

# Population projections

Few issues are as important for Australia as the changes to our population that will occur over the next century. Population growth and size, composition, distribution, skill level and age structure are key factors contributing to the economic, social, and environmental well-being of this country.

Australia has already entered a unique period in its history during which it will go from having a young and growing population to one that is older and growing much more slowly, due primarily to below replacement fertility rate and increasing life expectancy. The magnitude of these changes is well illustrated by the likelihood that, in the 2040s, for the first time ever, more Australians are likely to die than are born.

## Factors involved in population change

Australia's demographic future depends on the following key factors:

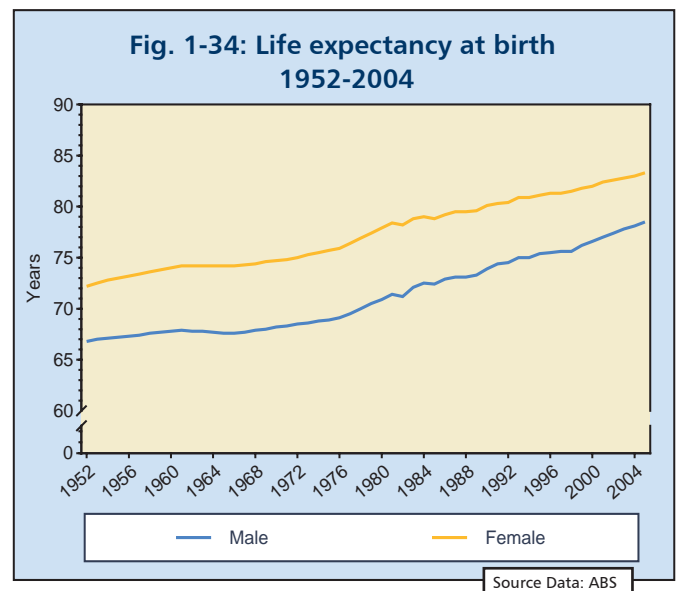
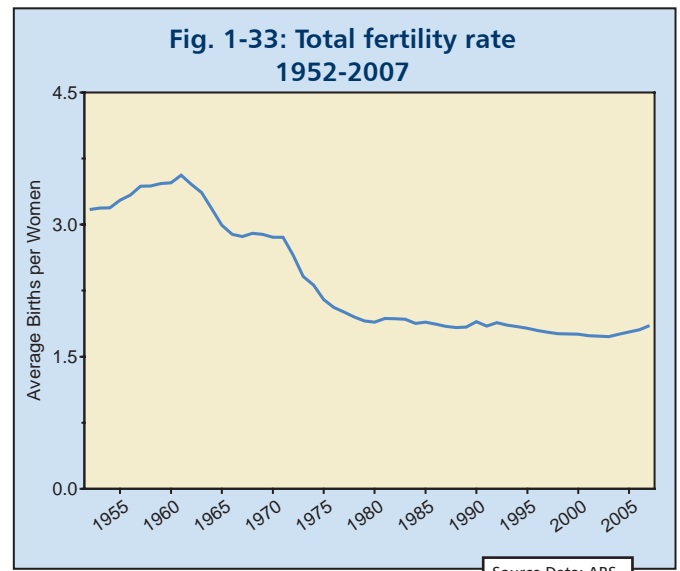
- fertility;
- life expectancy; and
- net overseas migration (NOM).

Change in the size of the population is the result of natural increase (births minus deaths) and NOM (permanent and long-term arrivals minus permanent and long-term departures, adjusted for changes in travel intentions).

## Fertility

Australia's total fertility rate (TFR), the average number of children a woman would bear over her lifetime, was 3.6 children per woman in 1961. The rate fell strongly in the first half of the 1960s and then again in the first half of the 1970s to reach 1.9 children per woman by 1979. It remained almost constant throughout the 1980s. From 1990, Australia's TFR gradually declined from 1.90 to reach 1.73 children per woman in 2002-03 (see Figure 1-33), which is the lowest on record. In 2004-05, fertility increased to 1.78. Preliminary estimates suggest that it has increased further to 1.85 children per woman in 2006-07.

