident of their country of origin.

With the increase in globalisation, there is a greater scope for individuals and households to have links to several countries. Nowadays, cases of unclear residence are becoming more significant than in the past. Examples are people who have dwellings in two or more countries and commute between them, and people who leave their home for over a year but reside in two or more economies for less than one year, meaning that they may not be considered resident in any country (Davies and Smith, 2004). For individuals with residences in more than one country, consideration should be given to such factors as tax status, citizenship, etc., but the BPM6 does not recommend a specific treatment (IMF, 2007).

The current standards of determining centre of economic interest are inconsistent with those used in the compilation of tourism statistics and in the conduct of population censuses. These standards are also inconsistent with those recommended by the United Nations for defining international migrants.

According to the international standards for tourism (United Nations, 1998b), a person is considered to be resident in a country if he/she:

- has lived for most of the past year (12 months) in that country; or
- has lived in that country for a shorter period and intends to return within 12 months to live in that country.

An international visitor is defined as:

Any person who travels to a country other than in which he/she has his/her usual residence but outside his/her usual environment for a period not exceeding 12 months and whose main purpose of visit is other than the exercise of an activity remunerated from within the country visited. The category of international visitors includes tourists (overnight visitors) and same day visitors.

Foreign students are considered to be residents of the country where they are studying if their length of study is greater than one year.

The standard used to identify residence for population censuses applies the principle of 'place of usual residence'. This concept identifies the geographic place where the person usually resides.

## CHAPTER 4 ECONOMIC POPULATION *continued*

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### Guidelines and standards *continued*

In the United Nations *Recommendations on Statistics of International Migration* (United Nations, 1998b), the definitions of international migrant, country of usual residence, and long-term and short-term migrant are as follows:

*International migrant*: An international migrant is any person who changes his or her country of usual residence.

*The country of usual residence*: The country in which a person lives, that is to say, the country in which he or she has a place to live where he or she normally spends the daily period of rest. Temporary travel abroad for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment or religious pilgrimage does not change a person's country of usual residence.

*Long-term migrant*: A person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence. From the perspective of the country of departure the person will be a long-term emigrant and from that of the country of arrival the person will be a long-term immigrant.

*Short-term migrant*: A person who moves to a country other than that of his or her usual residence for a period of at least three months but less than a year (12 months) except in cases where the movement to that country is for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment or religious pilgrimage. For purposes of international migration statistics, the country of usual residence of short-term migrants is considered to be the country of destination during the period they spend in it.

The standards applied in compiling tourism statistics, international migration statistics and in the conduct of population censuses do not appear to reflect the principle of predominant centre of economic interest (United Nations, 1998b). The one year rule also does not give a good indication of predominant centre of economic interest in the case of students and medical patients. As such, there are differences in the definitions of resident population used in the compilation of economic accounts and in population estimates.

### MEASUREMENT ISSUES

No estimates of the economic population are produced and published by the ABS or any other organisations in Australia. Estimates of the usual resident population are used for calculating various economic indices and rates. Economic population considers students, medical patients and foreign diplomats as residents of their country of origin regardless of the length of time spent overseas. However, these people, except for foreign diplomats, are included in the usual resident population if their stay is for 12 months or more in the country.

## CHAPTER 5 WORKING POPULATION

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### CONCEPT

The working population is based on the concept of place of employment or place of work of employed persons and is determined by the workplace address for the main job held in the enumeration period.

The working population of a geographic area consists of all persons who were employed in that area in the enumeration period.

The working population counts exclude:

- people who are unemployed in the period of enumeration;
- people who are not in the labour force in the period of enumeration; and
- people who are in a designated area to attend school, to shop or to visit but not to work.

Information on how many people are working or looking for work tells us about what is happening in the society and the economy. Information on employment status and workplace address are used to produce a picture of the working population at a local level and among particular groups.

The information about the place of enumeration or place of usual residence (origin) and place of work (destination) are useful to understand the journeys people make to travel to work. Daytime populations of particular areas are also estimated from the information so that services can be located where people will be during the day, rather than where they live.

### MEASUREMENT ISSUES

The five yearly Census of Population and Housing enables the compilation of comprehensive working population counts. However, people overseas on census night or otherwise missed in the enumeration may lead to some under counting of the working population.

While the information on place of work can be used to develop area profiles in terms of the working population, the primary objective is to link place of work information to place of enumeration or usual residence so as to develop journey to work information.

