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Productivity Commission

Population and Migration: Understanding the Numbers

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The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

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Foreword

Australia is largely a nation of immigrants. From the First Fleet to the post-war wave of assisted passages, to the present day, migration has always been at the centre of this country's development. As time has passed, however, and our population has grown and spread, it is natural that the consensus that we must 'populate or perish' would give way to more diverse and nuanced perspectives about migration and population growth, and the policy implications.

Debate has ebbed and flowed over the years and flared up again in the lead-up to the federal election. However, that debate arguably was not as well informed by the facts as the topic deserves. Many numbers were cited, drawing on various demographic concepts, but these often appeared contradictory or based on only part of the story. As a consequence, the public is likely to have been left confused, bemused or misled on what is a key public policy issue.

In this Research Paper, the Commission has sought to improve the information base for public discussion by describing the main demographic trends and what lies behind them. That said, it does not seek to be exhaustive, but rather to focus on those features that seem most important.

The Commission is very grateful to the research team which assisted it on this project, led by Patrick Jomini in its Melbourne office. The paper benefitted from comments on an earlier draft by two referees, Professor Graeme Hugo, Director of the National Centre for Social Applications of Geographical Information Systems, University of Adelaide, and Dr Heather Booth, Associate Professor at the Australian Demographic and Social Research Institute, the Australian National University.

The Commission of course remains responsible for the views expressed and other content in the paper and would welcome further feedback on it.

Gary Banks AO
Chairman
December 2010

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Abbreviations

ABS	Australian Bureau of Statistics
DIAC	Department of Immigration and Citizenship
GNI	Gross National Income
GSM	General Skilled Migration
MODL	Migration Occupations in Demand List
NOM	Net Overseas Migration
OAD	Overseas Arrivals and Departures
SOL	Skilled Occupations List
TFR	Total Fertility Rate

Key points

- Since the 1980s, net overseas migration has overtaken natural increase as the major contributor to Australia's population growth.
- Although the total fertility rate in Australia has risen recently, it is still only half what it was in the early 1960s.
- Over the past century, life expectancy has increased significantly. This has mitigated the decline in natural increase and been the main contributor to the ageing of Australia's population.
- Migration flows are shaped by the economic and social motivations of migrants and by government policy in Australia.
  - Only the permanent migrant intake is controlled *directly* by the government, but migration is also influenced indirectly through other policy settings and conditions.
- Net overseas migration has grown strongly during the past ten years, with most of the growth being in the 'temporary' categories.
  - Temporary migration contributes to Australia's population growth in the long term as well as short term. In the last five years, many overseas students and skilled temporary migrant workers obtained permanent residency onshore.
- The Humanitarian Program is a small component of the total migrant intake. Refugee visas granted to unauthorised arrivals do not increase its size.
- Australia's population is highly urbanised. In recent years, population growth in capital cities has exceeded growth in most other parts of the country.
- Future population levels are sensitive to even minor variations in the components of population change and cannot be predicted with accuracy.
- The economic effects of immigration and population growth are diverse, depending on source, composition and context.

1 Introduction

Population growth, and in particular immigration, have long been the subject of public debate in Australia. The release of the third Intergenerational Report — notably its well-publicised projection of a 35.9 million population by 2050 — recently returned the issue to the fore.

That debate revealed widespread misconceptions about:

- the rates of current and likely future population and immigration growth
- the characteristics and drivers of population growth — its sources, composition and geographical distribution
- the implications for economic growth and employment, environmental sustainability, and quality of life.

Much of this confusion may be attributed, paradoxically, to the wealth of available data on population, immigration and related concepts. The complexity of these data can lead to misinterpretation or inadvertent misapplication of particular types of data to support analysis for which they are not suited. At other times, data may be deliberately used selectively or out of context.

Some useful attempts have been made to make population-related statistics more accessible to the general public. The Australian Bureau of Statistics and the Department of Immigration and Citizenship — the organisations responsible for collecting the data — produce detailed supporting publications explaining how the data are collected and what the statistics mean. The Australian Parliamentary Library has recently produced two papers explaining key concepts relating to migration statistics and examining migration trends (Philips, Klapdor and Simon-Davies 2010; Spinks 2010). Prominent demographic researchers, such as Peter McDonald, Graeme Hugo, Bob Birrell and others, have written papers examining particular aspects of population and migration statistics.

The aim of this paper is to 'demystify' population-related statistics further and to promote a clearer understanding of what has been happening. The paper consolidates and interprets statistical evidence from various sources, and seeks to shed light on issues that appear to have been overlooked. It provides a basic context for, and general explanations of, the key population-related issues of fertility and mortality, overseas migration, geographical distribution and population projections.

The paper does not attempt to provide an in-depth examination of the reasons behind the population trends. Nor does it seek to be comprehensive in its coverage of population and migration statistics. Rather, the intention is to focus on those areas of greatest interest (and often misunderstanding) that are relevant to the Australian population debate.

The next chapter looks at the two components of population growth — natural increase and net overseas migration — and how they have contributed to Australia's population over the past few decades.

Chapter 3 examines in greater detail the determinants of natural increase — fertility and mortality — and presents recent trends. This chapter considers possible factors behind recent increases in fertility and declines in mortality, and also discusses how the changing age-sex structure of the population can affect natural increase.

Chapters 4 and 5 look more widely at overseas migration. They explain migration concepts, statistics and recent trends, Australia's migration policies and programs, and how the different migration programs affect population growth.

In chapter 6, discussion turns to a sometimes-overlooked feature of the population debate — the geographical distribution of population and its growth.

Chapter 7 tackles the topic of population projections, such as those published in the Treasury Intergenerational Reports. The chapter sheds light on how these projections are constructed, their features and limitations, and compares recent Australian population projections from a variety of sources. It also looks at how the age structure of the population might change in future years, and how projections are affected by changing assumptions about fertility, mortality and migration.

Finally, chapter 8 looks at the potential implications of migration and population growth for economic growth and community wellbeing.

2 Population growth and its components

Key points

- The official measure of Australia's population is the 'estimated resident population'. At the end of March 2010, this amounted to 22.3 million people.
- Australia's annual population growth rate since 1960 has averaged 1.6 per cent.
- Population growth results from natural increase (an excess of births over deaths) and net overseas migration (the difference between immigration and emigration).
- Other aspects of population change include the distinction between permanent and temporary movements, the distribution of population among regions, and the characteristics of immigrants and emigrants, such as age and education.
- The total number of people added to Australia's population through net overseas migration has fluctuated markedly over time, with rapid growth in more recent years. This contrasts to natural increase which, while trending downwards over the longer-term, has been more stable.

What is the 'population'?

Australia's population is most broadly defined as the number of people residing in this country and is measured as a *snapshot at a particular time.* These measures are commonly referred to as stock data. On the other hand, flow data measure changes in the stock *over a period of time* (box 2.1).

Box 2.1 **Stocks, flows, and population**

In general, *stock data* measure the quantity or value of a variable at a particular point in time, whereas *flow data* measure changes in that quantity or value over some period of time. For example:

- The number of people living in Australia at 30 June 2010 is a stock measure.
- The number of people added to Australia's population during the period 1 July 2009 to 30 June 2010 is a flow measure.

Most of the data in this report are flow data, used to show the rate of population growth (and its components) over a certain time period. However, in some cases, stock data may be more useful than flow data.

- If there is a very high level of turnover in a particular category, stock data can provide an important counterpoint to flow data. For example, some three million people may come to Australia on a tourist visa in a single year, but these visitors usually stay for such a short period that the total stock of temporary visitors at any point in time is far smaller.
- Stock data may also be better suited for international comparisons. For example, in many countries migration flow data are either not collected or not reliable. In those cases, comparing stock data (which are more universally available) is the best option.

The official population measure used by the Australian Bureau of Statistics (ABS) is the 'estimated resident population'. This is based on the population usually residing in particular locations and includes all people, regardless of nationality or citizenship (with the exception of foreign diplomats and their families), *who have lived in Australia for 12 out of the past 16 months*. It is computed as at 30 June in each census year and updated quarterly. These 'intercensal' population estimates are revised following the release of the next census to ensure consistency (ABS 2008c).

The estimated resident population method employed by the ABS is just one of several ways in which population can be defined and measured (box 2.2).

The two components of population growth

Population growth refers to the change in the estimated resident population over a period of time. It can come from only two sources:

- natural increase
- net overseas migration.

Box 2.2 **Defining population**

Although the official measure of Australia's population is given by the estimated resident population, as estimated by the ABS, there are a number of ways in which population can be defined and measured. Some researchers, such as Hugo (2006), argue that increased flows of people and the advent of multiple citizenship require broader definitions of population to be considered.

The ABS (2008c) has defined several alternative concepts of population, including:

- place of enumeration — based on where people are at the time of a population count
- usually resident population — relates to where people reside
- legal population — comprises those with a legal right or permission to be in Australia, along with the Australian diaspora living overseas
- economic population — uses the concept of the centre of economic interest of people
- working population — based on place of employment
- service population — refers to all people requiring particular services and facilities in an area.

Sources: ABS (2008c); Hugo (2006).

Natural increase is straightforward

Natural increase is the easiest to define. It is simply the population growth that results from the difference between the number of live births and deaths over a specified period. An important influence on the number of births and deaths in a period is the age-sex structure of the population.

What is net overseas migration?

There are various ways of defining and measuring migration, but the relevant metric adopted in Australia is 'net overseas migration' (NOM). NOM is defined as the difference between those who have stayed in, and those who have been absent from, Australia for at least 12 out of the past 16 months. It is affected by both temporary and permanent migration to and from Australia (box 2.3).

When considering population growth and its components, net overseas migration is a more appropriate concept than *permanent* immigration and emigration. This is because many migrants regarded as temporary, such as foreign students, can add to the population for what may amount to several years (the reverse is true for those

temporarily departing Australia). Just like permanent residents, these people require goods and services, such as food, accommodation and transport, and in many cases contribute to Australia's labour force and tax revenue. They are, therefore, part of the resident population when considering these and other economic and social impacts.

Box 2.3 Net overseas migration: some key terms

Net overseas migration (NOM): the difference between immigration and emigration. (The definition of this measure has changed recently — see chapter 4.) The estimates of NOM are based on a traveller's actual duration of stay or absence using what is termed the '12/16' rule. To be included in the estimated resident population, a traveller must reside in Australia for at least 12 months during a 16-month period. This rule therefore takes into account people who may have left Australia briefly but returned and remained residents for 12 out of 16 months. It also excludes people who are in Australia for brief periods, but who primarily live overseas.

NOM arrivals: all overseas arrivals who contribute to NOM. It is the number of incoming international travellers based on a duration of stay using the 12/16 month rule.

NOM departures: all overseas departures who contribute to NOM. It is the number of outgoing international travellers based on a duration of absence using the 12/16 rule.

Source: ABS (2010a).

In short, as depicted in figure 2.1, annual population growth is the change in the estimated resident population in a single year caused by the combination of NOM and natural increase.

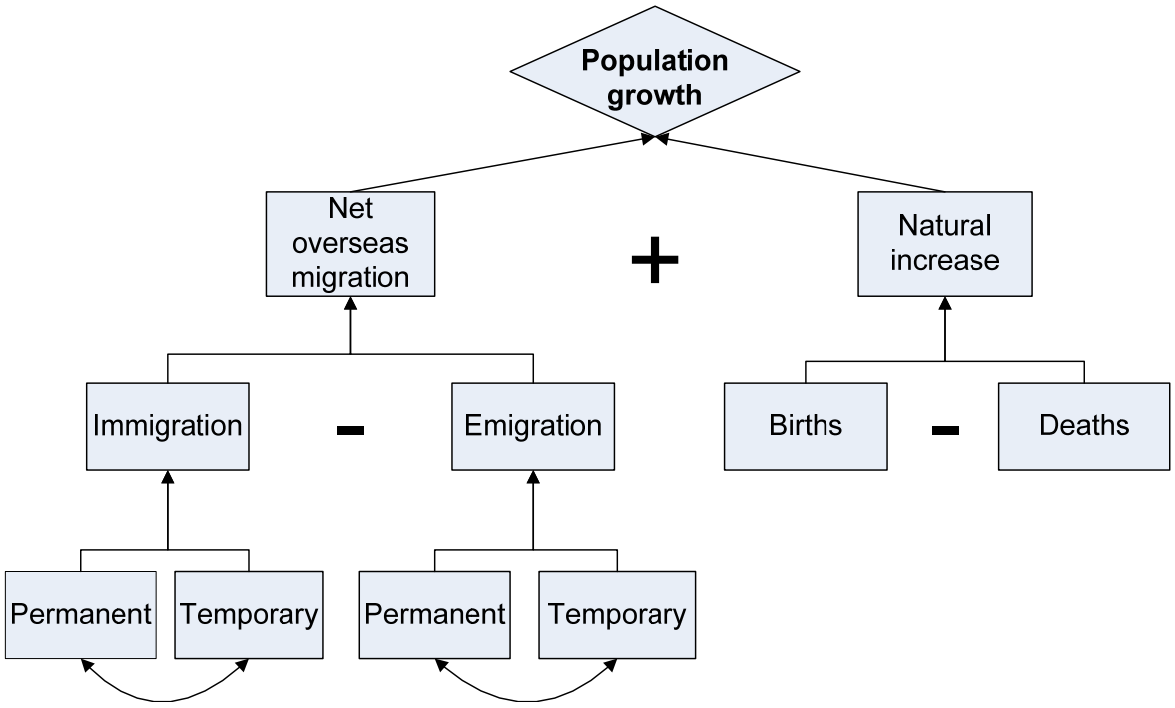
Other dimensions of population and its growth

In addition to these issues of magnitude, population and population growth have other important dimensions, including:

- *dynamic* — some changes in the population are temporary while others are long term or permanent.
  - For example, natural increase and the permanent component of NOM obviously add to Australia's population in the long term (though some permanent migrants may change their initial intention to settle and later emigrate)
  - But temporary migration can also affect Australia's population in the long term, as well as in the short term. If net temporary migration is consistently positive, Australia's population will be commensurately greater. In addition, a proportion of temporary migrants obtain permanent residency after arrival.

- *geographical* — population growth does not occur uniformly across Australia, with population growing faster in some areas than others
- *compositional* — the differing characteristics of those who contribute to population growth can influence the population's:
  - age–sex structure
  - educational and skill mix
  - ethnic composition.

Figure 2.1 **Components of population growth**

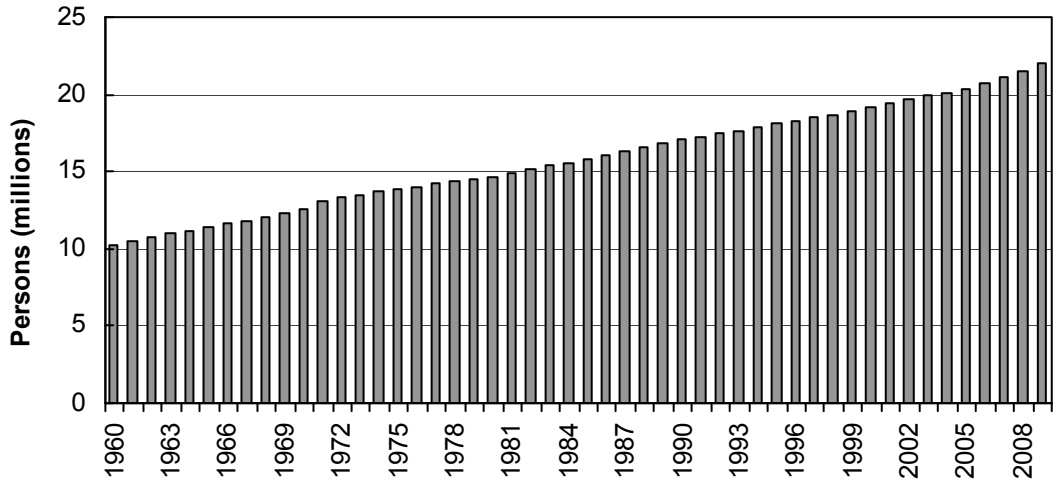


Main trends in Australia's population growth

At the end of March 2010, Australia's resident population was estimated by the ABS to be just under 22.3 million people (ABS 2010a). (This is roughly 0.3 per cent of the world's population.)

Australia's population has increased at an average annual rate of approximately 1.6 per cent since 1960, more than doubling in size (figure 2.2). This is a higher growth rate than for most OECD countries. Annual population growth has fluctuated over the years, accelerating rapidly in recent years (largely due to rising NOM).

Figure 2.2 **Australia's population since 1960**[a,b]

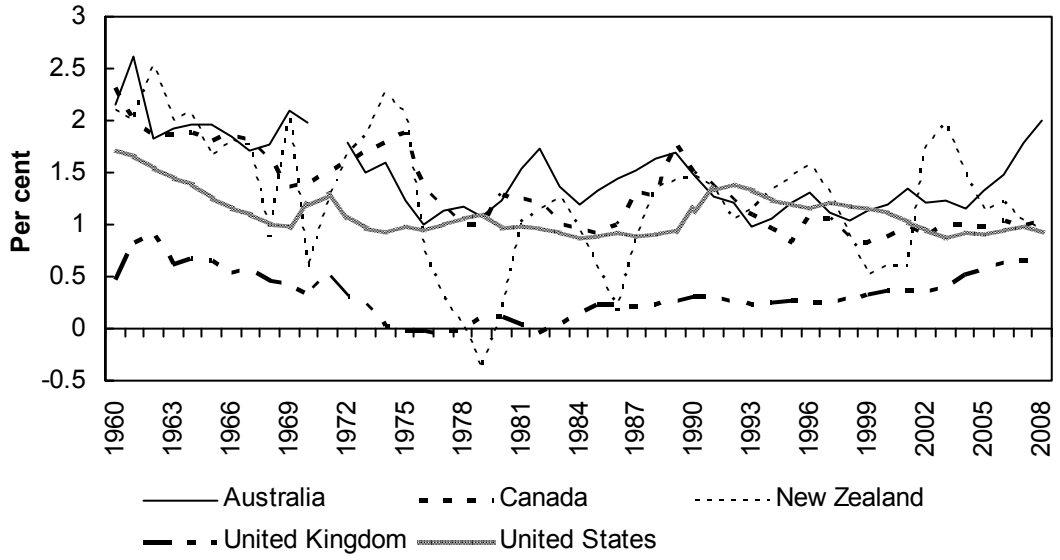


a End of June. **b** Prior to 1971, population estimates were based on the number of people present in Australia. Data from 1971 onwards use the estimated resident population.

Data sources: ABS (2008a, 2010a).

In 2008-09, Australia's population grew by more than 2 per cent, a rate not seen since the 1960s (figure 2.3). However, latest data for the year to March 2010 indicate that the annual growth rate had declined to 1.8 per cent (ABS 2010a).

Figure 2.3 **Population growth rates vary across countries**[a,b]



a Australian data contain a break in the series in 1971 due to a change in the ABS methodology of estimating population, caused by the introduction of the estimated resident population measure. **b** Due to a 2006 change in the ABS method of measuring NOM, which affects the measured population growth rate, Australian data for years prior to 2006 are not strictly comparable with data for subsequent years.

Data sources: ABS (2008a, 2010a); World Bank (2010).

Components of Australia's population growth

Recent years have seen a reversal in the relative contributions of natural increase and NOM to population growth. The number of people added to Australia's population via NOM has fluctuated significantly from year to year.[1] Natural increase has exhibited greater stability, averaging around 130 000 a year during the period (table 2.1).

Table 2.1 **Components of Australia's population growth**[a]

	1973	*1982*	*1991*	*2000*	*2009*[b]
	'000	'000	'000	'000	'000
Births	255.8	237.1	261.2	249.3	297.1
Deaths	111.3	111.0	119.6	128.4	143.7
Natural increase	**144.5**	**126.1**	**141.6**	**120.9**	**153.4**
NOM arrivals	192.4	210.7	236.4	305.1	532.8
NOM departures	135.9	87.7	141.6	197.8	219.3
Migration adjustment[c]	..	5.2	-8.3	..	..
NOM	**56.6**	**128.1**	**86.4**	**107.3**	**313.5**

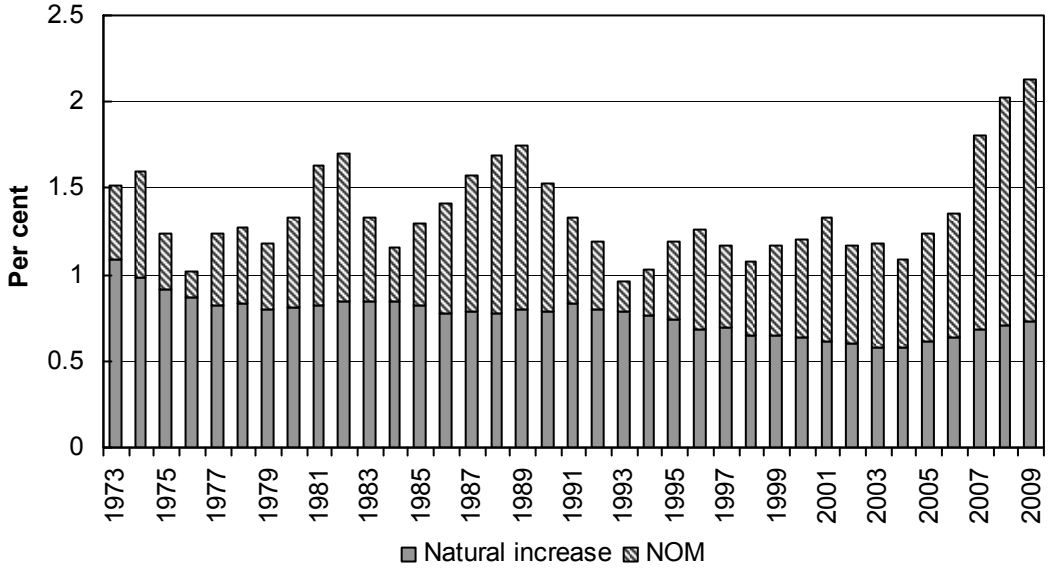
a End of June. **b** NOM data for 2009 are calculated using a '12/16' rule to determine NOM arrivals and NOM departures, whereas previous years used a '12/12' rule. Accordingly, NOM data for 2009 are not strictly comparable with data from previous years. **c** Refers to adjustments made to reflect differences between stated travel intentions and actual travel activities. **..** Not applicable.

Sources: ABS (2008a, 2010a).

Between 1971-72 and 1979-80, NOM (not counting descendants of the immigrants) accounted for around 30 per cent of population growth on average. In the three years to 2008-09, however, this increased to roughly 65 per cent (figure 2.4).

1 NOM data prior to 2006-07 are not directly comparable with those from later years, due to a change in the methodology of calculating NOM. If the old methodology were applied, NOM figures for the latest years would likely be 15-20 per cent lower than those presented (discussed in chapter 4).

Figure 2.4 **Contributions of natural increase versus NOM to Australia's population growth**[a,b]



a The natural increase and NOM presented here do not necessarily sum to the total change in population in each year. Since 1976-77, the ABS has recorded this as the 'intercensal discrepancy', which is excluded from the figure. **b** Migration data prior to 2006-07 used a '12/12' rule to determine NOM arrivals and NOM departures, whereas data from 2007 onwards use the '12/16' rule. Thus, data between periods are not strictly comparable.

Data sources: ABS (2008a, 2010a).