This general downward trend has been replicated in almost every developed country, as well as in many developing nations. In fact, Australia's TFR is higher than most other developed nations. For example, Italy, Spain, Japan, Austria, Greece, and Germany, have TFRs between 1.3 and 1.4 while the UK, Sweden, the Netherlands, Belgium and Canada have TFRs between 1.6 and 1.7. The TFRs of both Spain and Italy declined dramatically over a relatively short period of time ie. for Spain, from 2.1 in 1980 to 1.2 in 1995 (a 43 per cent fall over 15 years) and, for Italy, from 1.7 in 1980 to 1.2 in 1994 (a 30 per cent fall over 15 years). In contrast, Australia's TFR declined from 1.9 in



1980 to 1.8 in 1995 (a 5.0 per cent fall over 15 years).

While Australia's TFR may fall further over the next ten years, there are indications that our TFR may be stabilising at around current levels. In recognition of the uncertainty about the future of Australia's fertility rate, the ABS has constructed projections to 2101 based on average total fertility rates of 1.9, 1.7 and 1.5 children per woman from 2018.

## Life expectancy

Life expectancy in Australia rose during the 1950s, but levelled out in the 1960s. At that time, analysts considered that we had come close to the limits of the human life span. Since the 1960s, however, life expectancy in Australia, and in other countries, has

Since 1981 life expectancy at birth has increased by 7.1 years for males and 4.9 years for females, reaching 78.5 years for males and 83.3 for females in 2003-2005.

Internationally in 2006, Australia's life expectancy at birth for males ranks amongst the highest with Iceland, Hong Kong (SAR of China), Japan, Macao (SAR of China), Sweden, Switzerland and Israel.

Australia's life expectancy for females is similar to Spain, Switzerland, France, Italy and Iceland. It falls behind Japan and Hong Kong (SAR of China).

For the purpose of population projections, the ABS has constructed projections to 2101 based on life expectancy for males increasing to between 84.9 and 92.7 years for males, and to between 88.0 and 95.1 years for females by 2050-51.

### Net overseas migration (NOM)

Over the last 25 years, the contribution of NOM to population growth has averaged around 39 per cent per year but this has fluctuated significantly from a low of 17.8 per cent in 1992-93 to a high of 56.2 per cent in 2006-07.

NOM is subject to considerable fluctuations from year to year. The low points of in-migration and the high points of emigration have in the past tended to coincide with economic downturns in Australia, but the high points of in-migration, while generally occurring in good economic times, are less directly associated with the economic cycle.

For its projections, the ABS has used three assumptions: NOM rises to 140 000 (high assumption) by 2007-08 and maintains that level, is 110 000 (medium assumption) per year over the projection period and reduces to 80 000 (low assumption) persons per year by 2007-08 and maintains that level.

### Population prospects for Australia

The ABS population projections span the period from June 2004 to June 2101 for Australia.

These projections are not intended as predictions or forecasts, but serve to illustrate the growth and change in the population which would occur if certain assumptions about future levels of fertility, mortality and NOM were to prevail over 2004-2101. A summary of the ABS assumptions and projections is provided in table 1-35.

Australia's estimated resident population (ERP) at June 2004 of 20.1 million is projected to grow to between 24.9 million and 33.4 million in 2051, and to between 22.4 million and 43.5 million in 2101. Growth will be highest

under Series A and lowest under Series C (see Fig.1-35).

Under the medium assumptions (Series B), Australia's population would grow through to 2101 but at an increasingly slower rate.

Throughout the 1990s and early 2000s, Australia's annual population growth rate has been in excess of 1 per cent. This is due to natural increase, or an excess of births over deaths, as well as NOM. In 2006-07, there were 272 900 births and 134 800 deaths in Australia, which is a natural increase of 138 100 people.