The collection and analysis of statistics on the working population of specific areas (such as remote mining or construction site locations) who are not usual residents of an area can also assist in understanding the mobile population dynamics of these areas.

For more information, see Place of Work (POWP) in the *2006 Census Dictionary* (cat. no. 2901.0).

## CHAPTER 6 SERVICE POPULATION

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### CONCEPT

A substantial amount of this chapter has been sourced from the paper titled 'Concepts of population' which has recently been published in *Population Estimates for Indigenous Health Zones in the Northern Territory* (Zhao et al, 2007).

The ERP produced by the ABS refers to all people, regardless of nationality or citizenship, who usually live in Australia, with the exception of foreign diplomatic personnel and their families. The ERP is based on place of residence and, in spite of its updating and adjustments, it ignores periodic population fluctuations occurring on a daily, weekly or seasonal basis. These fluctuations change the distribution, size and characteristics of the population, which ultimately impact on demand for facilities and services in the area.

'Service population' refers to all persons who need particular services and facilities in an area. There is a rising interest in service populations (ABS, 2004b). A service population count may be required if the population present count or usual resident population count do not accurately represent the demand for, or provision of services in a country or part of a country (United Nations, 2007). Estimates of the size of service populations are needed to help assess the actual or potential demand for goods and services. In many cases other population concepts are used as a proxy for the population to be serviced. These may not always be appropriate. For example, the resident population of a central city area will be a poor proxy for the population to be serviced during daytime hours because of the large number of people who commute in from other areas.

Similarly, Darwin and Alice Springs have many Indigenous people visiting from other areas, and the resident Indigenous population may therefore be lower than the Indigenous population being provided with services in these locations.

In the light of rising interest in service populations to assess the actual or potential demand for goods and services, conceptual clarification and other issues surrounding the concept of service population are discussed here.

### DEFINITION

The concept of service population has no standard accepted definition as yet. In the recent past, various definitions of the service population have been proposed, including:

Those persons who demand goods or services from providers of such products. Such persons may be permanent or temporary residents of the area from which the service is sought, or they may be daytime visitors (including commuters), overnight or short-term visitors (Cook, 1996).

The size and composition of resident and temporary population which creates the effective demand for services and facilities (Bell and Ward, 1998).

All persons who access services and facilities generally provided by the area (Lee, 1999).

A population that demands specified good(s) and/or service(s) in a specified area at or over a specified time (Zhao et al, 2007).

Most of the definitions are based on demand or access to services and facilities. These appear to be applicable in a specific situation or may be operationalised at the local level.

In light of the above definitions and their limitations, a definition is suggested below:

A service population comprises both resident and non-resident populations that happen to be in a specified area, and demand and/or use goods or services over a specified time.

## CHAPTER 6 SERVICE POPULATION *continued*

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### *DEFINITION continued*

The proposed definition covers both the resident population of the area in a specified time and other populations not in the scope of ERP, such as visitors who demand and make use of goods and services. Further, the focus of this definition is both on demand for and use of goods and services.

### *ISSUES AND LIMITATIONS*

The concept of service population is complex and there has not been much research undertaken on it. There are various issues and limitations relating to the conceptual clarification or definition of the service population which are discussed here.

Service populations, by definition, are not discrete and mutually exclusive. Individuals may belong to many different service populations, associated with local areas which may be spatially contiguous or some distance apart.

#### *Type of services*

The definition of population will vary according to which services are being considered. For example, commuter populations being present at a particular locality for parts of the day and seasonal peaks of tourists are very different forms of service populations and reflect the issues that need to be kept in view.

#### *Variation in population*

The population being serviced will vary according to the goods and/or services involved. For example, everyone demands water while only some demand accident and emergency health services. Similarly, most if not all people will demand primary health care in general, but not all will demand treatment for an infectious disease.

#### *Time limit*

A person may not demand a service in a limited time period but may do so when a longer time period is involved. For example, weekday populations may be more important for some services than weekend populations, or average daytime or night-time populations.

#### *Area size*

The size of the area involved will affect the service population. In general, mobility of people means that in a specified time period, the smaller the area the greater the chance of one person being present and serviced in more than one area. A person who lives in or visits two small areas can demand a good or service from both areas. In this case, each area could count this person and in aggregate there would be two persons demanding the service. If the two areas were viewed as comprising one larger area then there would only be one person demanding a service, albeit twice.

