Introduction

The Australian Bureau of Statistics (ABS) recently finalised population estimates for Victoria and Australia. This revision was in response to a change in methodology following the 2011 Census. The revision affects population growth amounts and growth rates over the most recent census period (2006 to 2011), and as far back as 1992.

This bulletin summarises the changes in Victoria’s and Australia’s populations as presented in the revised estimates, as well as some longer term trends.

Recasting the population estimates

The ABS bases its annual population estimates on data from the Census of Population and Housing held every five years. Each census count is adjusted for factors such as overseas visitors temporarily in Australia, Australians temporarily overseas, and the estimated number of people missed by the census collection process (the ‘undercount’). An improved methodology in 2011 - based for the first time on automated data linking - showed that the proportion of the population undercounted was lower than previously assumed and that previous populations had been overestimated using the ‘old’ methodology.

To take account of this new information, and to produce a consistent set of time-series population data, the ABS has recast population estimates back to 1992 - in effect, applying the ‘new’ methodology to previous years. The largest adjustment was made to the most recent Census year (2006), with smaller adjustments to 2001 and 1996, giving a smooth transition to 1991, which remains the last year still estimated under the ‘old’ method.

The results of this recasting for Victoria are shown in Figure 1. The impact of the revision is clearly shown by the similarity between the original 2011 estimate and the recast 2012 estimate: Victoria’s population reaches 5.62 million one year later than originally estimated.

While the population’s levels and growth rates have been revised, the ABS has taken care to preserve the internal consistency of the population structure. The recasting maintains the proportion of the population in each age group. The process has incorporated some new data (namely birth registrations which had been miscoded), but in general has not changed the components of population growth (natural increase and migration).
Highlights of national population change (2001-11)

Between June 2001 and June 2011 Australia’s estimated resident population (ERP) increased by 3.1 million people to 22.3 million – a 16 per cent increase, or 1.5 per cent per annum.

Victoria’s ERP increased to 5.54 million by 2011, growing by almost 775,000 over the previous 10 years, matching Australia’s average growth rate of 1.5 per cent per annum.

Only Queensland’s population grew by more than Victoria’s, adding 905,000 people to reach 4.48 million at 2011. Western Australia grew the fastest, at an average rate of 2.3 per cent per annum (growing 447,000 over the 10 years to reach 2.35 million).

New South Wales remained the most populous state in 2011, with 7.22 million people. It grew at an average rate of 1.0 per cent per annum, adding 688,000 people over 10 years.

Both South Australia and Tasmania grew by less than 1 per cent per annum (adding 136,000 at 0.9 per cent per annum, and 38,000 at 0.8 per cent per annum, respectively). The two territories grew almost as fast as Victoria and Australia, at 1.4 per cent per annum each. The Northern Territory added 30,000 people over 10 years, while the Australian Capital Territory added 46,000 people.

Long-term growth – Victoria and Australia

Population growth can vary due to government decisions and changing behaviour in our population, or due to events outside our control. Some factors are national; and some have more impact on Victoria than on the rest of Australia. Figure 2 below shows this variation in annual population growth over more than 200 years.

The 1850s Gold Rush was a one-off event which caused a spike in Victoria’s population growth, reflected at the national level. The Long Boom through the 1950s and 1960s saw steady increases at state and national level, due to migration policy and the baby boom. While Victoria slowed more than much of the nation in the 1990s recession, in the most recent decade the state has matched Australia in setting records for annual population growth.

Figure 2. Long-term population changes, Australia and Victoria

Source: ABS, Australian Historical Population Statistics, 2008 (3015.0); Australian Demographic Statistics (3101.0).

Figure 3. Annual percentage change in population, Australia and Victoria

Source: ABS, Australian Demographic Statistics (3101.0).
Growth rates over 40 years – Victoria and Australia

Rates of population growth in Victoria were lower than the national rate for most of the 30 years to 2001. In particular Western Australia’s and Queensland’s rates were much stronger: with warmer climates and more promising economies, they attracted migrants from within Australia and overseas. In this century Victoria has often grown by larger amounts than these two states, despite slower rates, due to its larger population base.