**Fig. 1-35: Main projection series, Australia**

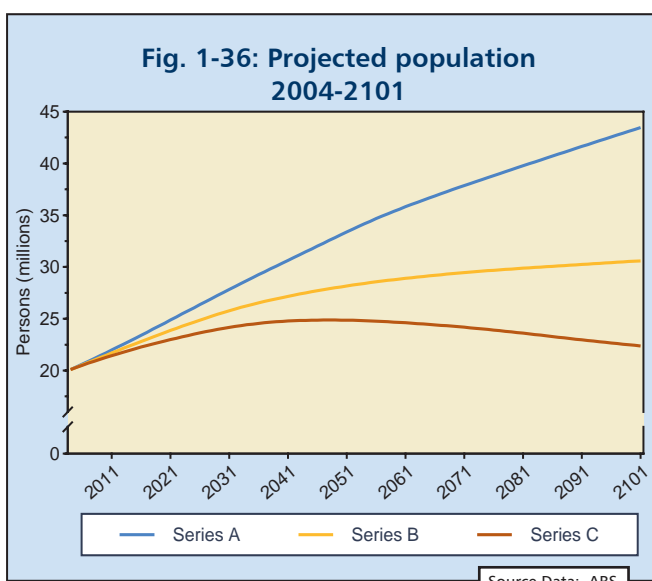
Assumptions	Population as at 30 June					
	Total Fertility Rate (a)	Net Overseas Migration (b)	Life expectancy at birth (years) (c)		2051	2101
			women	Persons	Males	Females
Series A	1.9	140,000	92.7	95.1	33.4	43.5
Series B	1.7	110,000	84.9	88.0	28.2	30.6
Series C	1.5	80,000	84.9	88.0	24.9	22.4

(a) From 2018 (b) From 2007-08 for Series A and C From 2004-05 for Series B (c) From 2050-51

Source Data: ABS

Projections indicate that deaths would exceed births in the future, leading to a state of natural decrease under Series B and Series C by 2044 and 2034. Therefore, while growth would continue at around its current rate for the next 5-15 years (except under Series C), it would slow throughout the remainder of the projection period, as NOM increasingly becomes the main source of growth. Under Series C growth would eventually become negative some time between 2051 and 2061, as NOM would not fully offset natural decrease.

**Fig. 1-36: Projected population 2004-2101**



Source Data: ABS

## International comparisons

According to the United Nations' population projections, Europe and Japan will experience negative population growth between 2005 and 2050, with the PRC experiencing low positive growth until around 2030 and negative growth thereafter. The USA and the UK, like Australia, would continue to show positive, but increasingly slow growth, through to 2050 at least.

## The population debate

There are a number of groups in Australia who advocate higher levels of NOM to ensure that the population will grow faster through to mid-century and beyond. These groups argue that increasing the number of migrants will help slow the rate of ageing of the population, stimulate the economy and help develop the full potential of the country. On the other hand, other groups argue that increasing the number of people living in Australia through immigration places further pressures on Australia's diverse and sometimes fragile environment and on its natural resources. Both groups have called for the development of optimum population targets for Australia.

It is important to realise that the range of realistic options for future population levels available to Australia is restricted. This is because the policy levers available to governments to influence population size and distribution are limited, particularly in the case of a liberal democracy such as Australia where many of the kinds of measures generally associated with population policies in less democratic countries (eg. control of internal mobility and compulsory birth control programs) would not be acceptable.

Difficulties faced in influencing Australia's population size through immigration include the need to uphold Australia's international humanitarian obligations, the need to allow Australians to reunite with close family, the importance of skilled migration for meeting skill demands, the increasing global competition for skilled people and the limited influence of government on emigration and on the entry of New Zealanders.

Population targets that have been suggested for Australia have ranged from as low as 6 million to as high as 50 million or even more. The ABS says that such targets are impossible to reach in the foreseeable future, given current levels of fertility and historic levels of migration.