3 Fertility and mortality

Key points

- Between 1961 and 2001, the total fertility rate in Australia declined steadily from 3.5 to 1.7 births per woman on average. However, it has subsequently risen to nearly 2.
  - The overall decline in Australia's fertility is broadly similar to that in other English-speaking developed countries.
- It is hard to be definitive about what has caused the more recent increase in fertility, but it is likely to be due to:
  - some older women deciding to have children after initially postponing that decision ('tempo' effect)
  - some women deciding to have children because of improved economic conditions ('quantum' effect).
- Over the past century, male and female life expectancy at birth has increased greatly.
  - It is relatively high in Australia compared to other developed countries.
- The decline in the population's natural increase over the past century has resulted from a decline in the number of births as a proportion of the population — mitigated by improvements in life expectancy and reduction in mortality.

Over the past 30 years, around 130 000 people on average were added to Australia's population every year through natural increase. The contribution of natural increase to total population growth has varied, generally trending downwards over time. Latest data indicate that natural increase accounted for around 40 per cent of Australia's population growth in the year to March 2010 (ABS 2010a).

The natural increase component of population growth has increased again somewhat in recent years, with some commentators labelling this period a new 'baby boom'. This chapter looks at trends in the determinants of natural increase.

3.1 Recent trends in fertility

'Fertility' has declined in Australia over the past 50 years. This has coincided with significant economic and social changes over this period, including more effective

birth control methods and greater opportunities for women to participate in the workforce.

In 1961, the total fertility rate (TFR) — the most commonly used measure of fertility (box 3.1) — reached a high of 3.5 births per woman. By 2001, the TFR had fallen to 1.7 births per woman (figure 3.1). Since 2001, this trend has reversed somewhat, with the TFR rising to 1.96 in 2008, before falling slightly to 1.9 in 2009 (ABS 2010e).

Box 3.1 **Total fertility rate**

The total fertility rate (TFR) is constructed by adding together all the age-specific fertility rates in a given year (and dividing by 1000). Age-specific fertility rates are calculated as the number of births by women of a specific age per 1000 women of that age, in a given year.

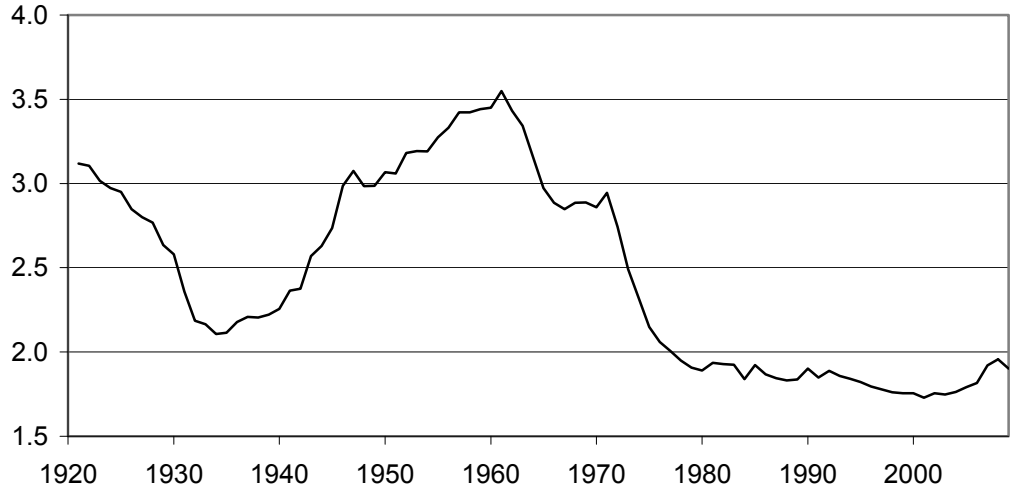
The TFR can be thought of as the average number of births that would be produced by a woman over her lifetime if she experienced the current age-specific fertility rates over her life. The total fertility rate is a 'synthetic' measure of fertility, and it is unlikely to correspond to the actual fertility experiences of women over their lifetime. However, it can provide timely information on changes in fertility patterns. The alternative measure, 'completed fertility rate', shows the actual fertility experience of women, but data for each woman would only be available at the end of that woman's childbearing years.

Source: Lattimore and Pobke (2008).

The evolution of Australia's fertility over the past 50 years has been broadly similar to that of other English-speaking developed countries (figure 3.2). New Zealand, the United Kingdom, Canada and the United States have all experienced a significant reduction in fertility rates since the 1960s. Furthermore, fertility rates in both New Zealand and the United Kingdom have increased noticeably over the past decade. In 2008, Australia's TFR of 1.96 births per woman was comparable to the TFR of the United Kingdom (1.94), higher than Canada (1.6), and slightly lower than New Zealand (2.2) and the United States (2.1).

Figure 3.1 **Australia's total fertility rate, 1921–2009**

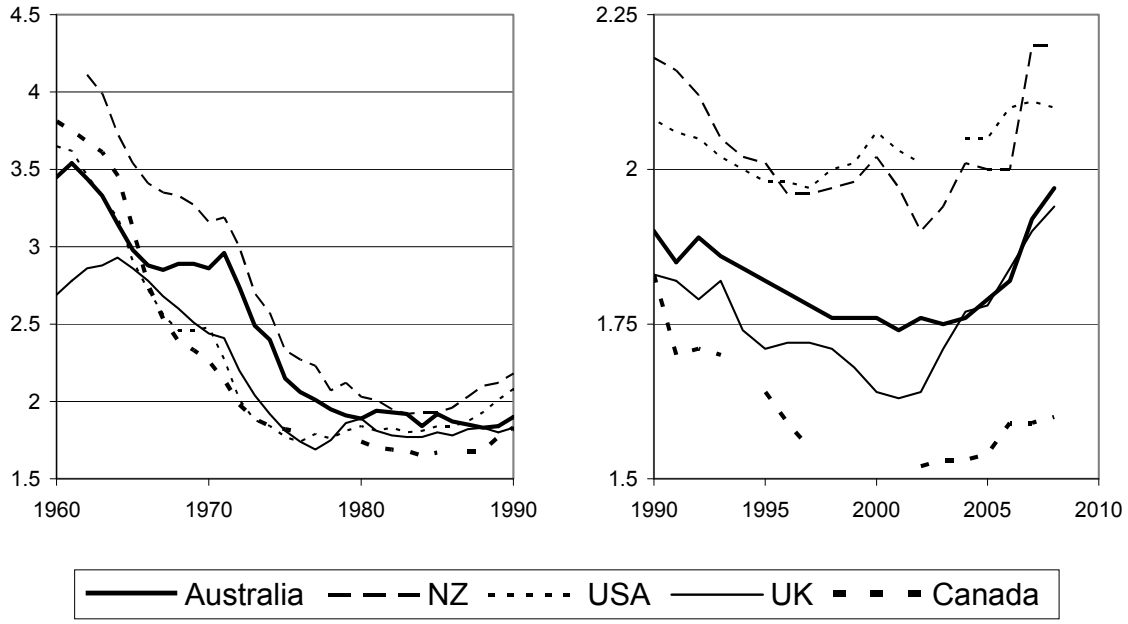
Births per woman



*Data source*s: ABS (2008a; 2010e).

Figure 3.2 **International comparisons of the total fertility rate since 1960**

Births per woman



Data source: World Bank (2010).

What has caused the recent increase in fertility?

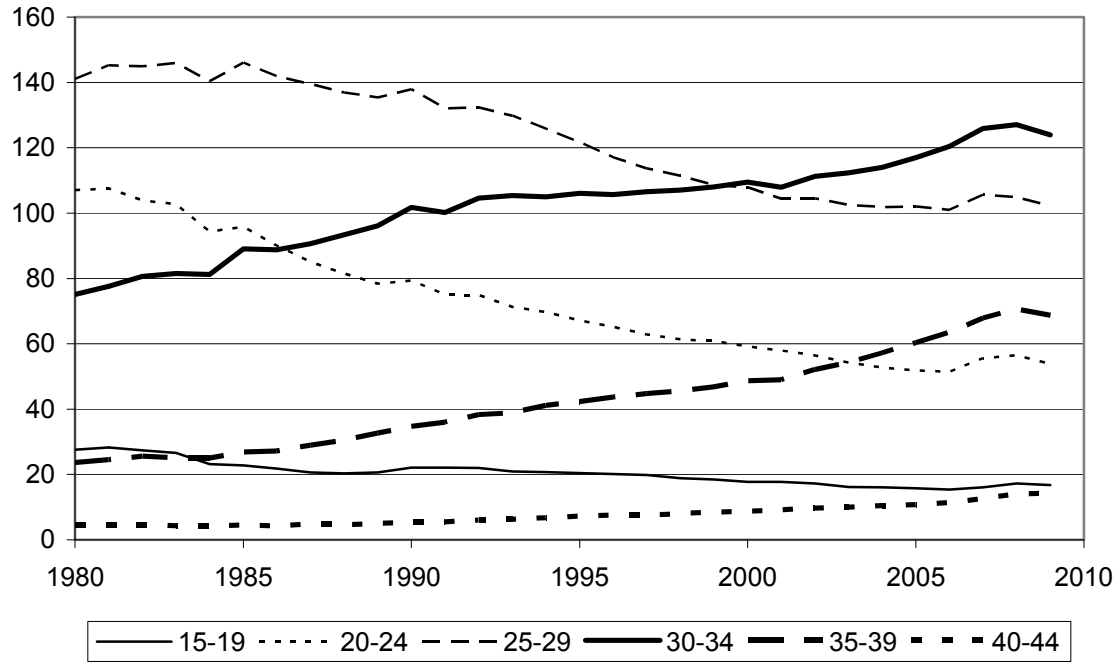
Changes in the TFR can be disaggregated into changes in the timing (tempo effect), and changes in the ultimate number (quantum effect), of births over a woman's lifetime. Analysing age-specific fertility rates can provide some insights into which of these factors led to the recent increase in total fertility.

Between 1990 and 2000, the fertility rates for women aged over 30 increased substantially, whereas for women under 30 they decreased (figure 3.3). These trends suggest that over this period women were delaying having children.

Recently, three sub-trends in age-specific fertility rates have been apparent:

- The fertility rates for women aged over 30 have increased since 2001 at a greater rate than previously.
- The fertility rates of women aged under 30 increased slightly between 2006 and 2008.
- The fertility rates of all women under 40 decreased in 2009.

Figure 3.3 **Varying trends in age-specific fertility rates**



Data sources: ABS (2008a, 2010e).

There are three distinct, yet inter-related, demographic factors that have contributed to the recent increase in fertility in Australia, two of which relate to the tempo effect:

- *'recuperation'* — older women 'catching up' on previously postponed births.
- *'anticipation*' — younger women bringing forward childbearing that would have otherwise occurred later in their lives.
- *'quantum'* — women having more babies over the course of their lifetime.

It is difficult to ascertain the degree to which each of these factors has contributed to the recent rise in fertility. A definitive answer would only be possible when completed fertility rates can be calculated for all women currently of child-bearing age (that is, in about 25 years).

That said, between 2001 and 2006, it is likely that 'recuperation' was the primary factor contributing to an increase in the TFR, as only the fertility rates of women aged over 30 increased in that period. However, after 2006, fertility rates for women of all ages increased, suggesting that anticipation and quantum effects may have been present as well.

Lattimore and Pobke (2008) suggest that, aside from the recuperation effect, buoyant economic conditions are likely to have been the primary reason that fertility increased between 2006 and 2008. Favourable economic conditions and increasing access to part-time jobs have reduced the financial risks associated with having children and lowered the costs associated with exiting and re-entering the labour market. Economic conditions, and in particular, the global financial crisis, may also have been the reason for the decline in the TFR in 2009.

Family policies, such as the 'Baby Bonus' and child care subsidies, are likely to have played a relatively small part in the recent increase in fertility. Some estimates show that the changes in such payments that occurred over the last decade have only reduced the cost of having children by around 3 to 4 per cent (Heard 2010; Lattimore and Pobke 2008).[1]

3.2 Recent trends in mortality and life expectancy

The past century has seen remarkable improvements in life expectancy — by around 25 years between 1920 and 2008 (figure 3.4). Australian Bureau of Statistics

[1] Heard (2010) concluded that there is uncertainty surrounding the effectiveness of the Baby Bonus in increasing fertility, but that it is likely that the introduction of the bonus improved the accuracy of birth registrations, as registration was a requirement for claiming the bonus.

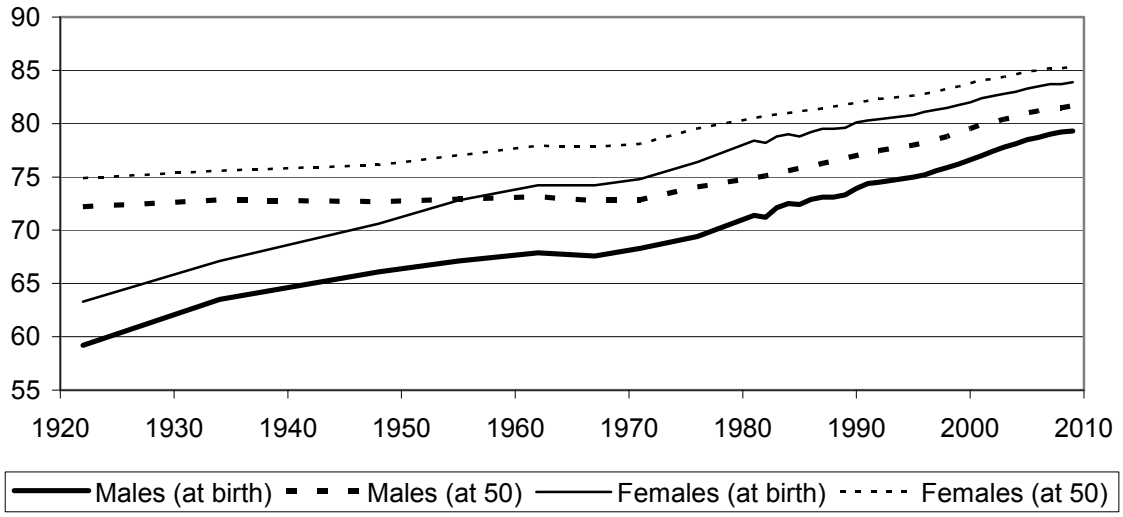
(ABS) data for 2007–09 indicate that life expectancy at birth for Australian males and females was 79.3 years and 83.9 years respectively.[2] A woman who was born in 1945 could, on average, have expected to live for about 70 years. Today, such a woman's newly-born granddaughter could expect to live 14 years longer.

The increase in life expectancy that has occurred in the past 90 years has been due to declines in the mortality of different age groups at different times. For instance, between 1920 and 1970, the increase in life expectancy was primarily due to a decline in infant and child mortality. Since 1970, the increase in life expectancy has primarily been due to increases in longevity — the life expectancy of 50-year old males and females has increased by 8.5 and 7 years, respectively (figure 3.4).

The decline in infant and child mortality and the increase in longevity that has occurred over the last century can be attributed to:

- medical advances such as improvements in diagnostics, procedures, devices and medicines (PC 2005a)
- improvements in sanitation
- better nutrition.

Figure 3.4 **Life expectancy has been improving in Australia**[a]

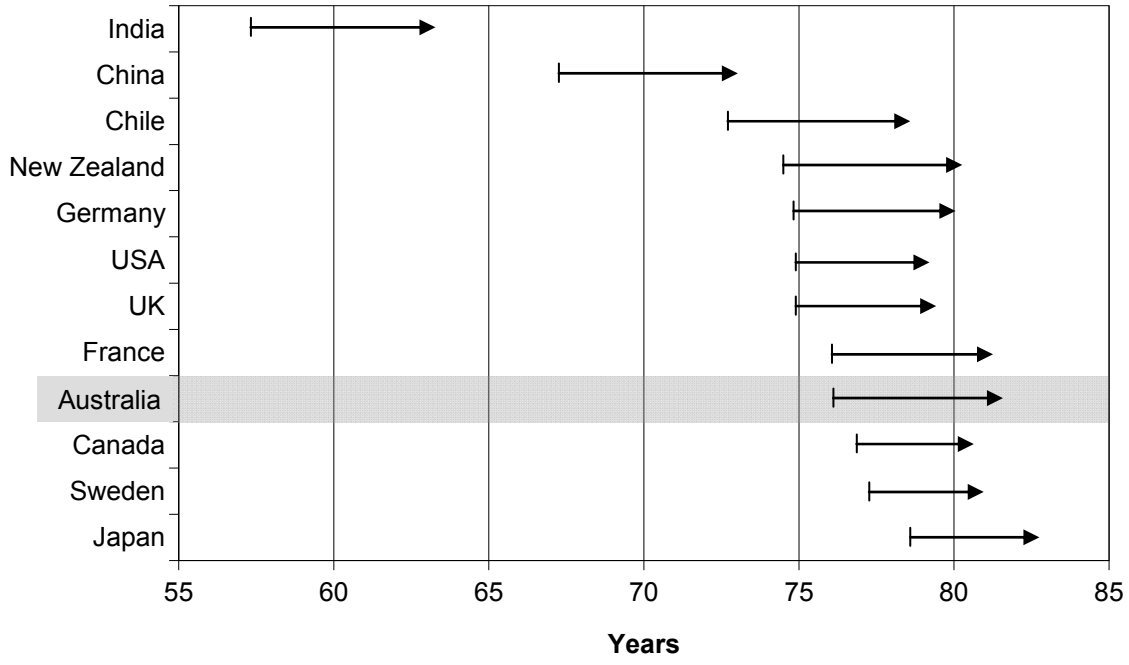


a For the purpose of this figure, where ABS data are an average over multiple years, the data are attributed to the last year included in the average.

Sources: ABS (2008a, 2010f).

2 Life expectancy at birth is a synthetic measure and is based on the age-specific death rates for a particular year. If longevity is expected to increase in the future, then this measure would underestimate actual outcomes.

Figure 3.5 **Improvement in life expectancy for selected countries**
Change from 1985–90 to 2005–10



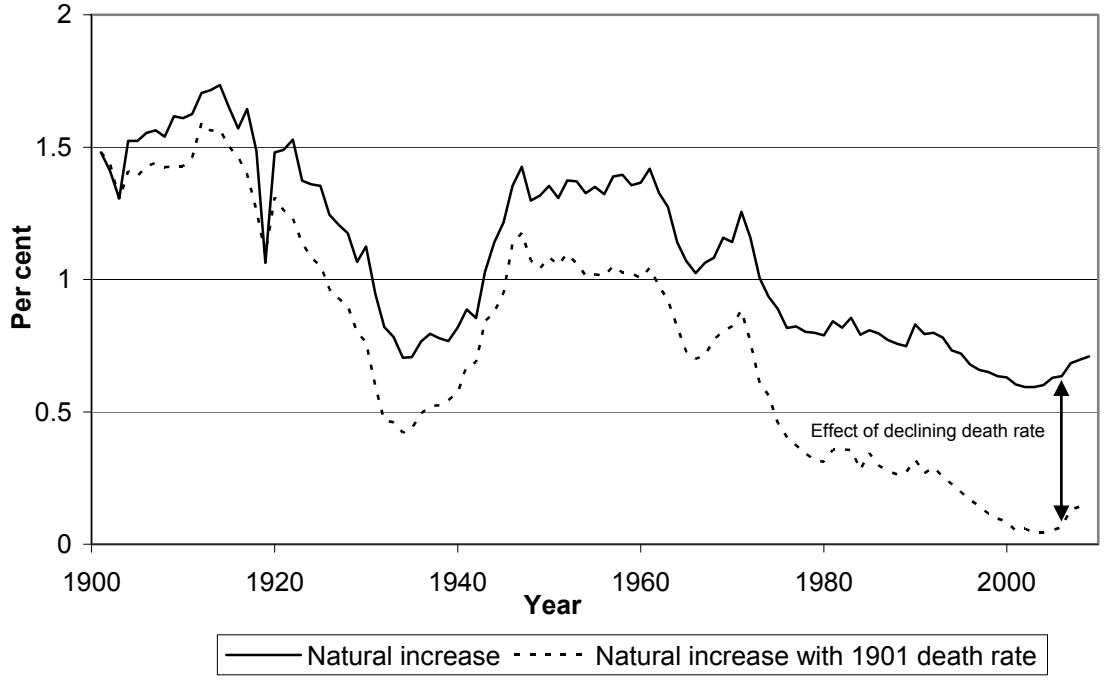
Source: United Nations Population division (2010a).

While increased life expectancy is a widespread phenomenon internationally, life expectancy at birth in Australia is relatively high even by developed country standards (figure 3.5).

How have trends in births and deaths affected the natural growth rate?

Between 1901 and 2009, the annual natural increase as a proportion of Australia's population decreased from 1.48 per cent to 0.71 per cent. This trend was driven primarily by the decline in the number of births as a proportion of the population. The decline in the natural increase would have been larger still had it not been for the significant decrease in mortality over the same period. If the death rate had remained at 1901 levels, while the birth rate had been as recorded, then by 2009, the annual natural increase as a proportion of the population would have fallen to nearly zero (figure 3.6).

Figure 3.6 **Changes in natural increase over time, 1901–2009**[a]



[a] Births, deaths and natural increase rates as a percentage of the total population. Natural increase with 1901 death rate denotes the natural increase as a proportion of the population, if the death rate stayed constant at 1901 levels, while birth rates were those that actually occurred. This simulation implicitly assumes that all deaths occur after child-bearing age.

Data sources: ABS (2008a, 2010a).

3.3 Age–sex structure — implications for natural increase

The age and sex structure of the population is an important determinant of the dynamics of natural increase.

A population with a relatively high proportion of women of child-bearing age will produce a relatively large number of births and a large natural increase (which would, in turn, lead to future ripple effects, as the large number of newborns reach child-bearing age). Even if fertility rates were to drop significantly below replacement levels today, the population would continue to grow for some time until the effects of today's age-sex structure wash out.

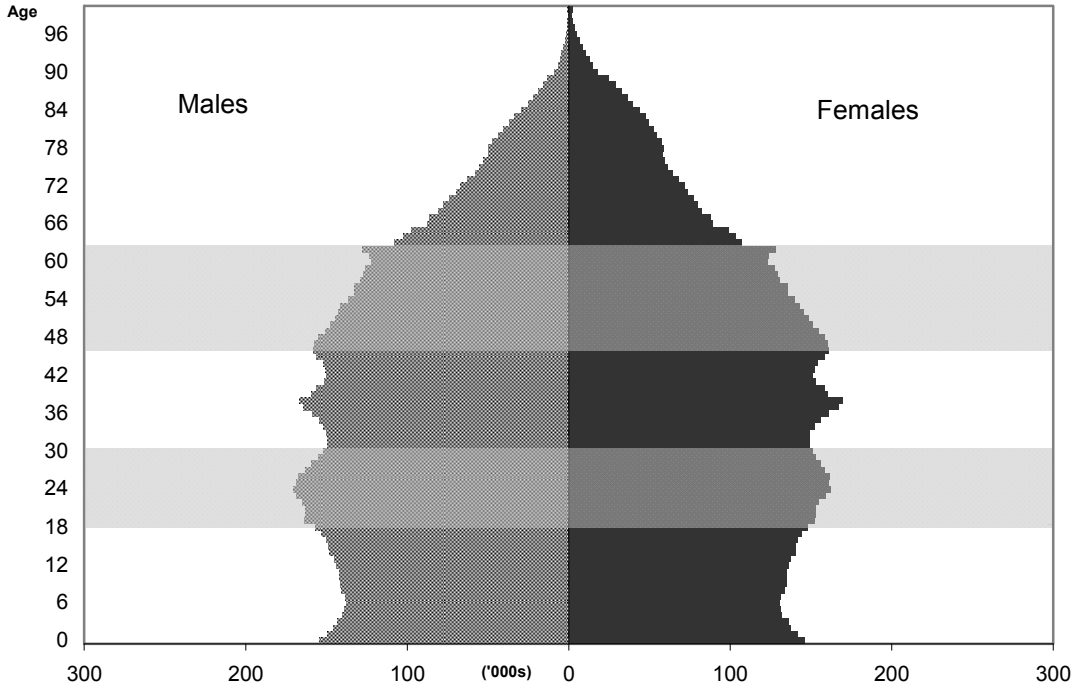
Conversely, a population with a relatively high proportion of older people is associated with a relatively large number of deaths and a low rate of natural increase. Even if fertility were to increase substantially, the decline in natural

increase would persist for some time. The population 'momentum' implicit in the current age-sex structures is thus an important component of population growth.