Recent increases in growth rates have been driven by a ‘mini baby boom’ and by sharp increases in net overseas migration. Victoria accounts for roughly one quarter of the Australian population, but in recent times has attracted more than its share of migrants, boosted strongly by overseas student migration.

The population increase peaked in 2008-09 at 2.1 per cent per annum for Australia and 2.2 per cent per annum for Victoria. Rates decreased to 1.4 per cent in 2011.

Components of growth

Over the past four decades, the share of population growth attributable to natural increase has declined (see Figure 4). This is despite growth in actual numbers of natural increase, as the amount of growth due to overseas migration has increased more (see Figure 5).

The increase in a state’s population includes another element: interstate migration. In Figure 5 Victoria’s loss of population to other states until around 2000 is clear. Since then net interstate migration to Victoria has oscillated either side of zero, making little contribution to overall population change.

Figure 4.
Components of population change in Australia

Source: ABS, Australian Demographic Statistics (3101.0).

Figure 5.
Components of population change in Victoria

Source: ABS, Australian Demographic Statistics (3101.0).
Interstate flows

Nonetheless, movements of population between states are of significant magnitude. More than 60,000 people move from Victoria every year and a similar number move to Victoria. The two maps below summarise the moves to and from Victoria for two decades.

In aggregate, it can be seen that Victoria has turned around over these two decades, from a large net loss to interstate, to a much smaller net loss in the most recent decade. More interesting however, is the distribution of this change with the other states.

The largest exchanges of population have been with NSW, with nearly a quarter of a million moving in each direction over each period. The number of departures from Victoria has decreased over the last 10 years, turning the small net loss into a gain. The departures to Queensland still outnumber the arrivals, but again, the number of Victorians leaving has decreased over the last decade, so the net loss of population to Queensland has halved.

With the other states, the movements are so well balanced between ins and outs that a small difference in either is enough to change the direction of the net result.

Figure 6. Interstate migration flows, 1992-2012
Source: ABS, Australian Demographic Statistics (3101.0)
Note: the data has not been revised.
Population age structures

Over the past 40 years, four main patterns have been evident in the age structure of the Victorian population: the gradual increase in the aged population; the ageing of the large ‘baby boomer’ cohort; the recent delay and then ‘catch-up’ in births; and; the impact of recent overseas migration on young adult age groups, in particular males.

The upper end of the population pyramid diagram (see Figure 7) shows the results of an increasing population and of increasing life expectancies. The age groups from 65 years onwards have experienced this gradual change, and so have increased in size steadily over the 40-year period these charts represent.

Between 1971 and 2009, the life expectancy at birth has increased by around 10 years, from 68.2 to 79.7 for males and from 74.8 to 84.2 for females.

The ‘baby boomer’ cohort, in contrast, represents a major step change in cohort size as they pass through the age structure. In 1971 they filled out the large cohorts at the younger end of the scale (up to 24). In 1991 they made up the very noticeable increase (since 1971) in the age groups from 20 to 44. By 2011, this cohort is responsible for the current ‘middle-aged bulge’ (45 to 64) seen in the charts. In another 20 years’ time, this group will have moved further ‘up’ the pyramid as they continue to age, creating a significant increase in the number and proportion of the population aged 65 to 84 years.

The number of births in Victoria in 1971 remained a record high for 40 years. By 2011, the young adult population – and hence the pool of potential mothers – has grown sufficiently to offset the difference in fertility rates: 2.8 per 1,000 women in 1971 and 1.8 in 2011. Recent changes in fertility behaviour are also evident in these charts. Throughout the 1990s, a cohort of women delayed their child-bearing, for a number of economic and social reasons. These women have not, in general, had fewer children than their immediate predecessors; however they have chosen to have them later in life. The inevitable catch-up or ‘recuperation’ in fertility can be seen in the increase in numbers of children in the youngest age group in 2011.