Even if fertility was to fall to one baby per woman, and NOM was set at zero, the population would be 16 million in 2051, although it would reach 6 million by 2101. In the more likely event that fertility and mortality remain around the levels specified under the medium projection series (Series B), reaching a population target as low as 6 million by 2051 would require negative net migration of around

-245 000 per year. To obtain a population of 50 million by 2051 with fertility at 1.7 children per woman, migration would need to be 470 000 per year. Alternatively, with migration at 110 000 per year, fertility would need to jump to about 3.7 children per woman.

## Prospects for other dimensions of population

Fertility, life expectancy and NOM have implications for other dimensions of population, including:

1. the workforce's potential growth rate and size;
2. the population age structure; and
3. population distribution.

### 1. Change in the potential workforce's growth rate and size

The potential workforce is the number of people in the population of workforce age (usually defined as 15-64 year olds). The actual workforce will depend on the proportion of 15-64 years olds that seek to actively participate in the workforce. As population growth slows, growth in the potential workforce is also projected to slow considerably. Potential workforce growth peaked in 1999 and is projected to steadily decline. In recent years, Australia's potential labour force has been growing by about 170 000 people each year. However, for the entire decade 2021-30, the potential labour force could increase in size by just over 400 000 people in total under the ABS series B projection.

The population aged 15-64 years numbered 13.5 million people and made up 67.2 per cent of Australia's population at June 2004. Despite quite different outcomes in terms of the population size of those aged 15-64 years under the three different ABS series (see Fig. 1-37), this age group follows the same pattern for all series in terms of the proportion of the total population. The proportion will increase slightly from 67 per cent at June 2004 for all three series before declining to 57 to 59 per cent by 2051 and 55 to 58 per cent by 2101.

### 2. Change in the population age structure

The ageing of our population will continue. This is the inevitable result of fertility remaining at low levels over a long period and increasing life expectancy. As population growth slows, the population is projected to age progressively with the median age of 36.4 years in 2004 increasing to about 41 by 2021 and to about 45 years by 2051.

By 2051, around 26 per cent of Australia's population is projected to be aged 65 years or over, compared with 13 per cent currently. By 2101, this proportion will be around 27 per cent. The highest annual rate of growth for this age group will occur around 2012, when the peak of the baby-boom generation reaches retirement age. Those aged 85

years and over currently make up 1.5 per cent of the total population, but will grow to around 6 per cent by 2051 and to around 7 per cent by 2101.

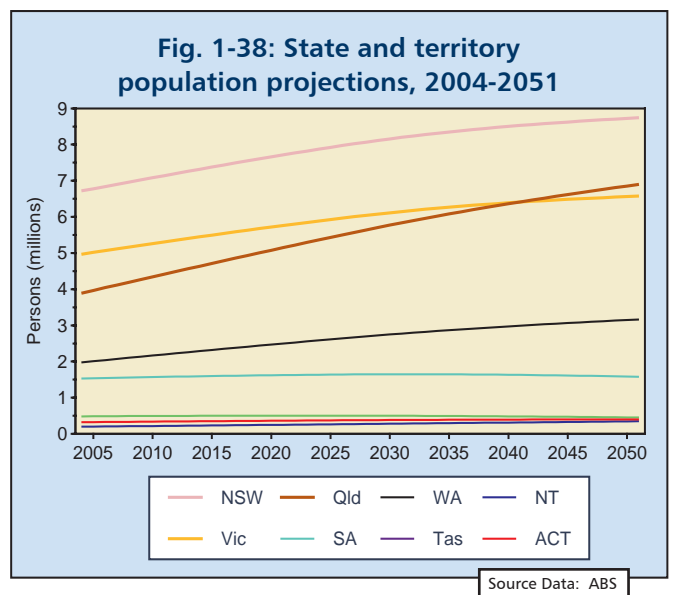
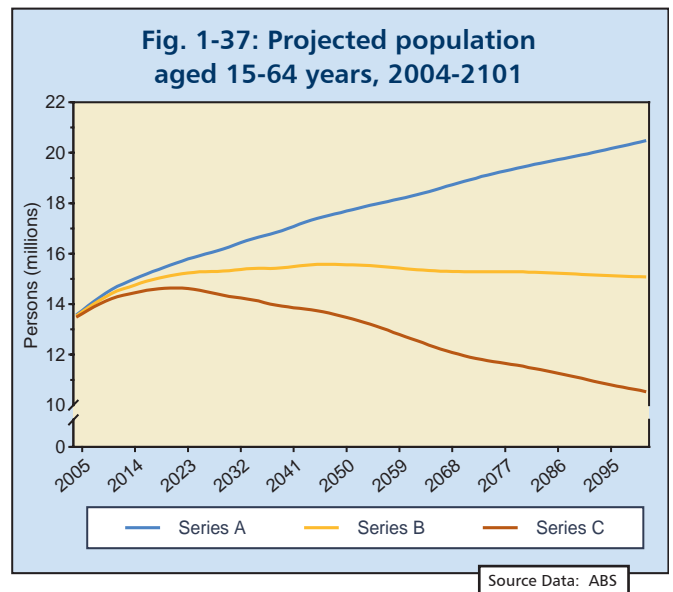
Extensive research has concluded that immigration beyond current levels would have a diminishing impact on retarding the ageing of the population. This reflects ageing being a gradual process and that most migrants who enter Australia are already adults and would themselves be part of the aged population in 30 to 40 years time. Massive levels of immigration would be needed to have any significant impact on the proportion of the population that is aged. Such levels would result in a very large population in future years. Changes in the fertility rate have a far greater impact on the population age structure than changes in migration levels.