There are two relatively large cohorts that are expected to affect Australia's future natural increase, both of them apparent from our current population 'pyramid' (figure 3.7):

- the 'baby boomers', currently aged 46 to 64 years[3]
- people currently aged 18 to 30 years.

Figure 3.7 **Australia's age–sex structure, 2009**



Data source: ABS (2009c)

Over the next forty years, the 'baby boomer' cohort will progressively die out and thus the natural increase will decline. However, more immediately, the large cohort of women currently aged 18 to 30 years will contribute to a rise in the natural increase.

3 The 'baby boomer' generation is typically defined as those born between 1946 and 1964 in the post-war baby boom.

4 Overseas migration: drivers and trends

Key points

- Economic opportunity, political or social instability in the home country, and family reunion are the key influences on people's decisions to migrate.
- Government policies also influence migration flows, though only the permanent migrant intake is controlled *directly*.
  - Temporary migration is influenced indirectly through the setting of conditions under which migrants can enter and stay.
  - Under the Trans-Tasman Travel Arrangement, New Zealanders have the right to enter and stay indefinitely in Australia.
  - Emigration from Australia is generally not controlled by government.
- Since the second half of the 1990s, the focus of Australia's immigration policy has been increasingly on *skilled* migration.
- There have been several policy changes over the past ten years that relaxed the criteria for temporary residents applying for permanent residency. However, recent changes have again restricted the eligibility criteria.
- Australia's net overseas migration is large compared to other developed countries, and has grown strongly over the past ten years.
  - Most of the growth has come from the temporary categories.
- Over the past 40 years, there has been a decline in the share of immigrants from the United Kingdom and significant growth from new source countries, notably India and China.
- Around 70 per cent of Australian emigrants in 2008 were born overseas.
- Emigrants tend to be older than immigrants and, although available data are not comprehensive, appear to be more highly skilled.

Migration has always played an important role in shaping Australia's population. In 2009, 5.8 million people (around a quarter of Australia's population) were born overseas. In recent years, net overseas migration (NOM) has become the dominant component of Australia's population growth.

The recent rapid growth in NOM — from just under 140 000 in 2004 to over 300 000 in 2008[1] — has drawn much public and media interest (box 4.1). The 2010 Intergenerational Report (Treasury 2010) projected that the Australian population would reach approximately 36 million by 2050, assuming annual NOM of 180 000 on average. The merits or otherwise of a 'Big Australia' and the optimal level of immigration featured heavily in the 2010 federal election campaign. But there appears to be widespread confusion about the nature and implications of migration for population growth.

Box 4.1 Recent public commentary on growth in net overseas migration

In the past four years, almost without us noticing, immigration into this country has soared to levels never seen before — at a time when employment is falling. (Tim Colebatch 2010)

Once the Australian Bureau of Statistics publishes its final estimate of net overseas migration to Australia for 2008-09, it will be about 340 000. This is a huge number by historical standards — but it is not comparable with history because, in 2006, the bureau changed its definition of a migrant. (Peter McDonald 2010)

Under this Government, net immigration has been allowed to soar to 270 000 a year, helping us to a population increase of an astonishing 400 000 a year. That's not just a warning of problems in 2050, but a real problem right now. That's a million more people in just three years that we've had to supply with homes, power, public transport, hospitals, schools and water. (Andrew Bolt 2010)

Certainly net migration over the last two years has been of the order of 277 000 to 300 000. But when you disaggregate the numbers you find that only about 86 000 were in fact permanent migrants. Most of the rest (roughly 186 000) came on temporary visas, including 108 700 overseas students. (Peter Curson 2010)

4.1 What determines migration levels?

While the level and mix of migration to Australia depends on the willingness of individuals to leave their own countries and the relative attractiveness of Australia as a place to live, migration flows are also influenced by the Government's broad policy framework. The interaction of these forces determines Australia's immigration outcomes.

1 These figures are based on the '12/16' rule for estimating NOM (discussed further in chapter 2). This rule was introduced by the ABS in 2006, so the 2004 figure of almost 140 000 will not match the NOM for 2004 published elsewhere.

Motivations for migration

Economic opportunity has always been a prime motivator for migrants. Higher wages and better employment prospects in potential destination countries can make a big difference to migrants' living standards. In the destination economy, immigrants can help alleviate skill shortages as well as bring other benefits. Businesses often argue for relatively liberal migration programs, and governments often act to increase the level of immigration when economic conditions are strong, and vice-versa.

However, the importance of employment prospects in Australia to potential migrants should be placed in the context of migrants' broader needs when considering settlement. Other factors such as lifestyle, cultural considerations and access to health and education services play a significant part (Hugo, Khoo and McDonald 2006).[2]

Political and social instability in the home country can also be a compelling reason to migrate. War or persecution are key drivers of Australia's humanitarian intake each year. In the past decade, for example, Australia has taken in refugees from Afghanistan and Sri Lanka, both of which have experienced conflict and instability.

Family reunion is another key factor affecting the desire of individuals to migrate. In many instances, a member of a family will be the first to move overseas, typically for economic reasons, with family members later seeking to join him or her.

Australia is only one of many potential destinations for prospective migrants. Most OECD countries now have immigration programs that target skills, and most also operate humanitarian programs.

Government policy

The Australian Government controls permanent entry into Australia and establishes the conditions under which temporary movements into Australia are permitted. A range of visas are issued under various programs administered by the Department of Immigration and Citizenship (figure 4.1).

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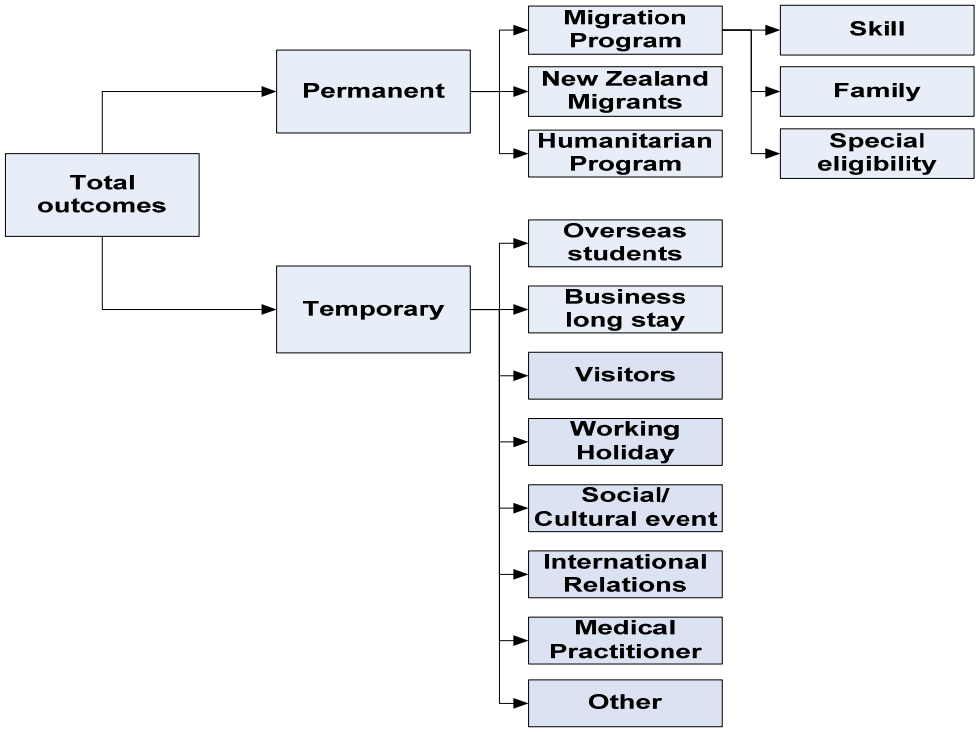
2 These factors also influence where in Australia migrants choose to settle. Hugo, Khoo and McDonald (2006) found that about half of surveyed skilled migrants living in Australian capital cities would not have accepted a job in a regional area. The main reasons cited for this preference were lifestyle, access to health and education facilities (usually when the migrants had school-aged children), and job opportunities for partners.

Figure 4.1 **Permanent and temporary visas issued by the Department of Immigration and Citizenship**



Data source: DIAC (2010a).

For some migration streams, the Australian Government can do either or both of the following:

- set a 'planning level' for the maximum number of entrants
- set various criteria for visa applicants that serve to restrict the type and number of entrants.

However, some streams are subject to less government control and are largely driven by the demand for, and supply of, particular types of migrants (table 4.1).

Thus, the Australian Government does not exert full control over aggregate levels of immigration at any point. In addition, emigration from Australia is generally outside the scope of government policy. Net migration levels can, therefore, fluctuate due to factors outside the Government's control in any given period.

Table 4.1 **Migration streams and policy controls**

Migration stream	*Type of control*
Migration Program	Capped at the aggregate level.
Skill	Capped at the aggregate level — two of the three visa categories are demand driven, while one is capped to meet aggregate cap. Other criteria to be satisfied by applicants include age, education, qualifications, English proficiency. A points test applies to some visas.
Family	Capped at the aggregate level. However, applications for two visa categories (partners and dependent children) are not capped. Some visas are subject to health and character requirements.
Special eligibility	Capped.
Humanitarian Program	Capped at the aggregate level.
New Zealand Migrants	Uncapped. Under the Trans-Tasman Travel Arrangement, New Zealand migrants have the right of entry to, and indefinite stay in, Australia.
Overseas Students	Uncapped. Determined by number of students accepted to study at Australian educational institutions, subject to fulfilment of conditions.
Business (Long Stay)	Uncapped. Driven by employer demand for skilled workers not available domestically.
Working Holiday	Uncapped. Only available to passport holders from certain nations, with which Australia has arrangements.
Social/Cultural Event	Uncapped. Granted only to visitors who take part in sporting, entertainment, cultural, or recreational activities.
International Relations	Uncapped. Restricted to people working for foreign governments, or organisations funded by foreign governments and international organisations, and those participating in exchange agreements.
Medical Practitioner	Uncapped. No longer available for primary visa applicants since 1 July 2010.
Other	Uncapped.

Sources: DIAC (2010a, 2010e); Koleth (2010); Phillips (2007).

Key developments in Australia's immigration policy

At the time of Federation, and for several decades afterwards, Australian immigration was conditioned by the 'White Australia' policy, introduced in response to rising numbers of Chinese and Pacific Islander migrants. At the conclusion of the Second World War, Australia embarked on a large-scale program of migration, accepting large numbers of migrants from the United Kingdom and southern Europe (DIAC 2009h). Throughout the 1950s and 1960s, elements of the White Australia policy were gradually dismantled — for example, a revised Migration Act in 1958 avoided references to race. The final vestiges of the White Australia policy were removed in 1973. All migrants, regardless of origin, could henceforth become eligible for Australian citizenship after being permanent residents for three or more years (DIAC 2009i).

The past few decades have seen significant further modifications to Australia's immigration arrangements, some of which are outlined below (summarised in table 4.2). Changes have been made to the criteria applying to certain visa types, new visas have been introduced, and the emphasis on permanent versus temporary visas has shifted over time.

Introduction of the current arrangements for New Zealand citizens

One landmark in Australia's immigration policy history was the introduction of the Trans-Tasman Travel Arrangement between Australia and New Zealand in 1973. This allowed Australian and New Zealand citizens to move freely between the two nations to work or visit, without needing to apply for authority to enter (DIAC 2010b). Consequently, New Zealand citizens migrating to Australia fall outside of the scope of the Migration Program, but make a significant contribution to Australia's total immigrant intake (section 4.2).

In 2001, the Australian Government announced changes to social security eligibility requirements for New Zealanders living in Australia. These changes meant that New Zealanders choosing to live in Australia were no longer eligible for many government benefits unless they applied for permanent residency under the Migration Program.

Bedford, Ho and Hugo (2003, p. 55) found that permanent and long-term movements of New Zealanders to all overseas destinations, including Australia, fell 'quite sharply' from 2000-01 to 2002-03. The authors noted that during this period, New Zealand was also experiencing relatively strong economic growth and low unemployment.

Changes in the provisions for overseas students

From the late 1990s, there was an effort to attract a greater number of international students. An education and training marketing campaign aimed at international students was announced in 1998 and, from July 1999, additional points were granted to applicants under the General Skilled Migration (GSM) program, where those applicants obtained their diploma or degree from an Australian educational institution (Koleth 2010). This change had the dual effect of encouraging young people from overseas to study in Australia and, having completed their education, to seek to reside in Australia on a longer-term basis.

Table 4.2 **Selected changes to Australia's immigration program**

Year	*Action*
1973	• Trans-Tasman Travel Arrangement between Australia and New Zealand introduced.
1977	• The first tailored Humanitarian Program commenced operation.
1996	• Introduction of the Temporary Business (Long Stay) subcategory 457 visa.
1999	• Introduction of a Migration Occupations in Demand List (MODL), containing occupations considered to be in 'shortage'.
	• Additional points granted to migrants educated at an Australian institution.
2001	• Overseas students educated at an Australian institution with certain skills (especially information and communications technology) could apply for permanent residency without first leaving Australia or gaining experience in their professional field.
2003	• Overseas students applying for GSM places will need to have completed a minimum of two years study in Australia (as opposed to one) to qualify for bonus points and work experience exemption.
	• An increase in the number of points awarded for completion of Australian honours, masters, and PhD degrees.
	• A student guardian visa is introduced allowing entry to relatives providing care for students studying in Australia.
2004	• MODL expanded to include accountants and a number of trade occupations.
2005	• Engineering-related occupations, and more trade occupations (such as cooking and hospitality) added to MODL.
	• Introduction of a Trade Skills Training Visa allowing employers to recruit people from overseas to undertake apprenticeships.
2006	• An increase in the base level of English proficiency required by GSM visa applicants, and introduction of a skilled work experience requirement for some previously exempt overseas students applying for permanent residency.
2008	• An increase in the number of places offered in Australia's skilled Migration Program by 37 000.
	• Introduction of a 'demand driven' model for determining permanent skilled migration. An increase in the number of employee-sponsored visas, and introduction of a Critical Skills List (CSL) to apply to independent skilled visa applicants.
2009	• Two cuts to the GSM program, reducing it by 20 per cent.
	• Building and manufacturing trades removed from the CSL, leaving it to consist mainly of health, medical, engineering, and IT professionals.
	• A series of integrity measures associated with student visas introduced.
2010	• A new Skilled Occupations List (SOL) is issued, containing 181 occupations — a reduction of 219 compared to the previous list.
	• Occupations such as cooking and hairdressing removed from the SOL. The inclusion of such occupations previously had contributed to growth in overseas student enrolments in the VET sector.
	• Rules for temporary skilled graduate visas introduced for students studying for an occupation not on the SOL.

Sources: DIMA (2001); Evans (2008, 2009c, 2010a); Koleth (2010), Parliamentary Library (2010).

Further changes to the rules applying to overseas students in Australia were made in 2001. The Government announced that overseas students who had successfully completed their studies at an Australian educational institution, and had skills considered to be in demand, could apply for permanent residency onshore under the GSM program. Such students were no longer required to return home to apply for

Australian residency, and were also exempted from being required to obtain work experience in their chosen occupation. This contributed to a further rise in successful applications for permanent residency.

Several significant changes to the rules governing overseas students were enacted in 2010. From 1 January 2010, prospective overseas students were required to demonstrate they had access to at least $18 000 to finance their living expenses in Australia, an increase of $6000 over the previous amount. Following reforms to the skilled Migration Program in February 2010 (discussed below), overseas students studying a course that was not on the Skilled Occupations List (SOL) have until the end of 2012 to apply for a Temporary Skilled Graduate visa. That visa allows them to spend up to 18 months in Australia to obtain work experience in their field, and to find an employer to sponsor their application for permanent residency. Following the Baird Review into education services for overseas students, the Government announced a new package of 'visa integrity measures' in April 2010 (Koleth 2010).

Although not directly affecting the rules applying to international student visas, changes to the SOL made in 2010 have important implications for overseas students who may wish to obtain permanent residency. For example, occupations such as cooking, hairdressing and massage, which had been favoured by many foreign students, with courses supplied by many new training organisations, were removed from the SOL (Koleth 2010).

Introduction of the Business (Long Stay) Visa

In August 1996, the Government introduced the Temporary Business (Long Stay) Visa (subclass 457) to allow Australian employers to sponsor migrants intending to work on a temporary basis. This visa allows employers to sponsor migrants for periods from one day to four years, and was designed to allow employers to fill vacancies that required skilled workers unavailable domestically (Philips 2007).

The 457 visa allows the primary applicant to bring family members to Australia, who may then also work or study for the duration of their stay. After entering Australia, holders of 457 visas are free to leave and re-enter Australia as many times as they wish while the visa remains valid. Since their introduction, the number of 457 visas granted has increased from almost 31 000 in 1997-98 to over 100 000 in 2008-09.

Recent changes to Australia's Migration Program

More recent changes to Australia's Migration Program have largely centred around the GSM component. The size of this component has fluctuated greatly; the increase of 37 000 places in 2008 was reversed the next year.

In late 2008, the Government announced that it would adopt a more 'demand driven' model for determining skilled migration, giving priority to migrants with confirmed jobs, and to those with skills in critical need, when granting permanent visas. This was to ensure that the Migration Program was 'more responsive to the needs of the economy and assist[ed] industries still experiencing skill shortages' (Evans 2008a). A key element of the change to the Migration Program at this time was the development of a Critical Skills List (CSL). This consisted of 42 occupations considered to be in critical shortage, mainly in the areas of health and engineering.

In 2010, the Government introduced further changes, including a review of the points-based test used to assess migrants and the replacement of the Critical Skills and the Migration Occupations in Demand Lists with a much shorter SOL. As noted, in May 2010, the Government made further cuts to the SOL, removing occupations such as cooking and hairdressing (Evans 2010b).

Also in May 2010, the Government announced that the overall size of the Migration Program for 2010-11 would remain unchanged from the previous year, consisting of 113 850 places for skilled migrants, 54 550 family places, and 300 special eligibility places (Evans 2010c).

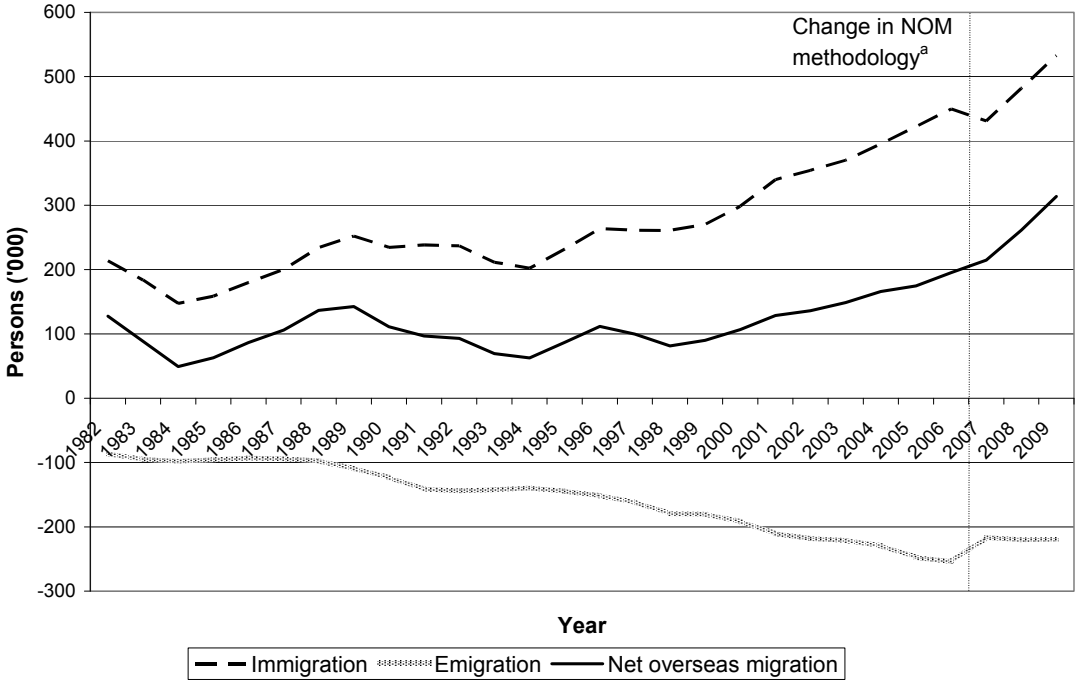
4.2 An overview of major recent migration trends

In the past three decades, Australia has experienced major changes in the number and composition of its migrants — both due to policy changes and to various external factors that influence the international movement of people.

Net overseas migration has grown strongly

The migration trend that has attracted most public attention has been the sharp growth in the size of net overseas migration over the past decade. Annual NOM remained relatively stable at around 100 000 people through most of the 1980s and 1990s. However, it grew rapidly thereafter, reaching a peak of around 300 000 in 2008-09 (figure 4.2).

Figure 4.2 **Annual net overseas migration, 1982–2009**



a Data before and after 2006 are not directly comparable, due to a change in ABS methodology for estimating NOM.

Data source: ABS (2010b).

Change in the methodology for estimating NOM and the recent decline

However, it should be noted that in 2006, the Australian Bureau of Statistics (ABS) changed its methodology for estimating NOM, so that the figures before and after 2006-07 are not directly comparable. The new methodology has 'relaxed' the criteria for including a migrant in the NOM calculations, leading to higher estimates of NOM than previously. For example, NOM estimates in 2005-06 increased by 17 per cent (box 4.2). (Thus, if the new methodology were applied to NOM in both 2005-06 and 2006-07, the increase between the years would be 36 per cent, rather than 59 per cent.)

It would also appear that NOM may have stopped growing and possibly begun to decline, as anticipated in the IGR projections. Preliminary ABS calculations for the year to March 2010 show NOM falling to around 241 000 people — a 20 per cent decline on the 300 000 recorded for the previous year (ABS 2010a). Whether this is a one-off event, or it signals a downward trend in NOM levels from a 2008-09 peak, remains to be seen.

Box 4.2 Change in the methodology for estimating net overseas migration

Prior to July 2006, the ABS employed the '12/12' rule to estimate NOM. This meant that in order for a person to contribute to NOM they needed to stay in, or be absent from, Australia for a continuous period of 12 months.

