

Population growth in Australia

March 2015

Michael Krockenberger

About The Australia Institute

The Australia Institute is an independent public policy think tank based in Canberra. It is funded by donations from philanthropic trusts and individuals and commissioned research. Since its launch in 1994, the Institute has carried out highly influential research on a broad range of economic, social and environmental issues.

Our philosophy

As we begin the 21st century, new dilemmas confront our society and our planet. Unprecedented levels of consumption co-exist with extreme poverty. Through new technology we are more connected than we have ever been, yet civic engagement is declining. Environmental neglect continues despite heightened ecological awareness. A better balance is urgently needed.

The Australia Institute's directors, staff and supporters represent a broad range of views and priorities. What unites us is a belief that through a combination of research and creativity we can promote new solutions and ways of thinking.

Our purpose—'Research that matters'

The Institute aims to foster informed debate about our culture, our economy and our environment and bring greater accountability to the democratic process. Our goal is to gather, interpret and communicate evidence in order to both diagnose the problems we face and propose new solutions to tackle them.

The Institute is wholly independent and not affiliated with any other organisation. As an Approved Research Institute, donations to our Research Fund are tax deductible for the donor. Donations can be made via our website at <https://www.tai.org.au> or by calling the Institute on 02 6130 0530. Our secure and user-friendly website allows donors to make either one-off or regular monthly donations and we encourage everyone who can to donate in this way as it assists our research in the most significant manner.

Level 5, City Walk Centre

131 City Walk

Canberra City, ACT 2601

Tel +61 2 6130 0530

Email: mail@tai.org.au

Website: www.tai.org.au

Population Growth in Australia

Summary

Since the Sydney Olympics in the year 2000 the population of Australia has grown by 25 per cent. In fact, since the Sydney Olympics, Australia's population has grown more than the entire population of Sydney at that time.

While our political leaders vacillate between being for a 'big Australia' or a 'sustainable population', data shows that our population growth rate is unaffected by this rhetoric. Our population growth rate is affected to some extent by changing economic fortunes, our population has increased steadily since the second world war. Each year our population increases by around 400,000 – a new Canberra every year.

In the last decade our population growth has increased slightly above historic trends, largely due to migration. Indeed more immigrants came to Australia since 2000 than arrived between 1950 and 1980. Now is the golden age of immigration, as much as the 1950s and 1960s were.

Our population growth is forecast to continue at similar rates. Based on current trends, the ABS projects that our population will grow to around 40 million in 2061 and depending on migration policies, will grow to between 42 million and 70 million by 2101.

Almost all of these people will live in major cities. In 2060 both Melbourne and Sydney are forecast to have larger populations than all of Australia had in 1950. And in 2060 Perth and Brisbane together will have almost the same population as Australia had 100 years before, in 1960.

Australia has the fastest population growth in the OECD other than Israel and Luxembourg, which are very different cases and not good comparisons. Australia are very different cases considerably faster than that of Canada, the other great Commonwealth multicultural success story. Under reasonable assumptions of future population growth, Australia could have the same population as Canada by 2090 (about 50 million) and of Italy, a country currently two and a half times as populous as Australia, by 2100 (about 53 million).

Despite our rapid population growth being at historic rates and among the highest in the world, it is all too rarely discussed. Whether this rate of population growth is 'good' or 'bad' depends on your point of view. More importantly, however, it will depend on how well we plan for our future population. Australia needs serious debate around what our population policy should be and how to plan for our future population.

Introduction

Australia's population reached 23,700,000 on 5 January 2015, according to the Australian Bureau of Statistics (ABS) Population Clock. Since the Sydney Olympics in the year 2000, Australia's population has grown by more than the population of Sydney. In 2000 we had about 19 million people. Since then we added approximately 4.7 million, or about a quarter of our population at that time.¹

Despite this large population increase, there is little public debate about population in Australia. This is surprising as rates of population growth have increased since about the year 2000 and when asked, around half of all Australians think population is growing too fast and think we should have a national debate about population growth. Only one-third of Australians do not think a conversation about population is necessary.²

There has been a low-level policy debate for many decades about the virtues or otherwise of high population growth. This debate occasionally flares into wider public view, such as when prime ministers and other decision makers declare themselves proponents, or not, of a 'Big Australia'.