#### *Actual or potential service population*

Whether the service population is actual or potential is also an issue. Actual service populations are often referred to as consumers, customers or clients. An actual service population may be equal to or lower than the potential service population. It would equal potential service population where there are no barriers for potential demand to be expressed as demand. Examples of situations in which actual and potential service populations can equate include the service populations for water and sewerage.

#### *Distinction from usual residence*

The difference between the concepts of the service population and the population of usual residents needs to be made clear to data users. Service population include all persons who access services and facilities generally provided in an SLA or other geographic area. Such persons may be permanent or temporary residents of the area

## CHAPTER 6 SERVICE POPULATION *continued*

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### *Distinction from usual residence continued*

from which the service is sought, or they may be daytime visitors (including commuters), overnight or short-term visitors to the area.

Temporary residents are persons living in the SLA whose period of residence, or intended period of residence, is less than six months. These may include:

- Short-term contract/seasonal workers;
- Fly-in/fly-out (rotational) workers;
- Transient Indigenous persons;
- Tourists and other visitors; and
- Former or returning residents such as boarding school or university students returning to a family home for holidays or weekends.

There are day visitors, commuters and day tourists and also average or peak service populations. All these categories of temporary populations are important examples of service populations and need to be effectively taken into account.

### *People with multiple residences*

It is possible for a person to have multiple residences. For the purposes of usual residence statistics, in cases where persons reside in more than one place their usual residence is regarded as the one in which they spend most of their time during the year. However, the issue of multiple residences is important for the service population, particularly in certain local areas. In recent years, living arrangements have become more complex because of various social changes. A number of issues contribute to an increase in the number of people who have multiple residences. For example:

- Increases in divorces and separations have increased the number of children whose parents do not live together. In many such cases the children often divide their time between the two homes under shared care arrangements.
- A number of people have a partner in a separate residence. These people are often living at their partner's residence as well as at their own residence.
- Employment patterns have given rise to alternative living arrangements such as a household member living away from the household for part of the week, or a sustained period of time, such as fly-in/ fly-out workers in mining areas.
- Some people maintain dual residences in different locations for summer and winter recreational pursuits such as a beach house or a country farm house.
- Some people have regular health treatments away from their area of usual residence.

It is therefore important to understand the issues surrounding multiple residences for areas with large fluctuations in population. For a service population they will be accounted for in each area.

### *Daytime population*

Daytime population is one of the important dimensions of the service population. Because of the highly mobile nature of the Australian population, particularly the daytime concentration in certain urban areas, estimates of daytime population are needed to help assess the actual or potential demand for goods and services as well as emergency services planning. The use of resident population may not be appropriate for determining demand for services in these areas. A daytime population may be affected by working commuters, shoppers, tourists, schooling, other education and training, recreation and other business. Such populations are likely to be in inner city areas, attracting large number of shoppers and visitors to educational, cultural and entertainment venues from surrounding areas (Rohlin and Martin, 2002).

## CHAPTER 6 SERVICE POPULATION *continued*

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### *Categories of mobile population affecting service populations*

The types of highly mobile people affecting the size of a service population may include:

- Tourists (short-term overseas visitors to Australia, caravanners, back packers)
- Fly-in/Fly-out workers (mining employees, defence personnel)
- Seasonal workers who move from one area to another based on the availability of work, e.g. fruit pickers, shearers and seasonal harvestors.
- Students living in boarding schools/university dormitories and other accommodation (these may be defined as part of the resident population by ABS depending on circumstances).
- Population groups that move from one area to another on a seasonal basis, e.g. because of the closure/inaccessibility of some remote Northern Australia communities during the monsoon season.
- Population groups that move from one area to another to meet cultural responsibilities, e.g. the temporary depopulation of locations because of the death of a traditional Indigenous person in another community.
- Population groups that move from one area to another - sometimes for weeks or months - to seek services that are not available where they usually live (e.g. health and education).
- Population groups that move from one area to another to attend special events such as a sporting carnival.
- The day-tripper population likely to be in inner city areas, comprising large numbers of shoppers and visitors to cultural and entertainment venues from surrounding areas.
- Commuters who travel daily to the city from other areas for employment purposes (see Chapter 5 Working Population).
- Others - (e.g. refugees/illegal immigrants in detention facilities and persons on short term remand in correctional institutions or lock-ups).

### MEASUREMENT ISSUES

Estimating a service population is a major focus for provision of services. It requires more than an estimate of the total population. There is also need to assess the demand for specified goods and services. Frequent population fluctuations occurring on a daily, weekly, or seasonal basis and affecting the distribution and characteristics of the population of an area as well as impacting on demand for services need to be taken into consideration for applying any appropriate measure for determining service population.