After July 2006, the ABS modified its methodology to the '12/16' rule. Under this rule, the requisite 12 months of stay (for NOM arrivals) or absence (for NOM departures) does not have to be continuous and is measured over a 16-month reference period. Thus, whether a traveller is in or out of the population is determined by the duration of their stay in or away from Australia over the subsequent 16 months after arrival or departure. The change introduced a structural break into ABS NOM data between 2005-06 and 2006-07 (table 1), and the ABS warns to exercise caution when making historical NOM data comparisons.

Table 1 The impact of the change in methodology for calculating net overseas migration data

Year	*Net overseas migration as published by ABS*	*Net overseas migration (new methodology)*	*Effect of change in methodology*
2004-05	123 763	142 503	18 740
2005-06	**146 753**	**171 452**	**24 699**
2006-07	**232 824**	**232 824**	..

Source: ABS (2009b).

How does the size of Australia's migrant intake compare internationally?

International data on migration flows only allow limited comparisons, because countries tend to define migrants differently, and construct migration statistics from different sources (box 4.3). It is particularly difficult to compare NOM across countries, as Australia is the only country to measure migration in this manner. (That said, generally, Australia has some of the best and most detailed migration statistics in the world, with data collection aided in part by its isolated geographic location.)

Box 4.3 International comparisons are difficult

The UN (1998) defines an international migrant as '*any person who changes his or her country of usual residence*'. This broad definition means that international migration flow statistics differ across the world because of differences in the type of data source used, the time criteria used to determine who is a migrant, and the treatment of special cases.

Data sources

There are three types of data sources on immigration flows:

- Population registers — databases that contain selected information pertaining to the resident population, which are usually based on a census, but are continuously updated with information on births, deaths, marriages and migration.
- Registers of foreigners or resident permit databases — information gathered when immigrants apply for a visa or residency through the immigration authorities.
- Border statistics and sample surveys — information obtained upon entry.

Time criteria

Different countries use different reference periods to classify individuals as migrants. Common time criteria include one year, six months and three months. The '12/16' rule used by the ABS to calculate net overseas migration is unique to Australia.

Treatment of special cases

International agreements can affect how a country treats different types of foreigners. For instance, Australia and New Zealand have an agreement whereby individuals can freely migrate to the other country without requiring a visa. A similar agreement affects migration between EU members.

Examples

In the United States, an immigrant is defined as a person who has obtained a permanent residence permit. In the United Kingdom an immigrant is a non-British citizen who stays for a year or more. In the United Kingdom, immigration is measured by using the International Passenger survey to ask non-British citizens arriving in the United Kingdom how long they intend to stay. The number of non-British citizens who stay for 12 months or more after stating that they intended to stay for less than 12 months is estimated, and included in the immigration statistics.

Sources: ABS (2010b); EU (2010b); Office for National Statistics (2008); UN (1998).

Migration stock data are more comparable internationally and can be used to provide some perspective in the debate about immigration.

Compared to other developed countries, a high proportion of Australia's population was born overseas (26.4 per cent in 2010). This is almost double that of the United

States or any of the European countries in table 4.3. (For example, in the United Kingdom that proportion is 10.4 per cent.) Between 1990 and 2010, the proportion of Australia's population born overseas increased by 5.4 percentage points. Australia has over 2.5 per cent of the world immigrant 'stock', which is over eight times its share of the world's population (table 4.3).

Table 4.3 **Proportion of the population born overseas, for selected countries, 1990 and 2010**[a]

Country/Year	*Number of people born overseas*	*Population size*	*Proportion of population born overseas*
	million	million	per cent
Australia			
1990	3.6	17.1	21.0
2010[b]	5.8	22.0	26.4
Canada			
1990	4.5	27.7	16.2
2010	7.2	33.9	21.3
France			
1990	5.9	56.8	10.4
2010	6.7	62.6	10.7
Germany			
1990	5.9	79.4	7.5
2010	10.8	82.1	13.1
New Zealand			
1990	0.5	3.4	15.5
2010	1.0	4.3	22.4
UK			
1990	3.7	57.2	6.5
2010	6.5	61.9	10.4
USA			
1990	23.3	254.9	9.1
2010	42.8	317.6	13.5
World			
1990	155.5	5 290.5	2.9
2010	213.9	6 908.7	3.1

a Data on the number of people born overseas and population size are UN mid-year estimates. **b** Data for Australia are for mid-2009 and are sourced from ABS (2010b).

Sources: ABS (2010b); United Nations Population Division (2010b).

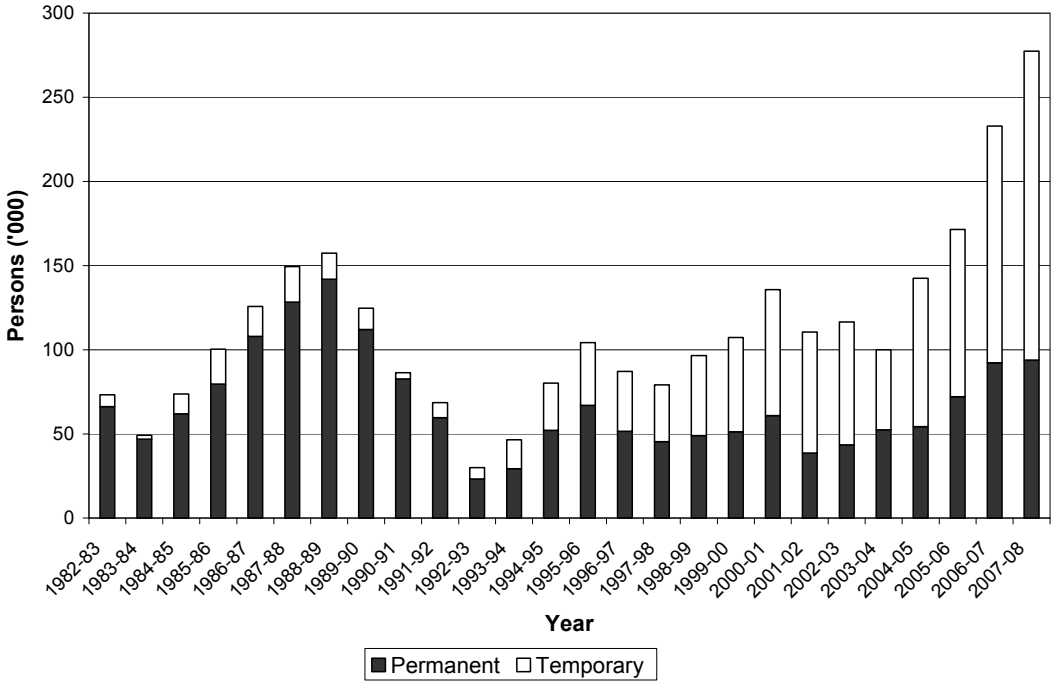
The composition of NOM has also changed

The recent sharp growth in the size of NOM has been accompanied by significant changes in its composition.

Growth in the temporary component of immigration

One of the most striking trends in the past decade has been the growth in the number of long-term temporary immigrants. While the level of *net permanent migration* has increased by around 25 per cent over the last ten years (and stayed below the heights reached in the late 1980s), the level of *net temporary migration* has nearly tripled since 2000. As a result, the share of temporary migrants in NOM has increased from around 10 per cent in 1989-90 to around 67 per cent in 2007-08 (figure 4.3).

Figure 4.3 **Permanent and temporary components of net overseas migration, 1983–2008**[a]



a For NOM outcomes prior to 2004-05, ABS NOM data do not allow a decomposition of NOM into the temporary and permanent components. For the period 1983–2004, ABS NOM figures were combined with DIAC data on overseas arrivals and departures (OAD). The permanent component was calculated as the net of settler arrivals and permanent departures presented in OAD data. The temporary component was assumed to be the net of the ABS NOM figure and the permanent component. For NOM outcomes after 2004-05, ABS data were used.

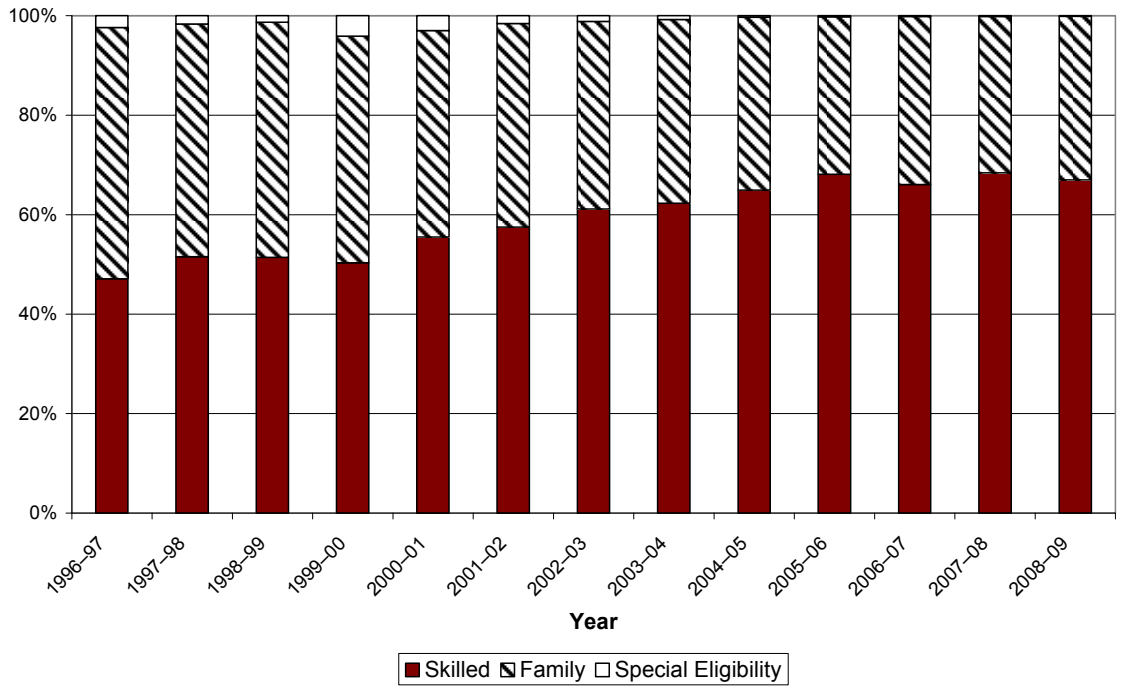
Data sources: PC estimates from ABS (2010b); DIAC (2010a).

Increasing focus of the permanent Migration Program on skilled migrants

The size of the permanent Migration Program has nearly doubled since 1996-97. Nearly all of that growth can be attributed to increases in the number of skilled migrants. The share of the skilled migrant component of the Program has risen from

around 47 per cent of the total intake in 1996-97, to 67 per cent in 2008-09. Conversely, the share of the family component has declined (figure 4.4).

Figure 4.4 **Outcomes of the three streams of the permanent Migration Program, 1996-97 to 2008-09**[a]



a The special eligibility stream is for former residents of Australia, who never acquired Australian citizenship, and are seeking to return to or remain in Australia as permanent residents and who meet specific criteria.

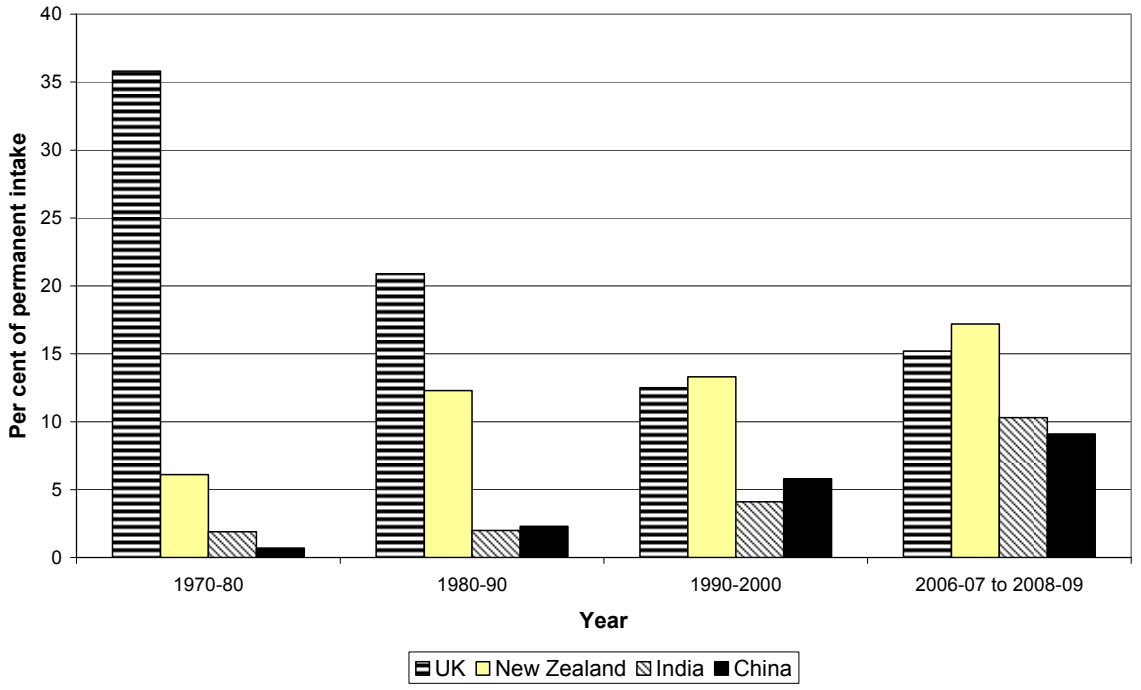
Data sources: DIAC (2010a); DIMIA (2004a).

Changes in immigrants' countries of origin

The past decades have also seen a marked change in source countries for immigrants to Australia. The most notable is the decline in the share of immigrants from the United Kingdom, and the emergence and growth of new source countries, particularly India and China. There was also rapid growth in the share of New Zealanders following the introduction of the Trans-Tasman Travel Arrangement in 1973.

New Zealand is currently the largest source country for immigrants to Australia (figure 4.5), followed by the United Kingdom. The next largest sources of immigrants are India and China, averaging nearly 10 per cent each, compared to under 2 per cent in 1970–1980.

Figure 4.5 **Countries of birth for settler arrivals — evolution over time**[a]



a UK data for 1970-80 include immigrants from Ireland.

Data sources: DIAC (2010c); DIMA (2001).

4.3 Characteristics of Australian emigrants

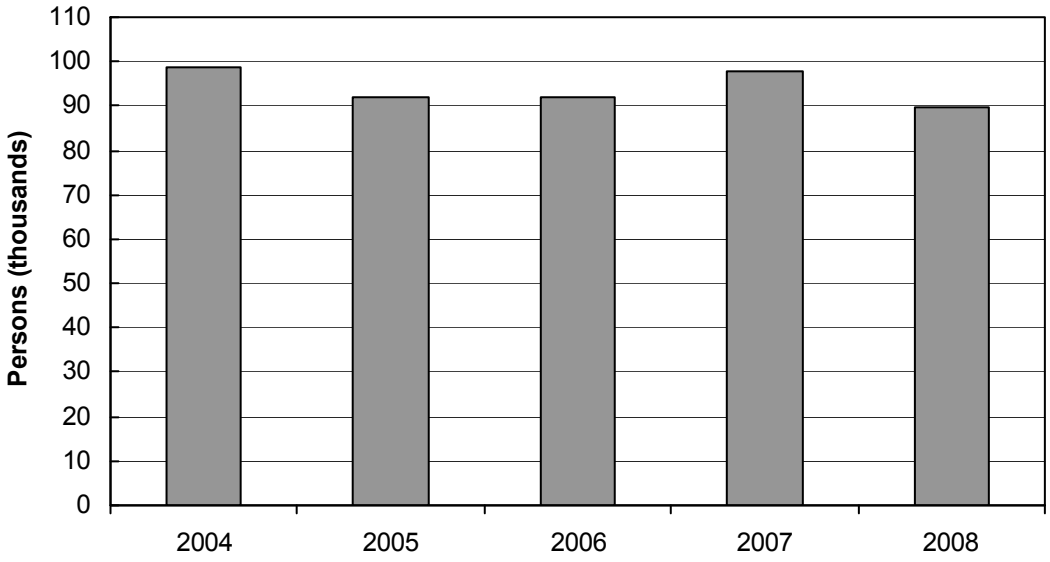
Public discussion tends to focus on net overseas migration numbers, rather than on the immigration and emigration components. Emigration is rarely considered or discussed. However, the number of people leaving Australia (either permanently or for the long term) has also increased significantly, rising from around 88 000 in 1981-82 to roughly 326 000 in 2008-09 (ABS 2010g).

Whether immigrants and emigrants share similar characteristics makes a difference when analysing the demographic and economic impacts of immigration policy. For example, if immigrants are typically younger than emigrants, then the impact of immigration on reducing the ageing of Australia's population would be greater, than if the two groups were of the same average age. If emigrants are typically more highly skilled or qualified than immigrants, this could raise concerns about a 'brain drain' or a reduction in average labour productivity.

Destination and source countries

ABS data indicate that in 2008, a total of 89 720 Australian citizens left this country, classified as emigrants ('NOM departures'), a small decline from previous years (figure 4.6). The most popular destination for Australian citizens departing Australia in 2008 was the United Kingdom, followed by the United States and New Zealand (table 4.4).

Figure 4.6 **NOM departures, 2004–2008**
Australian citizens



Data source: ABS (unpublished).

Table 4.4 **Destination countries for NOM departures**
Australian citizens

Country	*Per cent of total NOM departures by Australian citizens*[a]
United Kingdom	21
United States	9
New Zealand	8
Canada	5
Singapore	5
China	4
Hong Kong (SAR of China)	4
Other	46

[a] Entries do not sum to 100 due to rounding.

Source: ABS (unpublished).

The majority of NOM departures were born overseas. For instance, in 2008, only 30 per cent of NOM departures were born in Australia. A significant proportion of emigrants are temporary immigrants returning to their countries of origin following the expiration of their Australian visas. Almost 10 per cent of NOM departures in 2008 were born in the United Kingdom and around 7 per cent were born in New Zealand. By contrast, in terms of NOM arrivals, only 10 per cent were born in Australia, with around 12 per cent born in India, and approximately 10 per cent born in the United Kingdom and New Zealand (table 4.5).

Table 4.5 **Countries of birth of NOM departures and arrivals, 2008**[a]

NOM departures	*Per cent of total*	*NOM arrivals*	*Per cent of total*
Australia	29	India	12
United Kingdom	9	Australia	10
New Zealand	7	United Kingdom	10
China	6	New Zealand	10
United States	4	China	9
Republic of Korea	4	Republic of Korea	3
Other	41	Other	45

a Entries may not sum to 100 due to rounding.

Source: ABS (unpublished).

Age and sex composition of NOM departures and arrivals

Data on Australia's NOM departures indicate that a slightly larger number of males than females constituted NOM departures in each year over the period 2004 to 2008. A similar story prevails for NOM arrivals (table 4.6).

Table 4.6 **Composition of NOM departures and arrivals by sex, per cent**

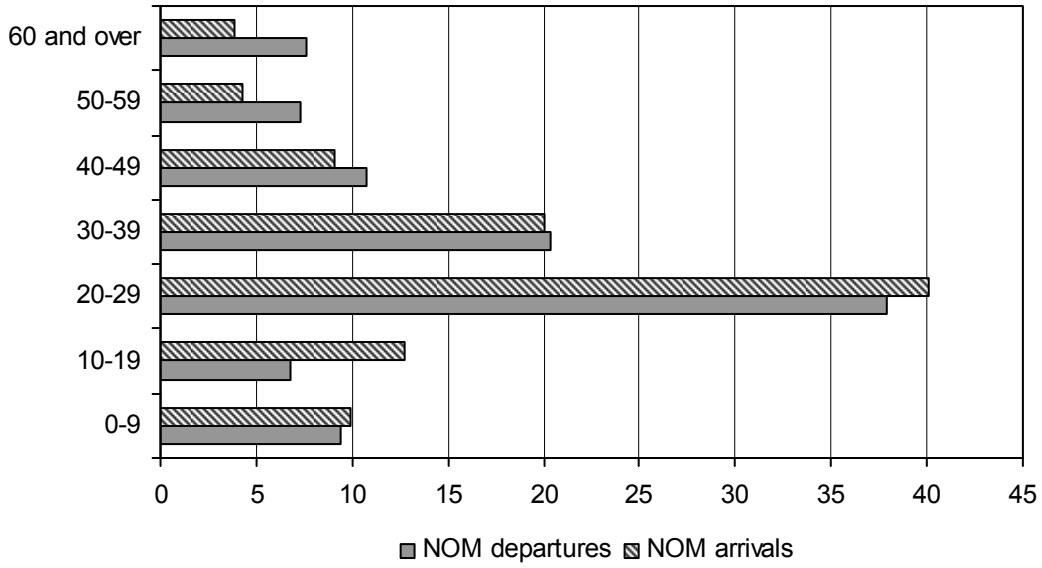
	NOM departures		*NOM arrivals*	
	Male	Female	Male	Female
2004	54	46	52	48
2005	55	45	52	48
2006	55	45	53	47
2007	55	45	53	47
2008	53	47	53	47

Source: ABS (unpublished).

Australia's NOM departures in 2008 were generally older than NOM arrivals (figure 4.7). In 2008, around 15 per cent of NOM departures were aged 50 or over, in contrast to approximately 8 per cent of NOM arrivals. Conversely, 63 per cent of

NOM arrivals were under 30 years old, compared to 54 per cent of NOM departures.

Figure 4.7 **NOM departures and arrivals by age, 2008**
Per cent of total NOM departures and NOM arrivals



Data source: ABS (unpublished).

Occupational composition of emigrant and immigrant flows

Department of Immigration and Citizenship data can provide some indication of the occupational mix of emigrants and immigrants, where emigrants are defined as permanent departures from Australia and immigrants are defined as settler arrivals.[3] (These concepts differ somewhat from the NOM concepts used above, which use the '12/16' rule to define departures and arrivals.)

It is hard to draw firm conclusions from these data for several reasons.

- First, data are based on the number of trips, rather than the number of people entering or departing (that is, people who undertake multiple trips are counted more than once).
- Second, data are based on the information obtained from passenger cards, which may not be completed accurately.

3 Permanent departures refer to people who state that they are permanently leaving Australia, while settler arrivals comprise people who hold a permanent visa or a temporary (provisional) visa where there is a clear intention to settle, New Zealand citizens indicating an intention to settle, and people considered otherwise eligible to settle (DIAC 2009b).

- Third, the status of a person as a settler arrival or a permanent departure is determined on the basis of their stated travelling intention at the time of entry or departure. Actual outcomes may differ from stated intentions. (For example, a person intending to leave Australia for good may decide to return.)
- Also, the data relating to occupation correspond to a settler's stated occupation upon arrival, and is not necessarily the occupation they will subsequently hold in Australia.

With these caveats in mind, the data indicate that in 2008-09, more permanent departures than settler arrivals were in the labour force (table 4.7).[4]

Table 4.7 **Occupation of permanent departures and settler arrivals, 2008-09**

Per cent of total permanent departures and settler arrivals

	Permanent departures	*Settler arrivals*
Managers and administrators	11	5
Professionals	26	18
Associate professionals	7	6
Tradespersons	4	6
Advanced clerical and service	2	1
Intermediate clerical, sales, and service	8	5
Intermediate production and transport	1	1
Elementary clerical, sales, and service	1	1
Labourers and related workers	1	1
Inadequately described	5	5
Sub-total employed	66	48
Not in employment	1	2
Not in labour force	31	42
Not stated/inadequately described	2	8
Total	100	100

Source: DIAC (2009a, b).