### 3. Population distribution

Population is not just about overall size and age structure. Where people live is just as important to the economic, social and environmental future of Australia. Over 75 per cent of Australia's population currently lives in three states: New South Wales (33 per cent); Victoria (25 per cent); and Queensland (20 per cent). The remaining live in Western Australia (10 per cent); South Australia (8 per cent); Tasmania (2 per cent); the ACT (2 per cent); and the Northern Territory (1 per cent). The ABS notes that interstate migration is probably the most difficult component to measure in Australia's population estimation process. The movement of people between the states and territories of Australia is unrestricted and depends on many factors such as varying economic opportunities, overseas immigration and settlement patterns, and lifestyle choices. As fluctuations in these factors are difficult to predict, the trends and levels of past net interstate migration are used by the ABS for their projections. Series B projects population increase over the next 50 years in all states and territories, except Tasmania. Between 2004 and 2051, the population of the Northern Territory would increase by 75.2 per cent, Queensland by 77.4 per cent and Western Australia by 60.0 per cent, well above the growth projected for Australia as a whole (40.0 per cent). The distribution of Australia's population is therefore projected to be noticeably different in 50 years' time.

Under Series B, New South Wales is projected to remain the most populous state in Australia, while Victoria would be replaced by Queensland as the second most populous state. Queensland, Western Australia and the Northern Territory would increase their share of Australia's population, while the remaining states' and territories' shares would decline under this series.

Under Series B, all of the capital cities are projected to experience larger percentage growth than the respective balance of their states or territories, resulting in the further concentration of Australia's population within the capital cities. Australia is already highly urbanised. At June 2004, 63.7 per cent of Australians lived in capital cities, but by 2051, this proportion is projected to increase to 66 per



cent. Sydney and Melbourne would remain the two most populous cities in Australia at 5.6 million and 5.0 million respectively by 2051. In this series the population of Darwin would exceed that of Hobart from 2048.

Brisbane is our fastest growing city, and other cities, such as Perth and Melbourne, are growing faster than Sydney. Within the capital cities, the inner areas have begun to experience population growth after years of decline. There is also continued growth in many regional centres including Maitland, Kempsey, Albury, Ballarat, Bendigo, Mansfield, Townsville, Toowoomba, Ipswich, and Busselton. In contrast, population loss in rural Australia has been occurring for some time, largely as a result of internal migration. Fig. 1-38 illustrates Australia's state and territory population projections (under Series B) up to 2051.