### *Indicators of service population*

Current ABS population estimates do not take account of short-term tourism, fly-in/fly-out workers and other non-usual residents who use the services provided by areas. A number of indicators can be identified on the premise that a rise or fall in the total number of persons serviced by a given area (such as an LGA) would create a corresponding rise or fall in certain indicators within the area (Lee, 1999). Examples of such indicators are household or personal consumption and measures of waste production. There is a need to assess each indicator against certain criteria, regarded as essential for producing reliable service population estimates for the areas.

Indicators of household or personal consumption may include water, electricity, gas, telephone, automatic teller machine usage, retail sale of petrol, milk, bread, newspaper, cigarettes, alcohol, soft drinks, highest selling products in large supermarkets and other smaller shops.

## CHAPTER 6 SERVICE POPULATION *continued*

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### *Indicators of service population continued*

Indicators of waste production may include sewerage flows, volumes of recyclable material collected and volumes of refuse disposed of at the landfill site.

### *Non availability and lack of uniformity of data*

Non availability and lack of uniformity of data may be a major limitation to estimating the size of a service population. Data sources are required to be investigated and identified in relation to various categories such as fly-in/fly-out and short-term workers, tourists, day-trippers, and daily commuters. Data for these and other categories of frequently mobile population contributing to a service population may be partially available within the ABS or some other agencies, such as Tourism Research Australia. Censuses, surveys, interviewing and field observation are various methods for measuring service populations. Each of these vehicles will have their own limitations. With limitations, some of the possible data sources are:

- ABS (population census, business register, survey of tourist accommodation, environment and health surveys)
- Tourism Research Australia and regional tourist authorities
- Departments of Transport and Regional Services
- State and territory planning agencies
- Departments of minerals and energy
- Departments of resource development
- Agencies and businesses providing workers compensation insurance

### *Method for estimation*

There is no established method for determining, or for that matter estimating, the size of a service population. Also there is little literature on the subject internationally.

However, recently the Queensland Government has estimated service population for all nine local government areas within the Bowen Basin in Queensland (Department of Local Government, Planning, Sport and Recreation, 2006). This estimate termed as the Full-Time Equivalent (FTE) population and describes those components of the selected area's service population that live there on a permanent basis (the 'resident' population) and those who live and work in the areas for an extended period but have a usual place of residence elsewhere (the 'non-resident' worker population). The FTE population is compiled by adding the 2006 resident population estimated to be present in the areas on the survey date to the non-resident drive-in/drive-out or fly-in/fly-out worker population taken from the 2006 Survey of Accommodation Providers. This survey collected information on the number of regular occupants of single persons quarters, hotels/motels, caravan parks and other rented accommodation categories. Therefore, the FTE estimates presented in the report do not include short-term visitors to the area such as tourists, overnight visitors or other itinerant workers.

According to the report, the FTE population of the nine shires in the Bowen Basin was estimated to be around 79,900 people at the end of June 2006. This estimate comprised 69,200 residents living in the area at the time of survey and 10,700 non-resident workers living in non-private accommodation.

Criteria need to be devised to assess and identify the indicators of service population size which could be measured at the local area in various jurisdictions within Australia. For example, in the absence of an established method for estimating the daytime population, it may be useful to:

- establish average peak population on weekdays;

## CHAPTER 6 SERVICE POPULATION *continued*

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### *Method for estimation continued*

- assess the extent of the daily variation;
- assess day to day variation over the course of the week; and
- distinguish relative significance of various modes of transport used.

It is difficult to suggest possible data sources or estimation methods for obtaining daytime population which frequently fluctuates. Possible strategies may focus on:

- field observation of inward and outward movements;
- assessing crowding/gathering at shops, restaurants and other public places through surveys; and
- traffic flow and parking surveys.

There may be variations by day and time in the level of a service population of an area. However, most of the available data sources appear to have limitations. Some inference may be drawn from the census data based on the question relating to journey to work. A daytime population in an area may consist of the population which is usually resident of the area plus those who are visiting the area for work and other purposes.