Around 44 per cent of permanent departures were in the relatively skilled categories of: managers and administrators; professionals; and associate professionals, compared with approximately 29 per cent of settler arrivals.

4 DIAC (2009a) does not provide any information about whether settler arrivals subsequently sought or gained employment, nor about where they worked if they did gain employment.

5 Overseas migration: temporary and humanitarian components

Key points

- Temporary migration to Australia has grown in recent years, driven largely by increases in the number of overseas students, working holiday makers and skilled workers.
- Temporary migration contributes to Australia's population growth in the short term, but also contributes to long-term population growth.
  - A significant proportion of temporary migrants obtain permanent residency while onshore.
- The Humanitarian Program provides residency to people in dire need.
  - Most of the 13–14 000 Humanitarian Program visas granted each year are to refugees and others in humanitarian need, who are currently overseas.
  - Less than 20 per cent of the visas are granted to those who apply for a visa after entering Australia.
- Unauthorised boat arrivals are entitled to apply for onshore protection and most are subsequently found to be refugees.
  - This is in contrast with other onshore applicants, who are typically unsuccessful in establishing refugee status.
- Refugee visas granted to unauthorised arrivals do not lead to an increase in average entries under the Humanitarian Program. Any increase in this component is matched by a corresponding reduction in other streams.

Two components of Australia's migration programs that warrant closer attention are our temporary migrant intake and the Humanitarian Program. As discussed in chapter 4, temporary migration has been the main driver of the recent growth in net overseas migration. And the Humanitarian Program has featured in the population debate following the recent increase in the number of asylum seekers arriving in Australia by boat.

5.1 Temporary migration

In 2007-08, people holding a temporary visa accounted for around 66 per cent of net overseas migration (NOM), compared to around 58 per cent in 2005-06 (ABS 2010c). Given the significance of this component of NOM and the less than obvious linkages between temporary migration and population growth, it is worth examining recent trends in greater detail.

What are the links between temporary migration and population growth?

The Department of Immigration and Citizenship (DIAC) defines temporary entrants to Australia as people arriving from overseas on a temporary visa (box 5.1). Their stay in Australia may be as short as a few days or as long as several years.

Box 5.1 **Categories of temporary entrants**

Temporary entrants to Australia comprise *visitors* and *temporary residents*:

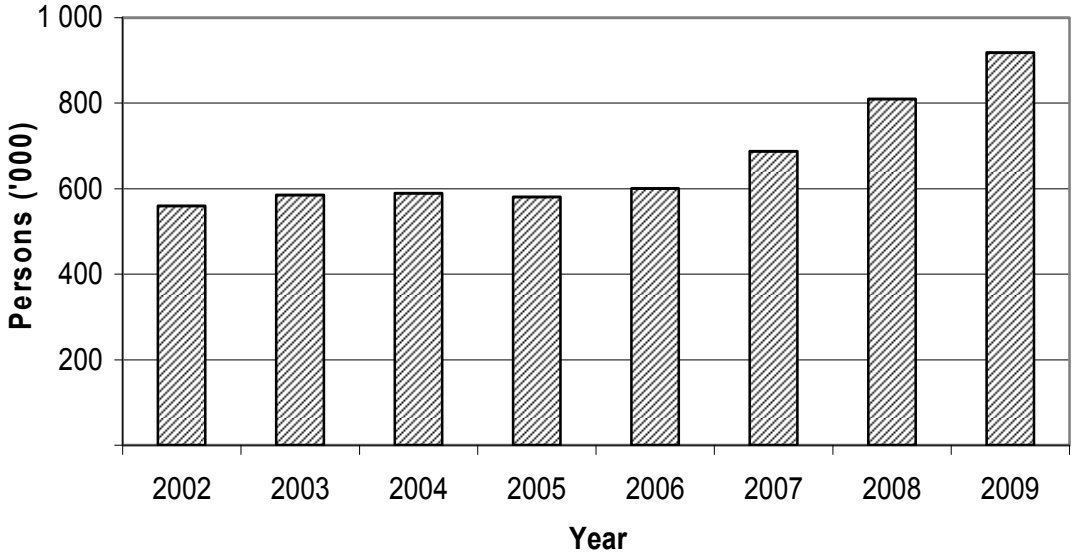
- *Visitors* include tourists, people admitted to visit relatives or to undergo medical treatment and business visitors staying for up to three months.
- *Temporary residents* are given entry for a specific purpose judged to be of benefit to Australia. They include:
  - *overseas students* — people enrolled in a registered course of study in Australia on a student visa valid for the length of the course
  - *working holiday makers* — young people on holiday in Australia with short-term work rights
  - *skilled temporary residents* — mostly skilled workers recruited by Australian employers, entering under the Temporary Business (Long Stay) (subclass 457) visa. This visa permits a stay of up to four years
  - *other temporary residents* — this category covers a range of visas allowing people to enter Australia for social, cultural, diplomatic and training purposes.

Sources: DIAC (2009d, 2010a).

Temporary entrants, as a group, make a significant contribution to the total population at any point in time. The total stock of temporary entrants (the number of people in Australia on a temporary visa of any kind) at 30 June of each year remained at around 550 000–600 000 from 2002 to 2006, but then rose steadily to reach almost 1 million in 2009 (figure 5.1). As these are stock figures, they do not necessarily represent the same people staying on year after year (the majority of the stock of temporary entrants are usually short-term visitors). However, with growing

temporary migration, even of a short-term nature, the total number of temporary entrants at any one time increasingly needs to be considered in analysing labour markets and community demand for services, infrastructure and housing (among others).

Figure 5.1 **Stock of temporary visa holders, at 30 June, 2002–09**[a]



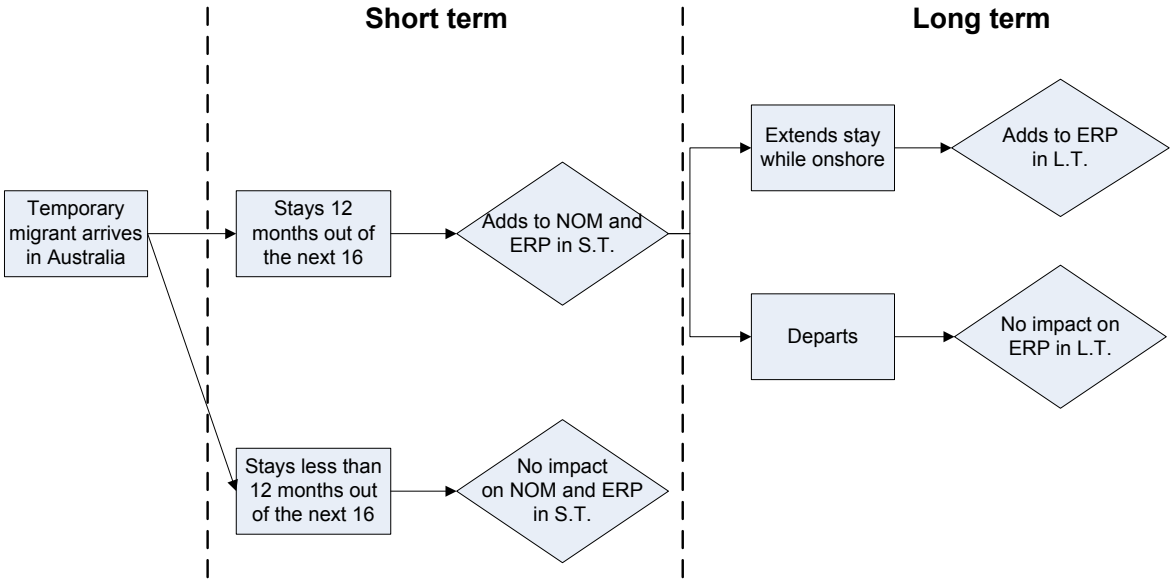
[a] DIAC excludes temporary visa holders who were expected to apply for permanent residency and were counted in the permanent migration or humanitarian program numbers.

Data sources: DIMIA (2004b, 2004c, 2005a); DIMA (2006); DIAC (2008b, 2008c, 2009b).

Temporary migrants can contribute to population growth in both the short and long terms.

- In the short term, temporary migrants contribute to the estimated resident population if they reside legally in Australia for 12 of the 16 months following arrival.
- Temporary migrants can contribute to the estimated resident population in the long term if they extend their stay in Australia beyond their initial visa limit — for example, by obtaining permanent residency while onshore (figure 5.2).

Figure 5.2 **Temporary migration and population growth**



If the *net* temporary migration over the *long* term is greater than zero (that is, every year there are more new temporary immigrants arriving than current temporary residents departing), the population in the long term would be commensurately greater. On the other hand, if the number of new temporary residents changes significantly only for a *short period*, there will be a significant change in the population in the short term and a reversal in the longer term. For example, in the case of a brief spike in temporary immigrants which increases the population in the short term, unless some of those temporary residents subsequently obtain permanent residency, this increase will be reversed once they depart and the temporary migrant intake returns to historical levels.

How have temporary migrants contributed to population growth in recent years?

Initial contribution of temporary residents to NOM

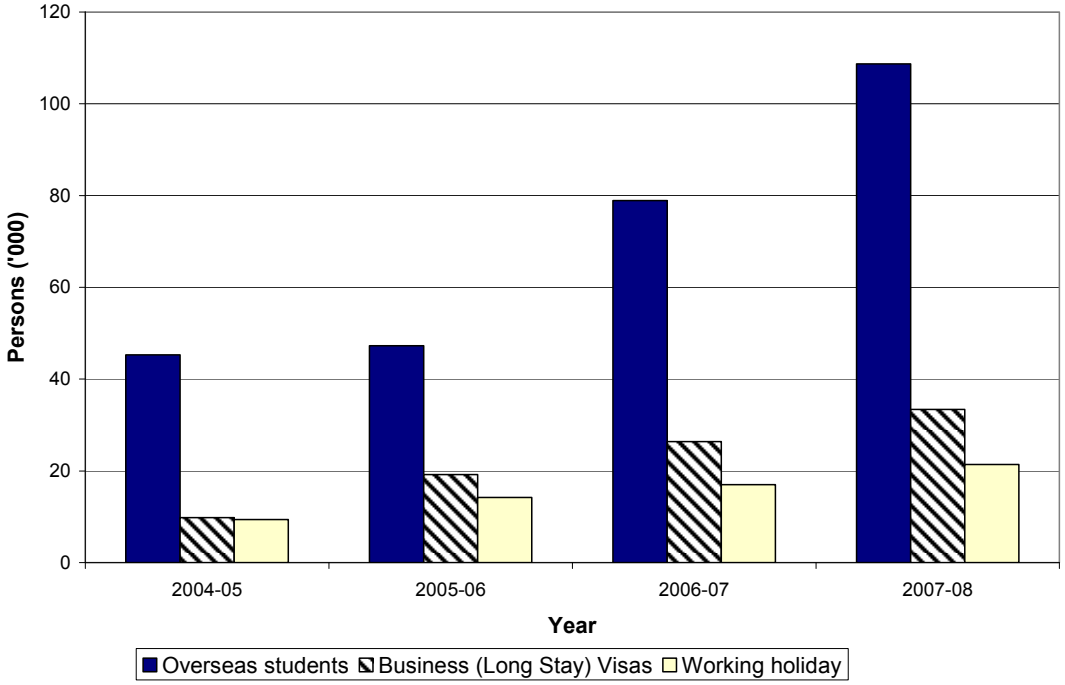
The number of visas granted to temporary *entrants* has remained stable at about 4 million per year over the past five years. The majority of those visas — over 3 million — are *visitor* visas, mostly for tourists and short-stay business visitors, who do not contribute to NOM (DIAC 2010a).

The number of temporary *resident* visas has increased steadily during the past five years, driven by growth in overseas students, working holiday-makers and skilled

workers. The number of visas granted under those three categories nearly doubled from 2004-05 to 2008-09 (DIMIA 2006, DIAC 2010a).

ABS data indicate that in recent years, holders of the above types of visas have made a substantial and growing contribution to NOM (figure 5.3).

Figure 5.3 **The impact of temporary visa holders on net overseas migration, 2004-05 to 2007-08**[a]



a Excludes temporary visa holders who have been in Australia for more than ten years.

Data source: ABS (2010b).

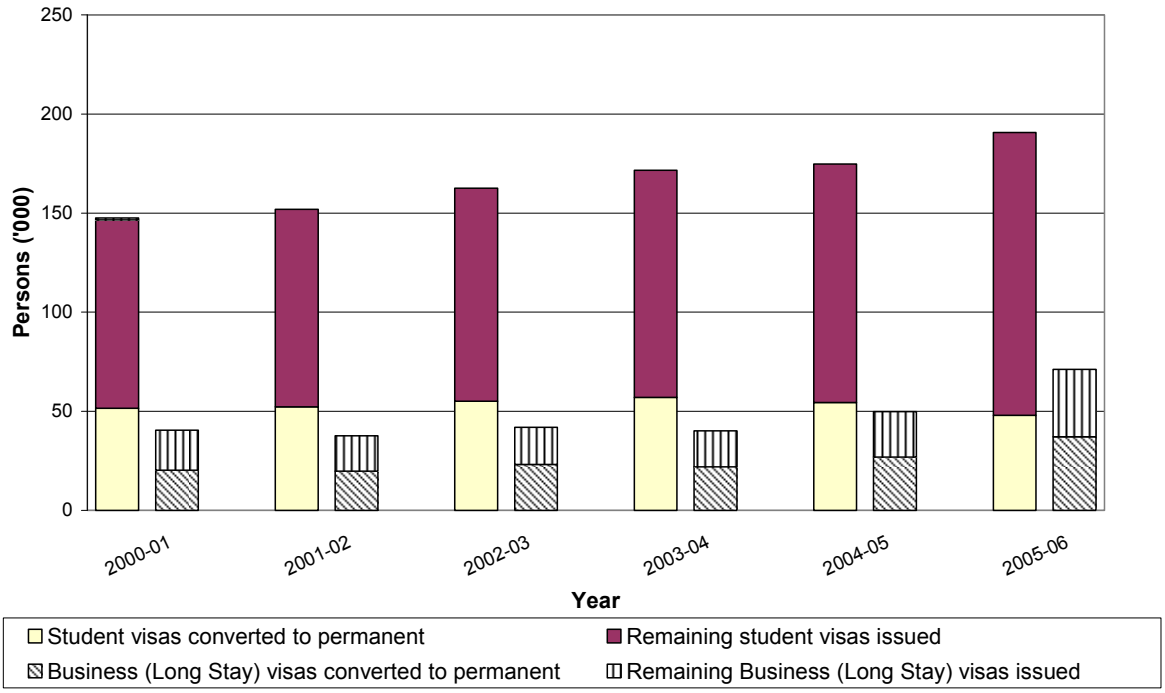
How many temporary entrants become permanent residents?

It is difficult to determine whether the recent increase in temporary resident visas is a short-term phenomenon or a sign of a long-term change in temporary migration levels. As noted, recent ABS data indicate a fall in NOM levels for the year to March 2010. Even if the increase proves short-lived, some of it will translate into long-term population growth, because a significant number of temporary resident visa holders go on to obtain permanent residency.

In recent years, more than half of the Business (Long Stay) visa holders and around one-third of overseas students subsequently converted their status to permanent

residency (figure 5.4).[1] However, recent changes to permanency options for students will be likely to have an effect in the future.

Figure 5.4 **Temporary visa holders who have subsequently obtained permanent residency, as at 16 September 2010**[a, b, c, d]



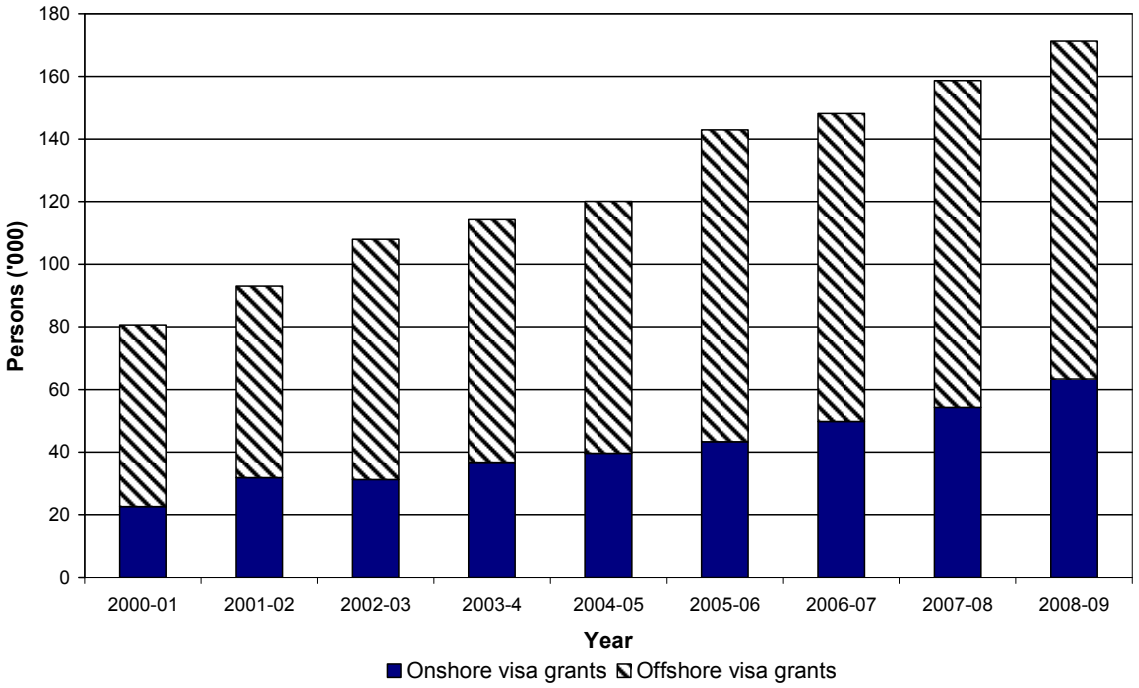
a Figures based on the number of people, not the number of visa grants. Where a person has been granted more than one temporary visa in a financial year, the figures reflect the last temporary visa granted in the financial year. A person may be counted in more than one year, if they were granted temporary visas in different years. **b** Business (Long Stay) visas include Independent Executives. **c** Permanent residency visas include permanent and provisional visas. **d** The percentage of people with temporary visas who obtained permanent residency is a snapshot at 16 September, and may increase over time.

Data sources: DIMIA (2002, 2003, 2004a, 2005b, 2006); DIMA (2007); DIAC pers. comm., 16 September 2009.

Applicants with current temporary visas accordingly constitute a significant proportion of Australia's permanent migrant intake, with approximately one-third of all permanent visas granted to onshore applicants (figure 5.5).

1 The data cover temporary visa holders who obtained their visa between 2000-01 and 2005-06. Data on more recent temporary visa grants are excluded, because temporary visas are valid for four years, and not all of the temporary visa holders who obtained their visas after 2006 and will ultimately obtain permanent visas, would have done so to date. The final proportion for visa holders who received temporary visas in 2005-06 is likely to increase, as not all such applications had been finalised and recorded as at 16 September 2010.

Figure 5.5 **Permanent visa grants, onshore and offshore, 2000-01 to 2008-09**[a]



a Permanent migration program visa grants only; excludes humanitarian visas and non-program migration (mostly New Zealand citizens).

Data sources: DIMA (2001); DIMIA (2002, 2003, 2004a); DIAC (2008b, 2009b, 2010a).

The onshore component has increased from 28 per cent of total visa grants in 2000-01 to 37 per cent in 2008-09. This proportion may increase further, if the recent spike in temporary residents translates into a significant increase in future onshore applications for permanent residence, and there is no corresponding increase in the aggregate size of the permanent migration program. (The recent changes in the relative ease with which temporary migrants can obtain permanent residency — such as the changes to the Skilled Occupations List — may mitigate such an increase.)

5.2 The Humanitarian Program

Refugees and asylum seekers are regularly the subject of public and media attention in Australia. Much of this has focused on asylum seekers who arrive by boat without a valid visa — unauthorised boat arrivals. The issue of asylum seekers is sometimes conflated with debate over population growth and immigration more generally. It is, therefore, important to look at the facts on the Australian Humanitarian Program — the government program of most relevance to the above

issues — and the implications of that Program for the wider immigration and population picture.

What is Australia's Humanitarian Program?

The Humanitarian Program runs alongside Australia's larger Migration Program for the purpose of providing residency to people in humanitarian need. It has two components:

- The **offshore resettlement** component offers resettlement in Australia to those currently overseas. It consists of two categories of visa.
  - *Refugee* visas are for offshore people identified as refugees under the Refugee Convention (most of whom are identified and referred to Australia for resettlement by the United Nations High Commissioner for Refugees).
  - *Special Humanitarian Program* visas are for people living outside their home country who are subject to substantial discrimination amounting to gross violation of human rights in their home country.
- The **onshore protection** component offers protection to asylum seekers arriving in Australia who are found to be refugees as defined by the Refugee Convention (box 5.2). Asylum seekers can include those who arrive in Australia on a valid visa and subsequently apply for protection, and those who arrive without a valid visa (figure 5.6).

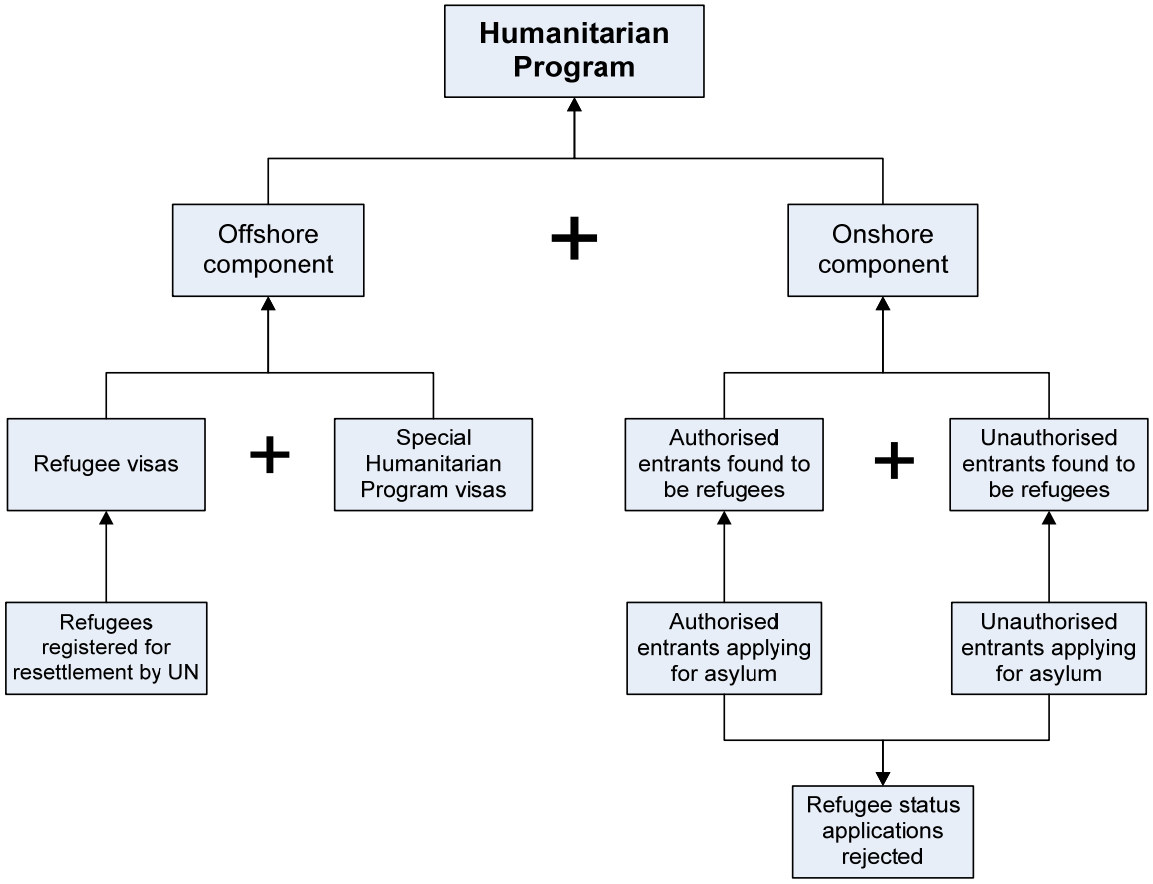
Box 5.2 Refugees and asylum seekers defined

A **refugee**, as defined by the United Nations 1951 Convention relating to the Status of Refugees (the Refugee Convention), is a person outside his or her home country who is 'unable or unwilling to return because of a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or membership of a particular social group'.