Migration behaviour also has impacts on the age structure and the population pyramid, which are noticeable over a relatively short period of time. Overseas migrants to Australia tend to be in the younger adult age groups. In recent years much migration has been for study purposes, skewing this distribution further, toward the 20 to 29 age group. The impact can be seen in the population pyramid, with a sharp increase in the number of 20 to 29 year olds from 1991 to 2011. The impact is more marked for males than for females, the result of a sex imbalance in the international students and business (Long Stay) “457” visa populations.

Figure 7. Age distribution of the Victorian population, 1971, 1991 and 2011

Source: ABS, Australian Demographic Statistics (3101.0).
Victoria and other states

Australia’s population increased by 2.4 million people in the 20 years to 2011. The largest proportion of this growth (30 per cent) occurred in Queensland. New South Wales accounted for 26 per cent, Victoria 22 per cent, and Western Australia 15 per cent of the increase. The other states and the two territories contributed only 8 per cent of Australia’s population increase over this time – with half of that in South Australia.

There is notable variation in the shares of growth to Victoria and New South Wales, between the two decades covered by the recently published data. While Queensland saw only a slight decline in its share from 1991-2001 to 2001-2011 (31 per cent compared with 29 per cent), and Western Australia slightly increased its share from 14 per cent to 15 per cent, Victoria’s and New South Wales’ positions changed markedly over the two decades. From 1991 to 2001, New South Wales accounted for one third (33 per cent) of the nation’s growth, and Victoria for only one sixth (16 per cent). In the most recent decade, the share of growth in Victoria increased to 25 per cent, while that for New South Wales decreased to 22 per cent.

Figure 8.

Index of population growth, 1971 = 1, Australia and the states

Source: ABS, Australian Demographic Statistics (3101.0).

Figure 9.

Population growth, persons, 1992 to 2012, Australia and the states

Source: ABS, Australian Demographic Statistics (3101.0).
When using indexed growth (overall percentage growth per state/territory) as a measure, the relative positions of the states and territories are more stable over time (see index of growth in Figure 8). There are three clear bands of percentage change in the chart. At the top of the graph we see the fastest growing states – Queensland and Western Australia – plus the Northern Territory. At the other end of the scale are Tasmania and South Australia, growing much more slowly. Victoria sits in the middle with New South Wales and the Australian Capital Territory – all slightly below the percentage change for the whole of Australia.

These variations between states and over time are illustrated by the absolute changes in population over the two decades (in Figure 9) and the annual average growth rates over the two decades (in Figure 10). In the 1990s, Victoria, South Australia and Tasmania were recovering from a deep economic slump. Victoria saw net losses of up to 30,000 people to interstate in one year. In the second decade, Victoria’s growth rebounded strongly, to outpace all but the two fastest growing states.

Of the fastest growing states, Queensland slightly increased its growth rate, while the rise of the resources boom in Western Australia saw its rate climb steeply from the 1990s to the 2000s. New South Wales’ annual growth rate increased only marginally between the two decades. But while that rate was close to average in the first decade, it is well below in the second decade.

All other areas except for the Northern Territory also saw an increase in growth rate in the two decades, as did the overall Australian rate.

**Figure 10.**
Population growth, average annual rates, 1992 to 2012, Australia and the states
Source: ABS, Australian Demographic Statistics (3101.0).
International comparison

Australia’s population is growing at a rate faster than most comparable nations, but its absolute population increase makes a very small contribution to global population change. Owing to a relatively high fertility rate (higher than most developed or developing countries, similar to the United States of America, but lower than India or Indonesia) and strong international migration, Australia’s rate of growth is highest of the nations illustrated in Figure 12, except India.

Figure 11. Population growth, persons, Australia and selected countries, 2001 to 2011

Source: as listed in the World Bank database (http://data.worldbank.org/indicator/SP.POP.TOTL)

Figure 12. Population growth, average annual rates, Australia and selected countries, 2001 to 2011

Source: as listed in the World Bank database (http://data.worldbank.org/indicator/SP.POP.TOTL)