The service population is the most unstatic population and difficult to measure. It is likely to be different from the ERP, that is, higher than the ERP in most areas, yet possibly lower than the ERP in few areas. The census count based on place of enumeration, to some extent, may reflect service population for the day of enumeration only. The results of some studies (Cook, 1998) suggest that even an August based census does not necessarily correspond with a time when Australians are likely to be least mobile. Hence, ERP will be a suitable starting base for further estimation of service population at the LGA level. Lessons learnt from such an exercise may improve the definition and clear conceptual framework to assist in the estimation of service populations.

## GLOSSARY

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<b>Collection District</b>	The Census Collection District (CD) is the second smallest Geographic area defined in the <i>Australian Standard Geographical Classification</i> (ASGC), the smallest being the Mesh Block. The CD has been designed for use in the Census of Population and Housing as the smallest unit for collection and processing. For the 2006 Census, CDs will also be the basis of output for most data and used for the aggregation of statistics to larger census geographic areas. For the 2006 Census, there is an average of about 225 dwellings in each CD. In rural areas, the number of dwellings per CD generally declines as population densities decrease.
<b><i>De facto</i> population count</b>	A count of people wherever they happen to be within the country at the time of the census night. It represents total population present in the country at the time of the census.
<b><i>De jure</i> population count</b>	A count of people where they usually live. It represents all usual residents of the country at the time of the census.
<b>Destination Zone</b>	The index provided by State Transport Authorities which corresponds to an area to which place of work addresses are coded in the Census of Population and Housing.
<b>Dwelling</b>	A dwelling is a structure which is intended to have people live in it, and which is habitable on Census Night. Some examples of dwellings are houses, motels, flats, caravans, tents, humpies and houseboats.
<b>Estimated resident population (ERP)</b>	The official measure of the population of Australia is based on the concept of usual residence. It refers to all people, regardless of nationality or citizenship, who usually live in Australia, with the exception of foreign diplomatic personnel and their families. It includes usual residents who are overseas for less than 12 months. It excludes overseas visitors who are in Australia for less than 12 months. ERP have wide application in many areas. The ABS produce population projections which rely on up-to-date population estimates as their base.
<b>External Territories</b>	Australian external territories include Australian Antarctic Territory, Coral Sea Islands Territory, Norfolk Island, Territory of Ashmore and Cartier Islands, and Territory of Heard and McDonald Islands.
<b>Family</b>	A family is defined by the ABS as two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage (registered or <i>de facto</i> ), adoption, step or fostering, and who are usually resident in the same household. The basis of a family is formed by identifying either a couple, parent-child or other blood relationship. Information on persons temporarily absent on Census Night is considered in family coding.
<b>Full-Time Equivalent population</b>	A measure derived by the Planning Information and Forecasting Unit of the Department of Local Government, Planning, Sport and Recreation, Queensland Government that approximates the total population living in an area at a given point in time, as applied to the nine local government areas of the Bowen Basin. The Full-Time Equivalent population is based on two components - a survey of accommodation providers that counts the number of non-resident workers, and the resident population component estimated to be present in the area at the time of survey.
<b>Household</b>	A household is a group of two or more related or unrelated people who usually reside in the same dwelling who regard themselves as a household and who make common provision for food or other essentials for living; or a person living in a dwelling who makes provision for his or her own food and other essentials for living, without combining with any other person. Households include group households of unrelated persons, same-sex couple households, single-parent households as well as one-person households.
<b>Indigenous</b>	Persons who identify themselves as being of Aboriginal or Torres Strait Islander origin.