An **asylum seeker** is a person who is applying for international protection, but whose claim for refugee status has not yet been verified. Australia's obligations under the Refugee Convention require that it not return refugees or asylum seekers to 'places where their lives or liberties are in danger' ('*non-refoulement*' principle). If asylum seekers are found to be refugees and meet health and character requirements, they are granted protection visas under Australia's Humanitarian Program.

Sources: DIAC (2009f); Phillips (2010).

Figure 5.6 **Components of the Humanitarian Program**

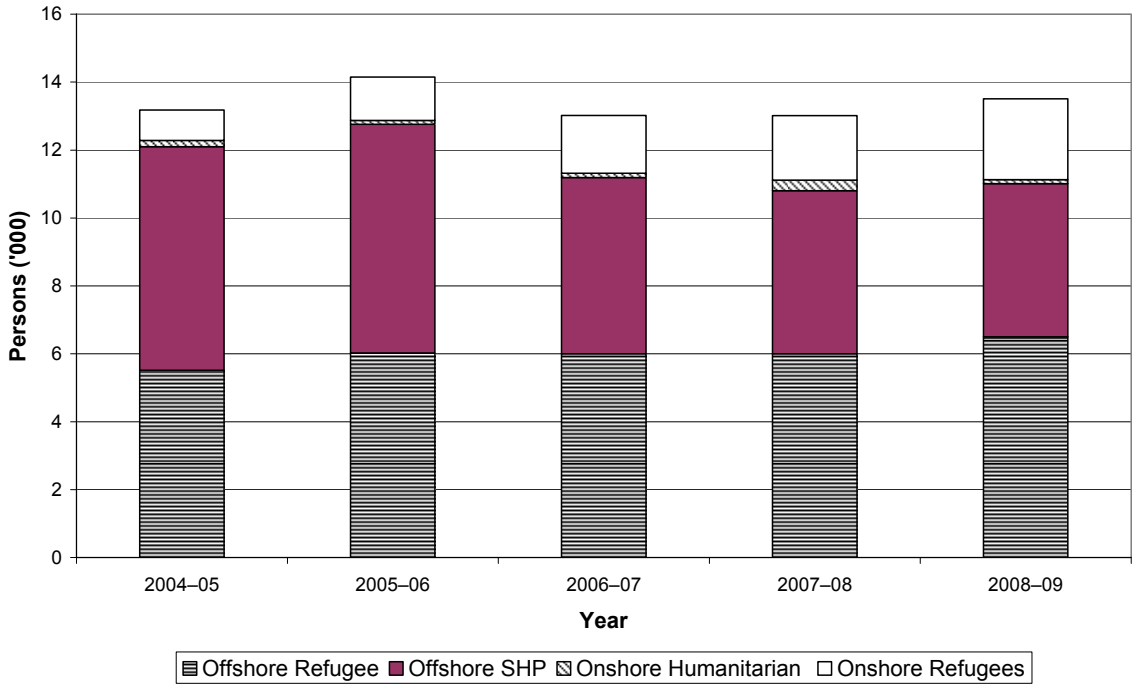


Recent changes in composition

The annual intake under the Humanitarian Program remained stable over the period 2004-05 to 2008-09, with between 13 000 and 14 000 visas granted each year. The offshore resettlement component is the larger component of the program. But the past five years have seen an increase in the size of the onshore component as a proportion of the total program — from about 8.2 per cent of the Humanitarian Program in 2004-05, to around 18.5 per cent in 2008-09 (figure 5.7).[2]

2 Part of the increase in the onshore component may be attributable to a measurement change. Prior to the end of the 'Pacific Solution' in February 2008, unauthorised boat arrivals processed offshore and granted protection were mostly counted as part of the offshore component of the Humanitarian Program. Under current government policy, these unauthorised arrivals are processed on Christmas Island and, if granted protection, are included in the onshore component of the program (Phillips, Klapdor and Simon-Davies 2010, Phillips and Spinks 2010). As the number of unauthorised boat arrivals during the period 2004 to 2007 was relatively low (table 5.2), this change is unlikely to have substantially affected the figures for this period.

Figure 5.7 **Components of Australia's Humanitarian Program, 2004-05 to 2008-09**[a]



[a] Prior to the end of the 'Pacific Solution' in February 2008, unauthorised boat arrivals processed offshore were mostly counted as part of the offshore component of Australia's Humanitarian Program. Since then, unauthorised boat arrivals have been processed on Christmas Island and, if granted protection visas, have been included in the onshore protection component of the program.

Data sources: DIAC (2009d, 2010a).

Onshore asylum seekers and unauthorised arrivals

The number of applications for protection lodged by onshore applicants has increased from about 3100 in 2004-05 to about 5300 in 2008-09. Most applications have been unsuccessful (although the share of successful applications has grown recently) (table 5.1).

Table 5.1 **Asylum seeker applications and outcomes, 2005–08**[a]

No. of applications	*Year*			
	2005	*2006*	*2007*	*2008*
Accepted	577	599	1 212	1 397
Rejected	2 804	2 175	2 451	2 867
Otherwise closed	69	238	57	69
Total	3 450	3 012	3 720	4 333
Accepted as a % of total	16.7%	19.9%	32.6%	32.2%

a Outcomes refer to initial determinations by DIAC. Some refused applications are subsequently successfully appealed. In 2008, according to UN data, around 20 per cent of appeals were successful.

Sources: UNHCR (2007, 2008a, 2008b, 2009).

Unlawful non-citizens and unauthorised arrivals

Under Australian law, any foreign national who enters Australia without a valid visa, remains in Australia with an expired or cancelled visa, or breaches visa conditions is considered an 'unlawful non-citizen' (DIAC 2009e). Unlawful non-citizens (more typically referred to in the media as 'illegal immigrants') include:

- unauthorised arrivals — people arriving in Australia (by air or sea) without a valid visa
  - those arriving by sea without a valid visa, often termed 'boat people' in common usage, are referred to as 'unauthorised boat arrivals' or 'irregular maritime arrivals' by DIAC (Philips 2010, DIAC 2010d)
- visa overstayers — temporary entrants to Australia who fail to depart when their visa expires
- visa holders who breach their visa conditions (for example, by working in Australia when this is not permitted under the conditions of their visa).

While precise data on the number of people becoming unlawful non-citizens in a particular year are difficult to obtain, it appears that the greatest contribution is made by those who overstay their visas. DIAC reported that the number of visa overstayers remaining in Australia at any point in time has remained relatively constant over the past five years at 45 000–50 000 people (DIAC 2010a). In contrast, the number of unauthorised boat arrivals per annum has fluctuated strongly, but has not exceeded 6 000 in the past 20 years (Phillips and Spinks 2010).

Recent trends in unauthorised boat arrivals

According to DIAC (2009g), the majority of asylum seekers arrive in Australia lawfully (holding a valid temporary visa) and subsequently apply for a protection visa under the onshore protection component of Australia's Humanitarian Program.

The number of unauthorised boat arrivals has varied greatly over the past decade. Arrivals increased over the 1990s, reaching a peak of over 5500 people in 2001, before dropping sharply and remaining at low levels for several years (table 5.2).

Recently, boat arrivals have increased again, with nearly 3000 arrivals being recorded in the first half of 2010. If this trend continued in the second half of 2010 (resulting in almost 6000 unauthorised boat arrivals for the calendar year) and all of those arrivals were granted visas, this total would amount to less than 45 per cent of the approximately 13 500 people granted permanent humanitarian visas, or 3.2 per cent of migrants granted visas under all permanent migration programs in 2008-09 (DIAC 2010a).

Table 5.2 **Unauthorised boat arrivals, 1999–2010**

Year	*Number of boats*[a]	*Number of people*[b]
1999	86	3 721
2000	51	2 939
2001	43	5 516
2002	1	1
2003	1	53
2004	1	15
2005	4	11
2006	6	60
2007	5	148
2008	7	161
2009	59	2 750[c]
2010[d]	59	2 982

[a] Boat numbers exclude boats returned from whence they came. [b] Figures for 1999 to 2008 are exclusive of crew, while figures for 2009 and 2010 include crew. [c] Figure includes five deceased at sea 16 April 2009 and 12 deceased at sea 1 November 2009. Figure does not include: two arrivals in an 'esky' on 17 January 2009; four on Deliverance Island with no boat on 29 April 2009; and 78 on board Oceanic Viking intercepted in Indonesian waters in November 2009. [d] To 19 May 2010.

Source: Phillips and Spinks (2010) (1999 to 2008 figures from DIAC; 2009-10 figures compiled by Phillips and Spinks from ministerial press releases).

It is often not appreciated that increases in unauthorised boat arrivals do not influence the total size of the Humanitarian Program, let alone migration levels. As noted, the quota of humanitarian visas granted has been stable over the past five years, with 13 750 places available in 2009-10 (DIAC 2010a). As the number of visa grants to onshore applicants has risen, the offshore component of the

Humanitarian Program has been reduced correspondingly, so that the overall program has not expanded significantly over time.

How many unauthorised boat arrivals are found to be refugees?

Applications for onshore protection do not specify mode of arrival (air or sea), and it is difficult to determine the exact proportions of successful asylum applications among boat arrivals as compared to air arrivals. One source (Phillips 2010) cited figures suggesting that in different years, between 70 and 97 per cent of asylum seekers arriving by boat were found to be refugees and granted protection in Australia or elsewhere. By comparison, data in table 5.1 (which incorporate all onshore asylum seekers) indicate that other onshore asylum seekers have had a much lower success rate in their protection applications, with the majority not found to be refugees.

Recent figures from DIAC — reporting on the outcomes of the new processing arrangements on Christmas Island for unauthorised boat arrivals — appear to indicate high refugee recognition rates among asylum seekers who arrived by boat. From 29 July 2008 (the start of the new processing arrangements) to 30 June 2009, 944 boat arrivals were sent to Christmas Island for processing. Of these, 531 refugee status assessments were initiated and 217 completed. Of the completed assessments, 206 (or nearly 95 per cent) were approved and granted protection visas (DIAC 2009d).

6 Geography of population growth

Key points

- The relative contributions to population growth of natural increase, interstate migration, and overseas migration differ across the states and territories.
- In June 2009, three-quarters of Australians lived in cities with a population of 100 000 or more.
- Population densities in many of the world's largest cities are higher than those in Australia's capital cities.
- In recent years, population growth in capital cities has exceeded growth in most other areas.
- In Sydney, Melbourne and Perth, migrants comprise around one-third of the population.

Population growth does not occur evenly across Australia. Some areas have experienced fast growth, others slow growth, and some have declining populations. The desirable geographic distribution of population growth has attracted considerable public comment recently, in the context of the debate about a 'Big Australia' and congestion problems in our major cities (box 6.1).

Box 6.1 **Recent public commentary on the 'city versus the bush'**

> [A future population of 35 million] will require a significant modification in the way we have settled the country and our lifestyle. It might also be appropriate to look for a new city up north, in the same way that in the last 50 years we've created the Gold Coast. (Bernard Salt, quoted in Yuko Narushima 2010)
>
> It would be an error to ignore the prospect of directing population movements and growth into regional centres. There are good reasons to consider centres such as Coffs Harbour and Cairns as sites of planned population growth, not least the effect on national housing supply. (David Hetherington and Tim Soutphommasane 2010)

(Continued next page)

Box 6.1 (continued)

In spite of our complaints about congestion and property prices, the vast majority of us choose to live in cities. Attempts to shunt city dwellers to regional towns in the country have generally failed. It seems that when city dwellers nod in agreement about spreading out the population it is generally because we think Wodonga or Wagga Wagga are great places for other people to move, so we can stay where we are with more space. (Lisa Prior 2010)

Many people have the impression there's been a continuous flow of people leaving the country for the big city. It's not that simple. The capital cities' share of Australia's population has not been increasing. While there has been a flow of people leaving inland regions for the cities, there's also been a flow of people — particularly the retired — leaving the cities for coastal regions. (Ross Gittins 2010)

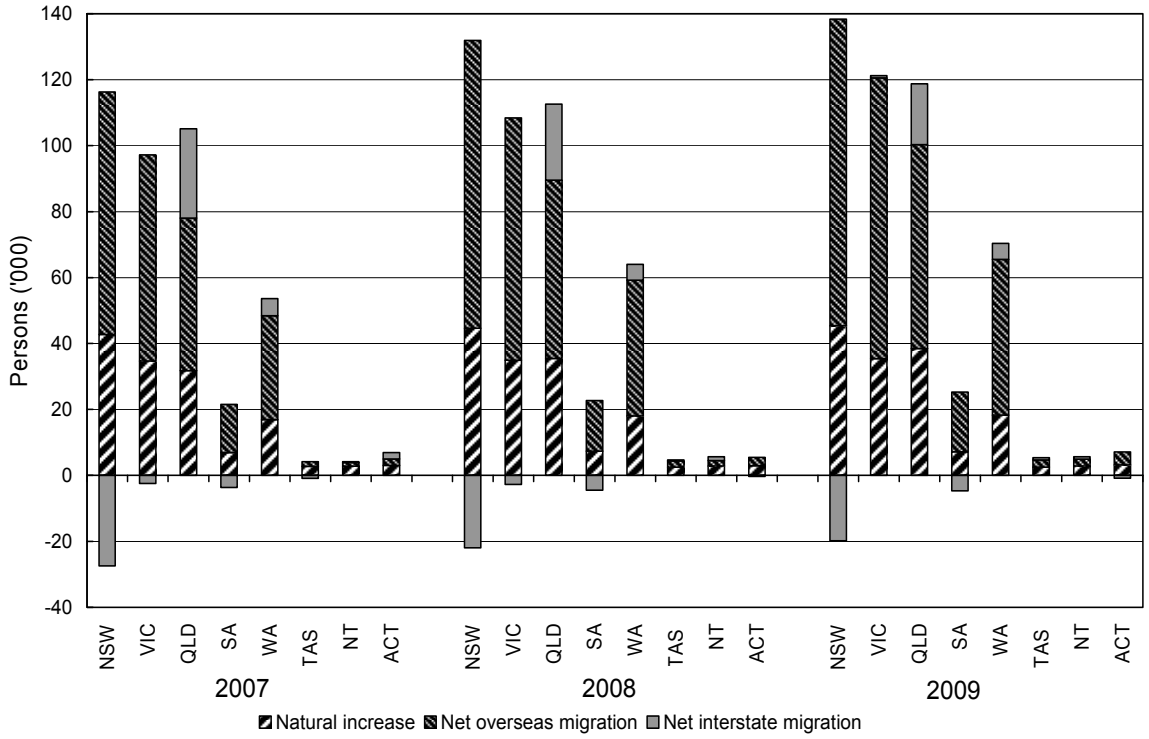
The geographical distribution of our population reflects powerful underlying economic forces. Policies that ignore those forces have failed repeatedly and will continue to do so. (Henry Ergas 2010)

6.1 Population growth at a regional level

In contrast to population change at the national level, at the regional level there is the extra dimension of *internal* migration — movement between towns, cities, and across state boundaries.

ABS data on population growth in states and territories indicate that both the growth rates and the relative contributions of the three components differ considerably across Australia. While New South Wales has a larger number of births than any other state, and attracts more overseas migrants, it has experienced net interstate emigration (figure 6.1). Victoria experienced relatively modest net interstate emigration in 2007 and 2008 and attracted interstate migrants, in net terms, in 2009 (although the number was small). By contrast, in all three years, Queensland, Western Australia and the Northern Territory recorded positive population growth from all possible sources of growth.

Figure 6.1 **Components of population change in the states and territories**[a]



a End of June.

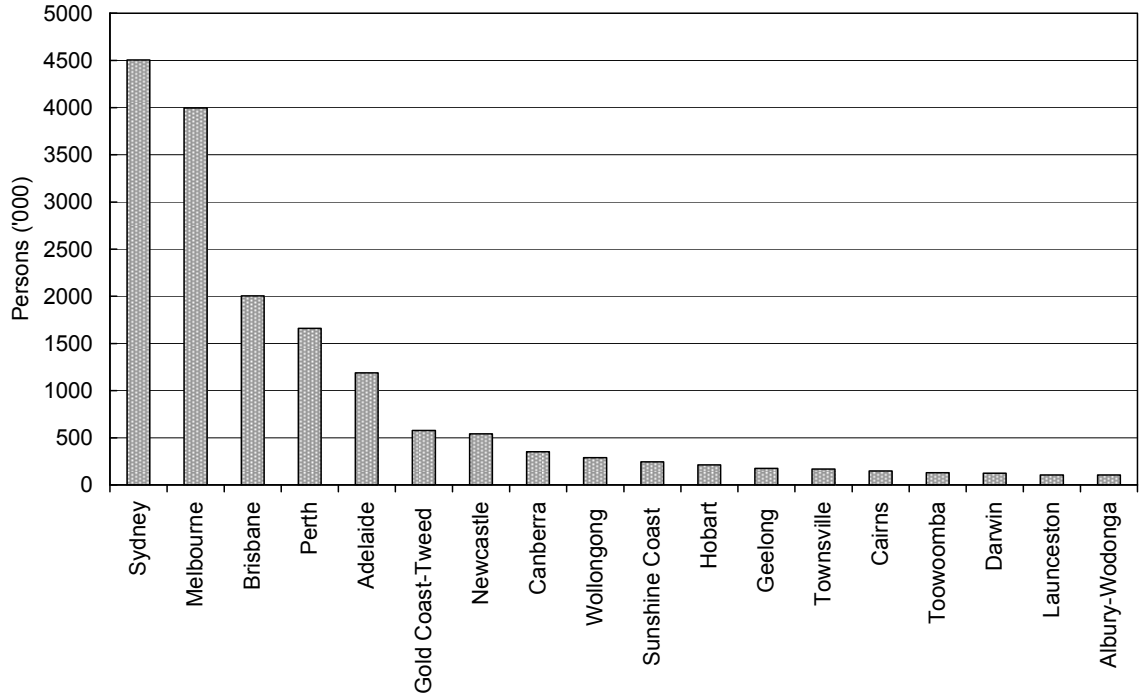
Data source: ABS (2010a).

6.2 Population growth in the cities

Australia's population is highly urbanised. As at June 2009, around 75 per cent of Australia's population (16.5 million people) lived in the 18 Australian cities with a population of 100 000 people or more. Just over 60 per cent (nearly 13.4 million people) lived in the five capital cities with a population in excess of 1 million (figure 6.2).

Figure 6.2 **Population of Australia's major cities**[a]

Number of people, 30 June 2009



a City names correspond to ABS Statistical Divisions.

Data source: ABS (2010a).

How 'dense' are Australian cities?

Population density measures vary widely between sources, due mainly to differences in how city boundaries are defined. These measures need to be used and interpreted carefully.[1]

Data sourced from Demographia (2010) appear to provide a reasonably consistent basis for comparing population densities in Australian cities with those overseas.[2] The data indicate that population densities in many of the world's largest cities are higher than those in Australia's capital cities. However, some large North American cities have population densities that are similar to those of Melbourne and Sydney (table 6.1). For example, while Paris and London greatly exceed the population

1 For example, the latest ABS estimates of population density for Australia's capital cities (ABS 2010h) include sparsely populated urban fringes (which reduce estimated capital city population densities) and thus contrast with other estimates, such as those reported by Infrastructure Australia (2010).

2 Demographia claims to use a common methodology for its international city comparisons.

densities of Sydney and Melbourne, New York and Chicago have comparable or lower densities.

Table 6.1 **International city population densities**

	Population [a,b]	Population density
	'000	people/km^2
New York	19 712	1 800
Shanghai	18 400	6 300
Mumbai	17 385	24 900
Los Angeles	13 829	2 400
Moscow	13 250	3 000
Paris	10 143	3 300
Chicago	8 646	1 500
London	8 278	5 100
Hong Kong	7 000	25 100
Berlin	3 675	3 700
Montreal	3 317	2 000
Sydney	4 504	2 000
Melbourne	3 996	1 600
Brisbane	2 004	900
Perth	1 659	1 200
Adelaide	1 187	1 400
Hobart	212	1 000
Canberra	352	1 100
Darwin	125	900

a Dates for population data are as follows: Berlin 2001, Chicago 2000, Hong Kong 2009, London 2001, Los Angeles 2000, Montreal 2006, Moscow 2002, Mumbai 2001, New York 2000, Paris 2006, Seattle 2000, Shanghai 2010. **b** Preliminary 2009 city populations for Australia.

Sources: ABS (2010d); Demographia (2010).

Population growth in our capital cities

In recent years, population growth rates in most capital cities have generally exceeded growth rates in the balance of their respective states, although there has been some variability and some regional centres have grown at a similar or faster rate than their capital city. Reflecting their share of the population, capital cities in all jurisdictions, except Queensland and Tasmania, have also contributed most of the growth in their state or territory (table 6.2).

Table 6.2 **Population growth in major population regions[a], 2004–09**

Region	*Aggregate population growth*	*Average annual rate of growth*
	'000 people	Per cent
New South Wales		
Sydney	**290.2**	**1.34**
Balance of state	**136.0**	**1.06**
Newcastle	33.4	1.28
Wollongong	14.3	1.02
Albury-Wodonga[b]	5.9	1.16
Victoria		
Melbourne	**369.5**	**1.96**
Balance of state	**97.2**	**1.39**
Geelong	11.8	1.40
Ballarat	8.3	1.85
Bendigo	7.6	1.79
Queensland		
Brisbane	**52.1**	**2.34**
Balance of state	**307.0**	**2.75**
Gold Coast	17.1	3.28
Sunshine Coast	7.0	3.09
Townsville	5.1	3.20
Toowoomba	2.8	2.06
South Australia		
Adelaide	**60.3**	**1.05**
Balance of state	**23.9**	**1.13**
Western Australia		
Perth	**198.7**	**2.58**
Balance of state	**66.0**	**2.40**
Mandurah	16.2	4.44
Tasmania		
Hobart	**9.9**	**0.96**
Balance of state	**10.6**	**0.74**
Launceston	3.7	0.72
Northern Territory		
Darwin	**16.2**	**2.81**
Balance of territory	**8.0**	**1.65**
ACT		
Canberra	**24.7**	**1.47**

a Refers to Statistical District. **b** Part of the city (Wodonga) is located in Victoria.

Source: ABS (2010a).

Unpacking population growth in capital cities

There are no direct data on the relative contributions of the three components of population growth for capital cities. However, it is possible to derive estimates from separate ABS sources on births and deaths, net internal migration, and total population growth.[3]

While the population in all capital cities grew between 2001 and 2006, the drivers of growth differed across cities (table 6.3). For example, Sydney and Melbourne experienced negative net internal migration, while Brisbane recorded a large positive contribution from net internal migration. Melbourne and Brisbane grew more rapidly than Sydney during the period, although Sydney recorded the highest natural increase. The inferred figures for net overseas migration indicate that Melbourne attracted more international migrants than Sydney, with Brisbane and Perth also attracting a large number of migrants in net terms.

Table 6.3 **Components of population change in Australian capital cities, 2001–06**

	Total population change[a]	*Natural increase*[b]	*Net internal migration*[c]	*Net overseas migration*[d]
Sydney	153 716	161 071	-120 994	113 639
Melbourne	271 390	124 208	-18 697	165 879
Brisbane	190 629	65 808	42 742	82 079
Adelaide	37 826	20 399	-9 625	27 052
Perth	125 746	50 027	3 498	72 221
Hobart	8 199	4 756	2 365	1 078
Darwin	7 520	7 200	-1 997	2 317
Canberra	14 900	13 901	-445	1 444

[a] End of June 2006 population less end of June 2001 population. [b] Calculated as the difference between births and deaths for the calendar years 2002, 2003, 2004, 2005, and 2006. [c] Computed by the ABS (2009b). [d] Inferred from data in the preceding three columns, using the formula: net overseas migration = total population change – natural increase – net internal migration.

Sources: ABS (2007a, 2007b, 2008a, 2009b).

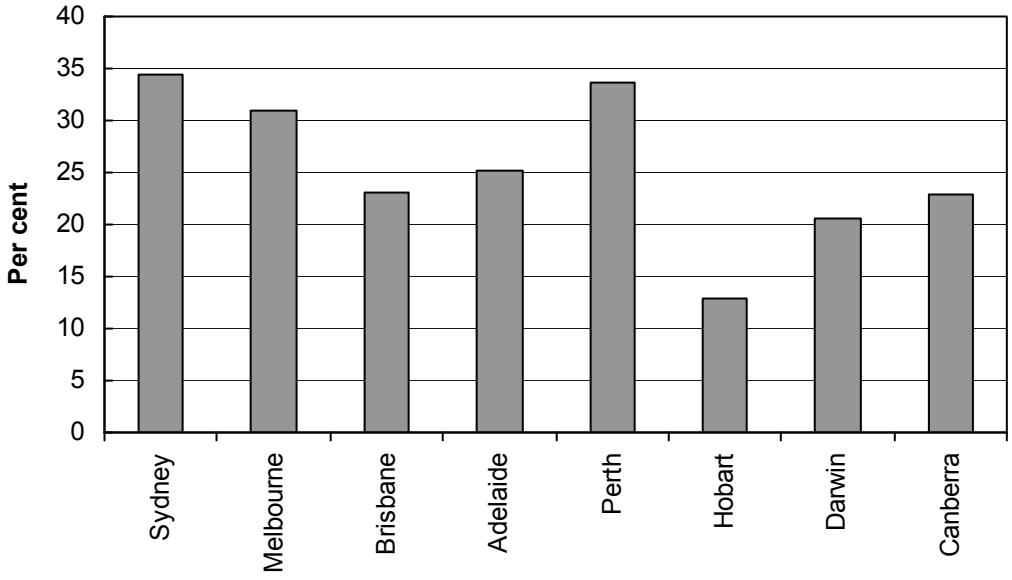
3 If state population growth consists of: natural increase + NOM + net internal migration, NOM can be estimated by: total population change – natural increase – net internal migration. The inferred results for NOM at the city level, however, should be used and interpreted with much caution, due to their lack of comparability with ABS data on overseas migration at the state and territory level. For instance, ABS data on NOM for Victoria between 2001 and 2006 show a lower level of NOM than the figure obtained for Melbourne alone.

Capital city populations and first generation migrants

The relative contribution of overseas migration to the population of cities over time can be illustrated with Census data on the proportions of first generation migrants in each capital city. This reveals that Sydney, Perth and Melbourne have the highest migrant shares of population, at over 30 per cent each (figure 6.3), and Hobart the lowest (13 per cent).

Figure 6.3 **First generation migrants in Australian capital cities, 2006 census**

Share of overseas born population[a] in total city population[b]



a Overseas born population also includes people born in Oceania and Antarctica. **b** People who did not state where they were born are assumed to be distributed between overseas born and Australian born in the same proportions as those who did state where they were born.

Data sources: ABS (2007c, d, e, f, g, h, i, j).

7 Future population growth

Key points

- Population *projections* indicate how population might change subject to various assumptions about trends in the components of population change. In contrast, population *forecasts* seek to predict how population *is likely* to change.
- Population projections should be used primarily as a tool for analysing the relationship between components of population change and future population. Their value in predicting actual future population growth is limited.
- Future population *levels* are sensitive to even minor changes in the components of population change.
- Australia's population ageing is being driven mainly by increased longevity.
- Realistic changes in fertility can have little impact on the age structure of the population in the short to medium term. While they have a greater effect in the longer term, they cannot stem the ageing of Australia's population.
- Realistic changes in migration levels also make little difference to the age structure of the population in the future, with any effect being temporary.

There is considerable interest in the likely future size and structure of Australia's population. The population projections in the most recent Intergenerational Report sparked an intense debate in the lead-up to the last election about how 'big' Australia should become, and what rate of (immigration) growth was sustainable — economically, socially and environmentally (box 7.1).

Missing from the debate has been much recognition of the inherent uncertainty associated with predicting future population, and the implications of that uncertainty for government policy.

Box 7.1 **Recent public commentary on future population growth**

We're still firmly on track for the intergenerational report's 36 million or so residents in 40 years. And while neither side of politics is game to say it, that's a necessary thing. (Michael Pascoe 2010)

Why doesn't someone say let's not have all this huge 36 million, let's actually have a plan, an idea. (Dick Smith 2010)

A figure of 36 million is a very high level and vastly higher than most people imagined until the [intergenerational report] was released. Imagine 42 million … It would involve a serious deterioration in quality of life and a fundamental change to the way people live. (Bob Birrell, quoted in Simon Benson 2010)

… let us not forget that population predictions are at best a most imprecise science and very much depend upon certain fertility, mortality and migration levels continuing into the future. For example, we really do not know what might happen to fertility levels over the next few decades. (Peter Curson 2010)

7.1 Our future population — the role of 'projections'

The well-publicised figure of 35.9 million people by 2050, published by the Treasury (2010) was generally treated in public discussion as an 'estimate' or 'forecast' of Australia's future population. However, that figure (as well as others produced in past Intergenerational Reports and ABS publications) is no more than a 'projection', based on assumptions derived from past behaviour that may not hold in the future, and abstracting from any policy changes.

How do 'projections' differ from 'forecasts'?

Producing a reliable population forecast requires accurate predictions of how the three drivers of population growth — fertility, mortality and net overseas migration (NOM) — will change over time. This faces many challenges. For example, it is difficult to predict changes in policies that might influence these components, either directly or indirectly. For this reason the less ambitious, but more transparent, exercise of a population 'projection' is undertaken — presenting population scenarios under particular explicit assumptions (box 7.2).

Box 7.2 **Projections versus forecasts**

A population projection is an illustration of how the size and structure of the population changes assuming specific trends in the drivers of population growth (fertility, mortality and net migration).

It is common for more than one population *projection* to be produced, illustrating how different assumptions can change the size and structure of the population. Generally, one will involve 'medium' assumptions about the primary components of population change. Typically, this assumes that recent demographic and economic trends will continue into the future, and government policies will remain the same. The medium projection is usually accompanied by high and low projections that rely on corresponding assumptions about the components of population change. The combination of projections can indicate a potential range for the future population.

In contrast, *forecasts* are attempts to *predict* outcomes at a certain point in the future. Common examples of forecasts are economic or weather forecasts.

Long-term population forecasts are rarely produced due to the inherent difficulty in making long-term predictions of future trends in fertility, mortality and migration, as well as their determinants, including any policy changes that might affect them directly (such as policies that might affect fertility or health) or more indirectly (through changes in general economic conditions).

Some current projections of population growth

There are two main official publications that include population projections for Australia:

- The 'Intergenerational Report' (IGR) produced by the Australian Treasury
- 'Population Projections' produced by the ABS.

Both use the 'cohort-component method' to generate population projections (box 7.3).

The most recent Intergenerational Report was released in 2010 and contained population projections for Australia from 2009 to 2050 (Treasury 2010). As noted, the report projected Australia's population to reach 35.9 million by 2050 under its 'base case' projection. The projection relied on 'medium' (box 7.2) assumptions about future fertility, mortality and net overseas migration.

Box 7.3 **Cohort-component method**

The cohort-component method is a common framework for calculating population projections. It involves applying assumptions made about future levels of fertility, mortality, overseas migration and internal migration to a base population (split by sex and single year of age) to obtain a projected population for the following year. The assumptions are then applied to this new (projected) population to obtain a projected population again for the next year. This process is repeated until the end of the projection period is reached. (A spreadsheet-based cohort-component model can be downloaded from the Commission's website at: http://www.pc.gov.au/research/commissionresearch/national reformagenda/modem/modem2.)

The primary alternative to the cohort-component method is a simple extrapolation of population size. The cohort-component method is distinguished from this method by its ability to preserve knowledge of the age distribution of a population over time.

Sources: ABS (2008b); Hollmann et. al. (2000).

The most recent ABS publication projects Australia's population from 2007 to 2101 under three sets of assumptions (ABS 2008b). The ABS produced a projection of 35.5 million for 2056 in its Series B (medium case) projection.

The ABS medium projection is slightly lower than that in the IGR, primarily due to a lower assumed total fertility rate (1.8 compared to the Treasury assumption of 1.9).

It is notable how much the 'medium' projection assumptions have changed over time, producing successively higher population projections (table 7.1, figure 7.1). In IGR projections over the past seven years, 40-year projections have increased by 10 million people (albeit from different bases). This is largely because the assumed level of future net overseas migration was increased from 90 000 to 180 000, while assumed fertility and life expectancy parameters were also increased, in line with recent experience.

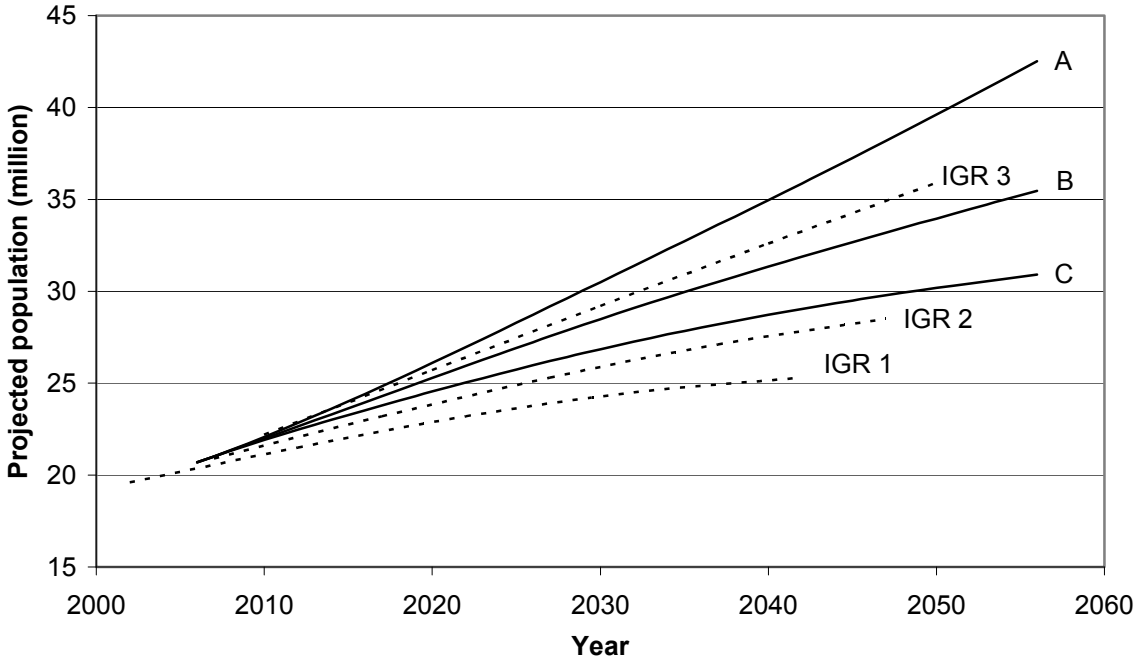
Table 7.1 **Population projections under different assumptions**

	Total fertility rate	*Net overseas migration*	*Life expectancy at birth*		*Population projections*		
			Males	*Females*	*Base year*	*Projection year*	*Projected population*
		persons	years	years			Million
ABS 2008							
Series A	2.0[a]	220 000[b]	93.9[c]	96.1[c]	2007	2056	42.5
Series B	1.8[a]	180 000[d]	85.0[c]	88.0[c]	2007	2056	**35.5**
Series C	1.6[a]	140 000[b]	85.0[c]	88.0[c]	2007	2056	30.9
IGR 1	1.6[e]	90 000[f]	82.5[g]	87.5[g]	2002	2042	**25.3**
IGR 2	1.7[h]	140 000[i]	86.0[j]	89.8[j]	2007	2047	**28.5**
IGR 3	1.9[k]	180 000[l]	87.7[m]	90.5[m]	2009	2050	**35.9**
Current level	1.901[n]	277 710[o]	79.3[p]	83.9[p]			

[a] From 2021. [b] From 2010-11. [c] From 2056. [d] From 2007-08. [e] From 2042. [f] From 2008. [g] From 2047. [h] From 2047. [i] From 2010. [j] From 2047. [k] From 2013. [l] From 2012. [m] From 2050. [n] For 2009 (ABS 2010e). [o] For 2009 (ABS 2010b). [p] For 2007-2009 (ABS 2010f).

Sources: ABS (2008b); Treasury (2002, 2007, 2010).

Figure 7.1 **Comparison of projections – Australia**[a]



[a] A, B and C denote Series A, Series B and Series C population projections in ABS (2008b).

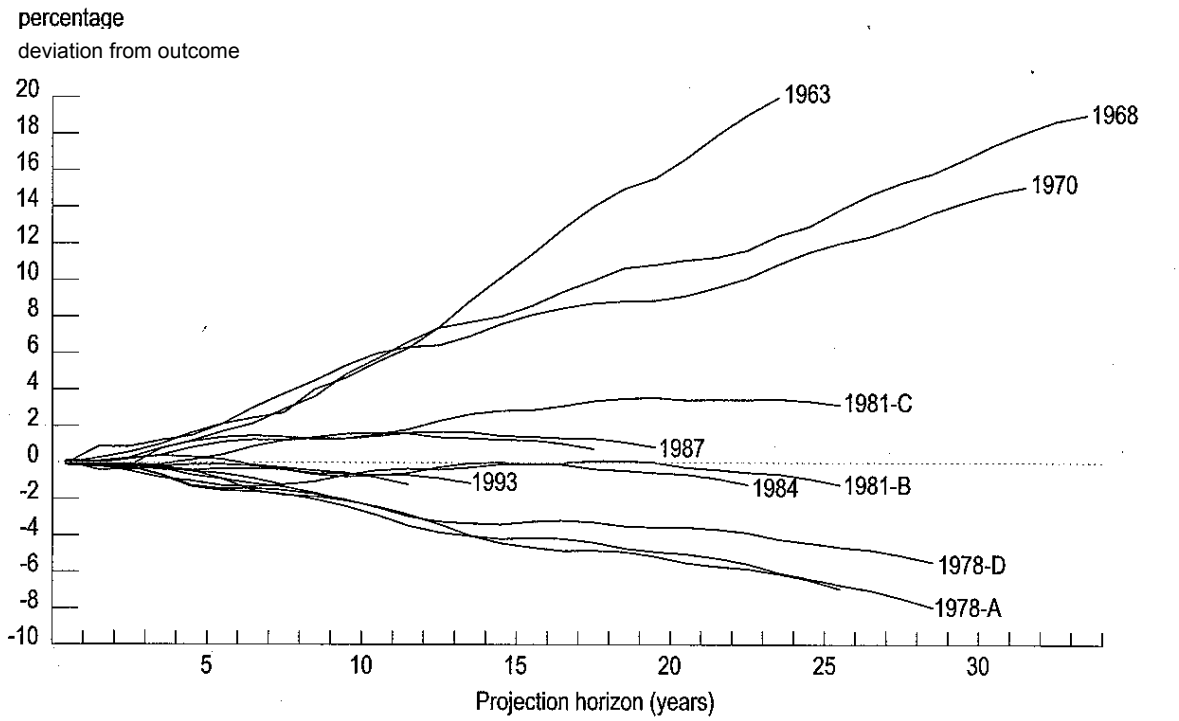
*Data source*s: ABS (2008b); Treasury (2002, 2007, 2010).

Projections versus actual outcomes

Population projections are not forecasts. However, given that they are frequently interpreted in that manner, it is instructive to look at how past projections have compared to subsequent population growth.

Projections by the ABS have in fact diverged greatly from population outcomes (Wilson 2009). Unsurprisingly, the further into the future the population projections extended, the larger the deviation became. For population projections 20 years into the future, deviations from actual population ranged between -5 and 16 per cent (figure 7.2). (Projections produced during the baby boom, on the assumption that fertility would remain high, were the least accurate.)

Figure 7.2 **Deviations in past ABS projections of Australia's total population by projection horizon**[a]



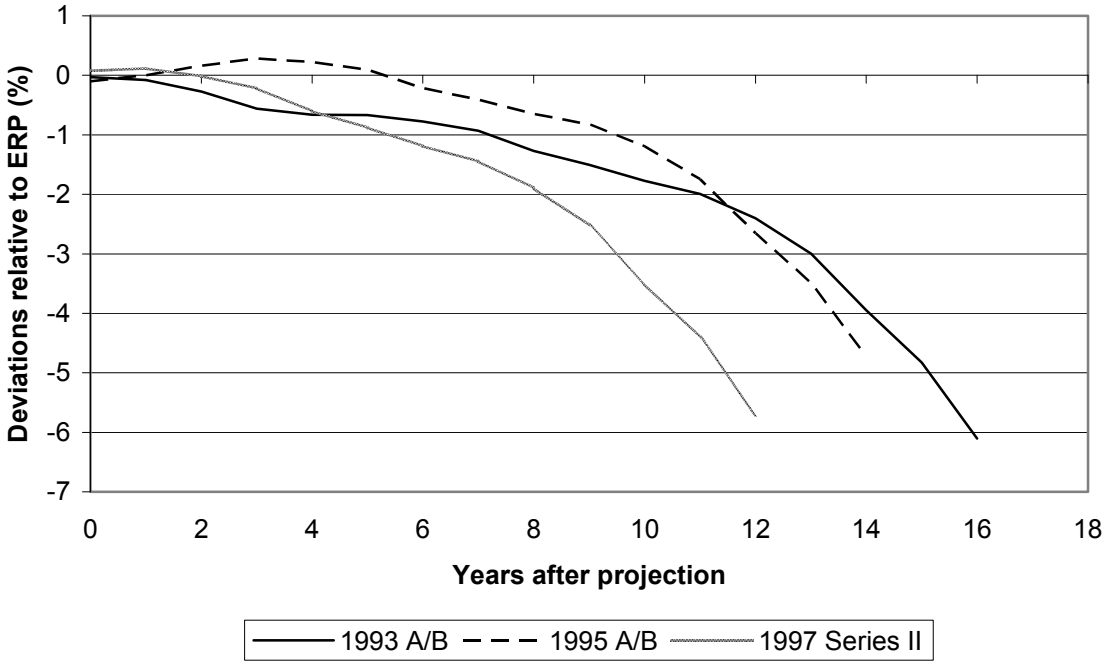
[a] Positive deviations indicate projections that turned out to be higher than the outcome. Calculated from the middle series in various ABS Population Projections and estimated resident population from ABS catalogue no. 3201.0. Labels refer to the launch year of the projections and, where relevant, the series. Where there was no middle series projection (1978 and 1981) the two series that came closest to a middle series were chosen. Australia's total population is considered to be the estimated resident population.

Source: Reproduced from Wilson (2009).

More recent ABS projections have also diverged from actual outcomes (figure 7.3). After twelve years, the projections diverged from population outcomes by between

-2 and -7 per cent. This divergence is primarily due to the increased levels of net overseas migration and fertility that occurred between 2007 and 2009.

Figure 7.3 **Deviations in recent ABS projections of Australia's total population by year**[a]



[a] Australia's total population is considered to be the estimated resident population.

Source: ABS (2008b).

In sum, predicting future population growth is highly sensitive to assumptions about population growth drivers that, while seeming reasonable at the time of the prediction, often do not eventuate.

That said, projections are useful as a tool for investigating the *relationship* between the drivers of population change and the size and structure of the future population. One such application involves examining the effect of potential fertility, mortality and migration scenarios on the age structure of Australia's future population.