## GLOSSARY *continued*

<b>Local Government Area</b>	Local Government area (LGA) is a special unit which represents the whole geographical area of responsibility of an incorporated Local Government Council, an Aboriginal or Island Council in Queensland, or a Community Government Council (CGC) in the Northern Territory. An LGA consists of one or more SLAs. LGAs aggregate directly to form the incorporated areas of state/territories. The creation and delimitation of LGAs, their names and their boundaries vary over time. Further information concerning LGAs is contained in <i>Australian Standard Geographical Classification (ASGC)</i> (cat.no. 1216.0).
<b>Long-term migrant</b>	A person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence. From the perspective of the country of departure, the person will be a long-term emigrant and from that of the country of arrival, the person will be a long-term immigrant.
<b>Mesh Block</b>	Mesh Blocks are a new micro level of statistical geography for Australia. They were first published in draft form in September 2005. In July 2006 they became the smallest unit of the ASGC. Mesh Blocks are about four or five times smaller than CDs but do not necessarily aggregate to CD. They do aggregate precisely to SLAs. The minimum number of dwellings in each Mesh Block will be between 20 and 50 except where a Mesh Block is deliberately designed to have zero population. Mesh Blocks can aggregate reasonably accurately to many different geographical regions, administrative, management and political boundaries. For further information see Information Paper: <i>Draft Mesh Blocks, Australia, 2005</i> (cat. no. 1209.0.55.001).
<b>Net interstate migration</b>	The difference between the number of persons who have changed their place of usual residence by moving into a given state or territory and the number who have changed their place of usual residence by moving out of that state or territory during a specified time period. This difference can be either positive or negative.
<b>Net overseas migration</b>	Net overseas migration (NOM) is net permanent and long-term overseas migration, adjusted for change in traveller duration, intention and multiple movement error.
<b>Overseas-born</b>	Overseas-born people are those who state that they were born in a country other than Australia, those born at sea, and those whose response are classed as 'Inadequately described' or 'Not elsewhere classified'.
<b>Place of enumeration</b>	The place of enumeration is the place at which the person is counted i.e. where he/she spent Census Night, which may not be where he/she usually lives. The population count for place of enumeration is a count of every person, who spends Census Night in Australia, based on where he/she is counted. It includes people on board vessels in or between Australian ports, or on long-distance trains, buses or aircraft. This count is also known as a <i>de facto</i> population count.
<b>Place of usual residence</b>	This is the place where a person usually lives. It may, or may not be the place where the person was counted on Census Night. Each person is required to state his/her address of usual residence in census question. The count of persons at their usual residence is known as the <i>de jure</i> population count. The census counts compiled on this basis are less likely to be influenced by seasonal factors such as school holidays and snow seasons, and provide information about the usual residents of an area. The 2001 Census was the first census where usual residence data was available at CD level. For the 2006 Census, usual residence data will again be available at CD level.
<b>Population census</b>	Process of collecting and compiling demographic, economic and social data at a specified time, pertaining to all persons in a country or in a well-delimited part of a country.
<b>Population projection</b>	The ABS uses the cohort-component method for producing population projections of Australia, the states, territories, capital cities and balance of state. This method begins with a base population for each sex by single-year of age and advances it year by year, for each year in the projection period, by applying assumptions regarding future fertility,

## GLOSSARY *continued*

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**Population projection**  
*continued*

mortality and migration. The assumptions are based on demographic trends over the past decade and longer, both in Australia and overseas. The projections are not predictions or forecasts, but are simply illustrations of the change in population which would occur if the assumptions were to prevail over the projection period. A number of projections are produced by the ABS to show a range of possible future outcomes.

**Post enumeration survey**

Since the 1966 Census, each census has been followed by a Post Enumeration Survey (PES), conducted by specially trained interviewers independently of the Census. Each state and territory is included. The main purpose of the PES is to measure the extent of undercount and overcount in the census. This is achieved by asking the respondents in the PES if they were included on a census form for the household being interviewed, and if there were any other addresses where they may have been included in the census. At each of these addresses (including the interview address), the personal information is matched to any corresponding census forms for these addresses to determine whether a person was counted more than once, or was not counted at all. Results obtained in the PES are used to adjust census counts in the calculation of ERP figures for Australia. The results also provide an assessment of the coverage of the census by field operations including the extent to which dwellings are missed by census collectors.

**Short-term migrant**

A person who moves to a country other than that of his or her usual residence for a period of at least three months but less than a year (12 months) except in cases where the movement to that country is for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment or religious pilgrimage. For purposes of international migration statistics, the country of usual residence of short-term migrants is considered to be the country of destination during the period they spend in it.

**Statistical Local Area**

Statistical Local Areas (SLAs) are, in most cases, identical with, or have been formed from a division of, whole Local Government Areas (LGAs). In other cases, they represent unincorporated areas. In aggregate, SLAs cover the whole of a state or territory without gaps or overlaps. In some cases legal LGAs overlap statistical subdivision boundaries and therefore comprise two or three SLAs (Part A, Part B and, if necessary, Part C). Further information concerning SLAs is contained in *Australian Standard Geographical Classification (ASGC)* (cat. no. 1216.0).

**Usual residence**

Usual residence within Australia refers to that address at which the person has lived or intends to live for a total of six months or more in a given reference year.

**Working population**

The working population is based on the concept of place of employment or place of work. They include all employed persons who report a workplace address for the main job held in the week prior to census night. It is not possible to distinguish between workers working standard hours, and shift workers. However, the persons employed in the week prior to census but no longer employed on census day are still included in the working population.

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