7.2 Future population growth and ageing

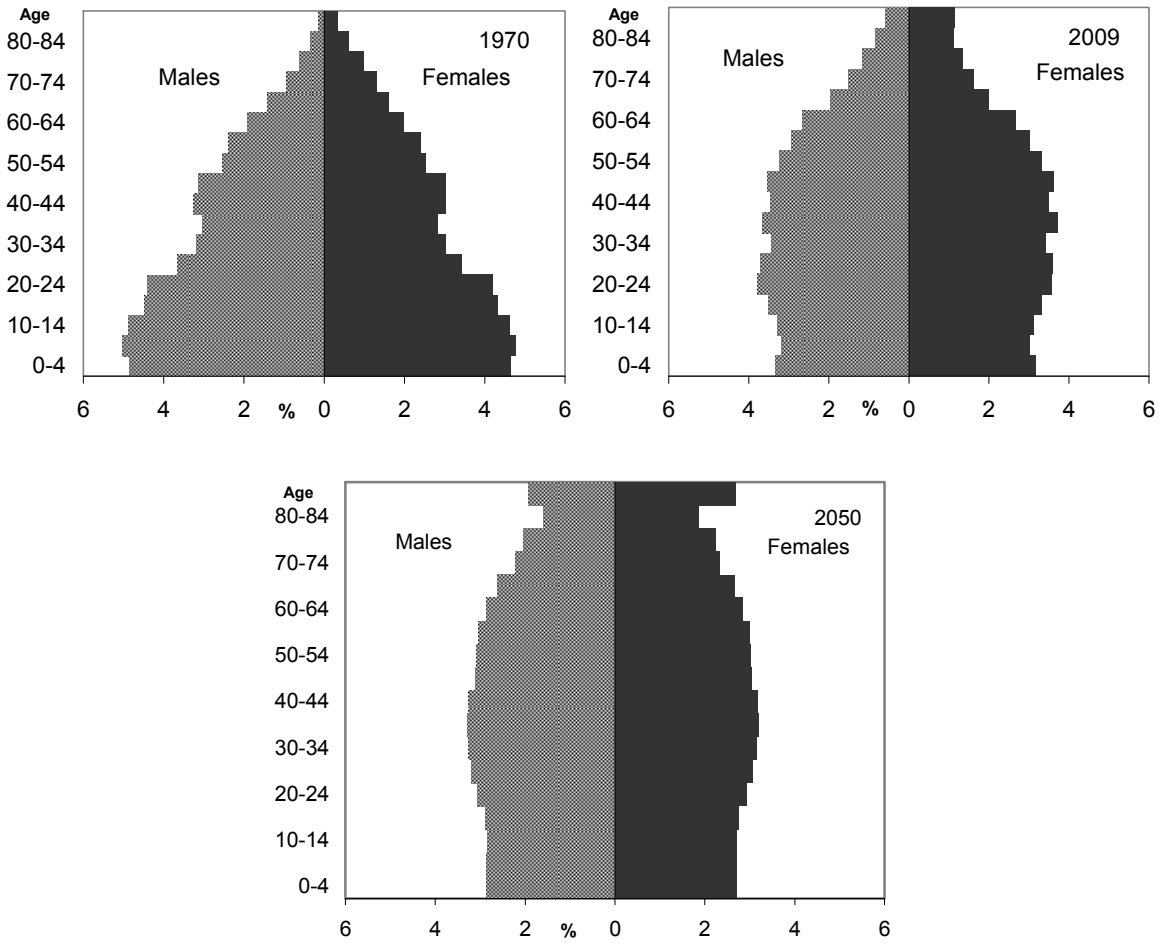
Over the past century, Australia's population has been progressively ageing. Assuming current trends in fertility, mortality and NOM continue, over the next 50 years Australia's population is projected to age faster than it has in the past (figures 7.4, 7.5). In 1901, around 4 per cent of the population were aged 65 years

or more. This increased to 8 per cent by 1950 and to 13 per cent by 2009. In the Treasury's latest projections for 2050, this proportion increases to nearly one-quarter (Treasury 2010).

Increased life expectancy is the primary driver in the long term. However, the post-war baby boom, followed by a pronounced decline in the fertility rate from the 1960s, is the reason why this increase is projected to be so abrupt.

The shift towards older populations is not a phenomenon restricted to Australia. If current trends were to continue, developed countries such as Japan, Italy, Greece and Switzerland are all likely to have more than 30 per cent of their populations aged 65 and over in 2050 (PC 2005b).

Figure 7.4 **Percentage of population by age group**



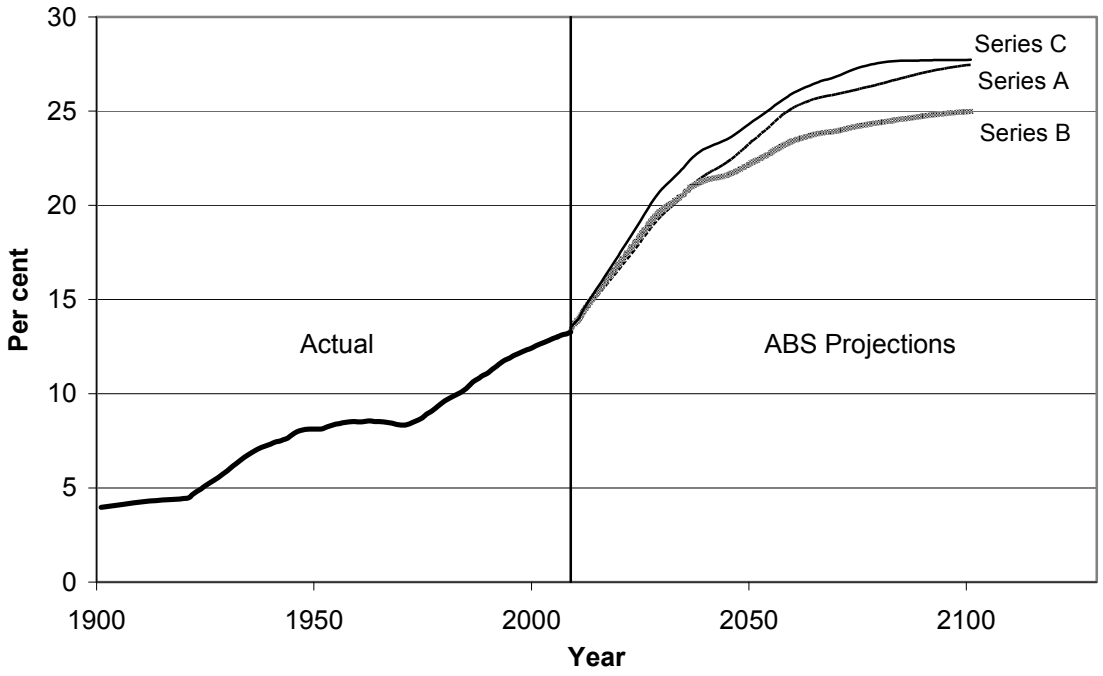
Sources: ABS (2008a, 2008b, 2009c).

An ageing population means proportionally fewer people of working age relative to those in retirement (a higher dependency ratio), together with increased government

spending on health and aged care services. The Treasury projected that the fiscal pressure Australia-wide (including the States and Territories) would amount to 2.75 per cent of GDP by 2050 (Treasury 2010).

Some have argued that for Australia to reduce the problems associated with an ageing population, it needs to increase its level of immigration or to take measures to increase the fertility rate. In practice, neither of these can be a panacea.

Figure 7.5 **Percentage of the population aged 65 and over**



Sources: ABS (2008a, 2008b, 2009c).

How do changes in fertility affect the age structure of the population?

As discussed in chapter 3, the total fertility rate has declined significantly in Australia over the past 50 years, with only a slight recovery in the past few years. There would need to be a much larger increase in the total fertility rate to even minimally counteract the ageing projected for 2050.

Using projections beginning in 2007, Lattimore and Pobke (2008) projected that in 2051 the proportion of the population aged 65 and over would be largely unchanged for realistic values of the total fertility rate (TFR) (table 7.2). For the proportion of the population aged 65 and over to be reduced from 23 to 20 per cent in 2051, the TFR would need to reach levels that last occurred in the 1960s.

Over longer time periods, it was found that changes in the TFR will have a greater effect in reducing the proportion of the population aged 65 and over. However, for all plausible future levels of the TFR, there would still be a much larger proportion of the population aged 65 and over than there is today.

Table 7.2 **Population age structure projections for 2051 with illustrative total fertility rates[a]**

Long-term total fertility rate	*Proportion of the population aged 65 or older*	*Proportion of the population aged 14 or under*	*Total dependency ratio[b]*
	per cent	per cent	per cent
1.85	26.0	16.1	72.7
2.10	24.9	17.8	74.5
3.40[c]	20.0	26.4	86.6

[a] Projections assume a base year of 2007. The total fertility rate is assumed to reach the long-term value after 30 years. Net overseas migration is assumed to be 135 000 over the projection period. [b] The total dependency ratio is defined as the number of people under the age of 15 and the number of people aged 65 or older, as a proportion of the number of people between the ages of 15 and 64 inclusive. [c] Projections produced using Fertmod (PC 2009).

Sources: Lattimore and Pobke (2008); PC (2009).

Moreover, if significant increases in fertility were to occur, there would be an increase in the dependency ratio in the short to medium term (table 7.2). In an ageing population there are fewer people working to support the older proportion of the population. However, the diminished workforce also needs to support the relatively young. While significant increases in the fertility rate may reduce the proportion of the population that are relatively old in the long term, in the short to medium term it would:

- increase the proportion of the population that are relatively young, as there are more births
- reduce the size of the working population, as more women reduce their participation in the labour force after giving birth
- increase the dependency ratio, that is, the number of people who are not of working age as a proportion of the number of people of working age.

How do changes in migration intake affect ageing?

Net overseas migration (NOM) for 2008-09 is estimated to have been approximately 300 000, higher than the historical average. The most recent ABS and Treasury population projections assumed in their medium-level projections a NOM of 180 000 over the projection period.

In its previous work, the Commission (PC 2005b) illustrated that the ability of additional migration to alleviate population ageing declines, as the level of migration increases. Increasing NOM from 150 000 to 300 000 has a smaller effect on ageing, and on the dependency ratio, than increasing NOM from zero to 150 000 (table 7.3).

Table 7.3 **Population age structure projections for 2044-45 with varied levels of NOM**[a]

Long-term net overseas migration	*Proportion of the population aged 65 or older*	*Proportion of the population aged 14 or under*	*Total dependency ratio*
	per cent	per cent	per cent
0	28.1	14.9	75.3
150 000	23.6	16.3	66.3
300 000	20.8	17.1	61.2

[a] Projections assume a base year of 2005. The NOM level is assumed to reach the long-term value after ten years. The total fertility rate is assumed to be 1.8 over the projection period.

Source: PC (2005b).

McDonald and Kippen (1999) also showed that the reduction in the proportion of the aged from increased migration is smaller for higher initial levels of migration. They concluded that each additional 50 000 immigrants has roughly half the impact on population ageing than the previous addition. Given that Australia's NOM is now relatively high, increasing NOM can only have a limited effect on ageing.

Further, increasing migration levels can mitigate population ageing only in the short to medium term. This is because, although migrants tend to be relatively young on arrival to Australia, as they begin to age, the impact of new migration on the proportion of the population aged 65 and over is reduced.

In sum, realistic changes in migration levels are unlikely to make a substantial difference to the age structure of Australia's population in the future, and any effects are likely to be temporary. Realistic changes to fertility could have some effect in the long term, but the proportion of older Australians will still grow from current levels. Increased longevity (a desirable trend!) is the dominant force.

8 Potential impacts of migration and population growth

Key points

- While population growth is likely to increase aggregate gross domestic product (GDP) and gross national income (GNI), more relevant measures are per capita income and, ultimately, community wellbeing.
- The impacts of immigration growth on GDP and GNI per head of the existing resident population are ambiguous and depend on the source, composition and context in which the growth occurred.
- Population growth and immigration (its main source) can magnify existing policy problems and amplify pressures on 'unpriced' entities, such as the environment, and urban and social amenity.
- The impacts of population growth and immigration are unlikely to be evenly distributed across Australia's population — there are likely to be both winners and losers.

The implications of population growth and, in particular, net migration, for Australia's economic growth have been central to the recent population debate (box 8.1).

This chapter briefly outlines some of the issues that need to be taken into account in understanding this complex and often misunderstood relationship. It also identifies potential impacts on 'quality of life' and community wellbeing, which are not fully captured by economic growth measures. Readers are referred to the vast economic literature (box 8.2 presents a small sample) for a more comprehensive treatment of the issues touched on here.

Box 8.1 Some recent public commentary on impacts of migration and population growth

More people means more roads, more urban sprawl, more dams, more power lines, more energy and water use, more pollution in our air and natural environment and more pressure on our animals, plants, rivers, reefs and bush. If we want our kids to enjoy the same quality of life we have enjoyed, we should aim to stabilise our population and overall consumption at sustainable levels. (Charles Berger, ACF 2010)

It is remarkable how effective the combination of a growing population and a strong balance sheet can be as a multiplier in downstream economic impact. More people, more production, more demand, more wealth. (Morris Kaplan 2010)

There has been a longstanding consensus among the policy elite that continued economic and population growth is essential to our quality of life, capacity to employ, provision of health, education and welfare, and the rich cultural diversity we enjoy. (Geoff Allen, Allen Consulting Group 2010)

By far the greatest beneficiaries of high immigration are the immigrants, not the resident population. High immigration lowers per capita productivity growth, a key to sustainable growth. It retards the growth of per capita wealth. It accelerates the rate of food importation … It accelerates the increase in urban overcrowding and traffic congestion. It increases Australia's greenhouse emissions, per capita ... It lowers Australia's food security. (Paul Sheehan 2010)

Box 8.2 A large academic literature exists

The seminal article on international movement of factors of production and income distributional issues is MacDougall (1960). The earliest application of this analysis to immigration is by Berry and Soligo (1969). A good later survey of the analysis of immigration is contained in Chiswick (1982). Borjas (1994, 1995) provides a good exposition of the potential impacts of immigration on the existing population.

Seminal articles on the possibility that economic growth may reduce wellbeing when there are price distortions include Bhagwati (1958, 1968) and Johnson (1967). There is also a large volume of research on the implications of population growth in cities for the income and wellbeing of the residents. Glaeser (1996) provides an overview of the potential positive and negative impacts. Arnott (1979) presents one of the earliest models for determining the optimal city size that accounts for the main positive and negative impacts of population growth (including the impacts on urban and environmental amenity and economies of scale and density).

(Continued next page)

Box 8.2 (continued)

There is also a very large literature on the economics of Australian population growth and immigration. Corden (2003) provides a summary of the issues in an Australian context. A volume of articles produced by Clarke et al. (1990) for the now defunct Bureau of Immigration Research presents a still relevant survey of the potential environmental and urban amenity impacts. Many researchers have also focused on the Australian labour market implications of migration (see, for example, Addison and Worswick (2002), Bond and Gaston (2010) and Harris and Robertson (2007)).

Potential impacts on economic growth

In the absence of any distorting influences (discussed later), population growth is likely to increase both Australia's gross domestic product (GDP) and gross national income (GNI).[1] A larger population translates into a larger labour force (although in the case of natural increase, this effect is delayed), and hence an increase in Australia's aggregate output (and income). However, aggregate measures, such as GDP and GNI, do not demonstrate how the output and income of individual Australians change as a result of population growth — total income may have increased but there will be more people sharing it. In this context, GDP and GNI per head of population are more relevant and instructive.

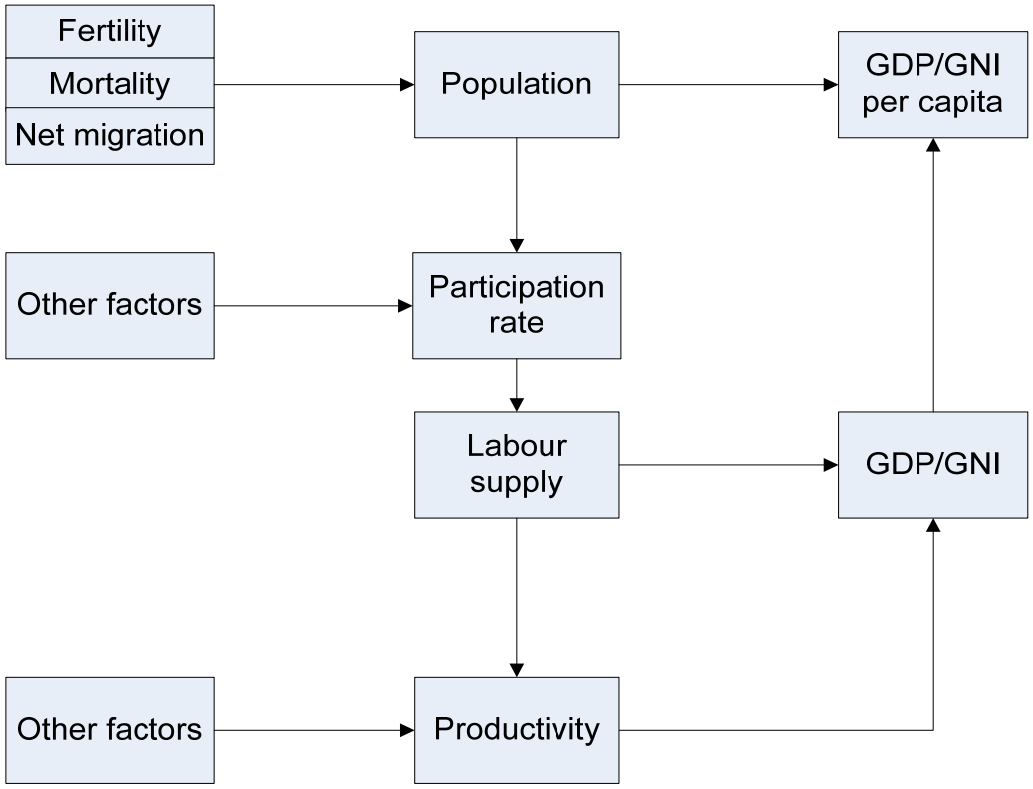
Potential impacts on GDP and GNI per head of the population

The linkages between population growth and GDP or GNI per head of the population are less obvious. Population growth can lead to growth in per capita incomes through two channels:

- if (all else being constant) labour supply grows at a faster rate than the population — this would occur if labour force participation increased
- if average labour productivity increases — that is, if the value of output for each hour worked increases (figure 8.1).

1 Gross domestic product is a measure of the aggregate size of the economy and shows the total value (adjusted for inflation) of all goods and services produced in Australia in a given year. Gross national income is a measure of the aggregate income that accrues to Australians and shows the aggregate real value of all goods and services produced in Australia (accounted for in GDP) adjusted for net income payments made to or received from foreigners.

Figure 8.1 **The '3 Ps' of economic growth**
Population, participation and productivity



The age structure of Australia's population is one of the key determinants of labour force participation and labour supply generally. As Australia's population ages, participation rates tend to fall (PC 2005b). In this context, rises in fertility and net overseas migration can increase participation, whereas declining mortality has the opposite effect. (As discussed in chapter 7, changes in migration flows are unlikely to have a significant and lasting effect on the ageing of Australia's population, while realistic changes in fertility may only have a significant effect in the longer term.)

However, the labour participation story is more complex than this. Factors other than age also affect a person's willingness and ability to be part of the labour force, including prevailing labour market conditions, social trends, the person's intrinsic motivation, as well as government policies in areas such as tax and welfare. Thus, the impacts of population growth on participation rates are ambiguous and could vary with the context.

The impacts of population growth on productivity are also complex and, in many instances, depend on the sources of that growth and the context in which it occurs. There could be some negative impacts on labour productivity, for example, due to the dilution of available capital across a greater number of workers. On the other

hand, population growth could enable economies of scale (a reduction in the average cost of production) for goods and services produced and consumed domestically. (Conversely, there could also be diseconomies of scale in some cases.)

An additional important consideration for the productivity impacts is the human capital embodied in new additions to the population. For example, in the case of natural increase, the educational attainment levels of Australians have so far tended to increase with each new generation — likely to be a source of growth in productivity. In the case of immigration, the current policy focus on skilled migrants, if successful, may be attracting people who are more productive than the average Australian.

This is by no means an exhaustive list of the likely participation and productivity impacts, but it illustrates the complexity of assessing the net income effects of population growth.

Furthermore, an analysis of the productivity and participation impacts does not capture the full impacts on GDP and GNI per head of the population, and is particularly deficient in measuring broader impacts on community wellbeing. To a large extent, the impacts of population growth depend on the underlying policy settings and on whether the impacts are within or outside the scope of markets. Various existing economic 'distortions' could determine whether Australians are better or worse off as a result of population growth.

Population growth, policy distortions and 'spillovers'

There are several policy or economic features that could limit the economic benefits or even lead to net negative impacts from population growth:

- government policies that protect or hinder particular industries can lead to inefficient infrastructure decisions, or distort the prices paid by consumers for particular goods or services (thus drawing resources away from their most efficient use)
- inadequate 'pricing' of natural resources and infrastructure, resulting in excessive pollution, environmental degradation, congestion or loss of amenity.

While population growth does not create these 'distortions' (which are best addressed directly, where feasible), it can exacerbate existing problems where they are present. Some of these impacts will reduce productivity with direct repercussions for measured economic growth. Others will not affect economic growth, but would nonetheless detract from community wellbeing.

Population growth can also generate a range of social and cultural impacts, both positive (such as the increased cultural diversity flowing from migration) and negative (such as reduced social cohesion). As before, some of these impacts may indirectly affect productivity and economic growth. All will affect community wellbeing.

Distributional considerations

The distribution of the impacts of population growth (and, in particular, of growth through migration) is another key consideration. In assessing the impacts of immigration, it is important to separate the impacts on the new additions to the population from those applying to the existing population (the 'incumbents'). It is the impacts on incumbents that are most relevant for government policy.

Immigration can create both winners and losers among the incumbent population. Generally, it tends to reduce the wages of those existing residents whose occupations are comparable to (and, hence in competition with) those of the newcomers, but increase the incomes of other incumbents. Thus, for example, an influx of immigrant IT workers would increase the supply of people in that occupation and exert downward pressure on the wages of local IT professionals. However, the productivity (and wages) of workers relying on IT support may increase, because there would be more of it (and at a lower price). The owners of capital equipment and land also tend to benefit from population growth because of increased demand for them.

The distribution of the impacts will also be influenced by whether migrants consume more in government services than they pay in taxes over their lifetimes, and by the way in which the patterns of government spending change as a result of population growth. Thus, for example, if immigrants are net 'contributors' in government revenue terms, they would increase *aggregate* incumbent income. (However, the income of *individual* incumbents may still rise or fall depending on how the government spending is distributed.) Also, while new migrants may be net recipients of government revenue or services, their children may be net contributors. Thus, a longer perspective may be needed.

Migrants are both consumers and suppliers of goods and services, and there would be impacts on the prices of some goods and services.[2] There may be upward pressures on some prices (due to diseconomies of scale) or downward pressures

2 This applies more to goods and services that are not traded internationally, and thus do not have a 'world' price.

(from economies of scale). Depending on the outcome and individual consumption preferences, some existing members of the population may win or lose.

To add to the complexity, various positive and negative impacts can apply to any one individual. For example, some may suffer a decline in their wages, but benefit from increases in the income from, and price of, some of the assets they own (such as shares and investment properties).

In 2006, the Commission modelled the economic impacts of a hypothetical 50 per cent increase in the size of the skilled migration program (subsequently largely realised). The projections indicated that average income per head of the population would increase modestly, though with most of the benefits of migration accruing to the migrants. For the existing population, migration resulted in a slight reduction in average income (box 8.3). The estimates did not account for any 'spillover' effects on economic growth or quality of life.

Box 8.3 **The Commission's study on the 'Economic impacts of migration and population growth'**

In 2006, as part of a study requested by the Australian Government, the Commission conducted a modelling exercise to assess the economic impacts of a hypothetical 50 per cent increase in Australia's skilled immigrant intake. The model used a simplification of the features of the economy and the adjustment process and did not quantify the impacts on environmental, urban and social amenity. Modelling yielded the following results:

- By 2024-2025, real gross domestic product was projected to be around 4 per cent higher than otherwise.
- Annual average income per head of the population was projected to be $383 higher. Most of this increase derived from increased labour force participation. (Other factors, including declining labour productivity , were projected to reduce incomes.)
- The gains in income from increased migration were not evenly distributed.
  - Most of the gains accrued to the migrants themselves, with the average incomes of incumbents declining slightly.
  - For the incumbent population, average real wages declined by $334, but income from other sources rose, including increased returns to capital and increased government transfers due to higher indirect tax revenue (by $154 and $103 per annum respectively).

Source: PC (2006).

Summing up

This brief discussion illustrates the difficulties in making generalisations about the implications of population growth and migration for the incomes and wellbeing of Australians. It touches on the potentially diverse and far-reaching effects, many of which can counteract each other and depend on the characteristics of the population growth and the context within which the growth occurs. Some of the potential negative impacts of population growth are magnifications of existing problems. While it is possible to identify many of the possible effects, ascertaining their magnitude requires detailed empirical investigation.

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