For example, Prime Minister Kevin Rudd declared he was a proponent of a 'big Australia' in October 2009. Prime Minister Julia Gillard then contradicted Rudd in June 2010 when she said she was in favour of "sustainable growth", not a big Australia. Labor frontbencher Tony Burke was the Minister for Population, then the Minister for Sustainable Population, a title that disappeared after the 2010 election. Trade Minister Craig Emerson clearly leaned back towards a 'big Australia' in October 2011 when he called for a boost in immigration. There has been virtual silence on this issue since then.³

The recently released 2015 Intergenerational Report does discuss population, though mainly in terms of an ageing population. Surprisingly, the report itself notes, 'Australia's population, although ageing, is neither aged nor ageing as fast as some other countries'.⁴ Indeed it has one of the youngest populations of all developed countries.⁵

While attention focuses on the aging population, wider population policy that influences the future demographic profile of Australia is rarely discussed. Population policy rarely varies much beyond minor adjustments to migration to suit the currently prevailing economic climate. When times are good more immigrants come, when not so good, less come. The future is considered a minor concern compared to present circumstances.

Nevertheless, a big Australia, or at least a bigger one, will happen of its own accord. Population growth continues more or less unchanged regardless of which party is in power or whether we have a Minister for Population, a Minister for Sustainable Population, or no population minister at all. As shown in Figure 1 below, our population has grown steadily since the Rudd 'big Australia' statement, increasing by 1.8 million (or over 8 per cent) in six years.

¹ Sydney's population in June 2000 was 4.09 million and in June 2013 was estimated at 4.76 million. Source: Australian Bureau of Statistics, Population Statistics 3235.1 and 3218.0

² The Australia Institute Survey February 2014. (n=1445)

³ <http://www.abc.net.au/news/2009-10-23/rudd-welcomes-big-australia/1113752>

<http://www.theaustralian.com.au/archive/politics/julia-gillards-speech-to-the-lowy-institute-on-labors-new-asylum-seeker-policy-for-australia/story-e6frgczf-1225888445622>

<http://www.abc.net.au/news/2010-04-03/tony-burke-made-first-population-minister/390256>

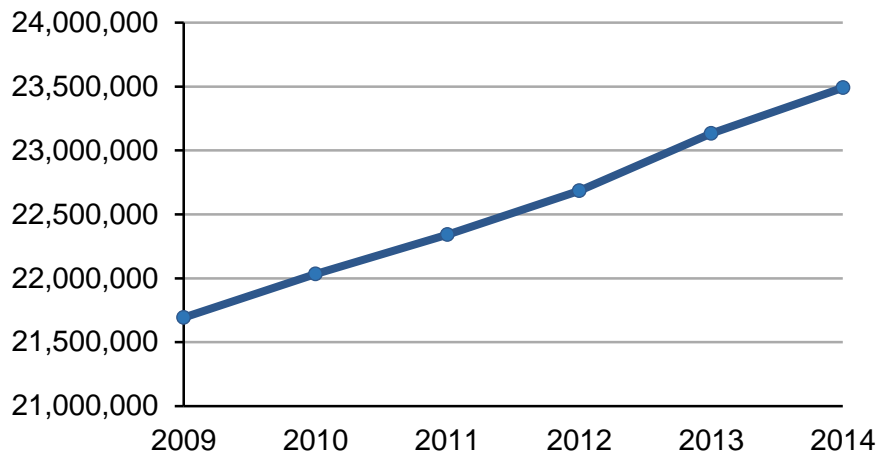
<http://www.abc.net.au/lateline/content/2010/s2939400.htm>

<http://www.theaustralian.com.au/national-affairs/immigration/big-australia-back-on-the-agenda/story-fn9hm1gu-1226154435021>

⁴ 2015 Intergenerational Report, p. 10.

⁵ Australia's median age in 2010 was 36.8, whereas Canada's was 39.7, France 40.0, Germany 44.3, Italy 43.3, Japan 44.9, New Zealand 36.6, UK 39.8 and USA 37.1. 2015 Intergenerational Report, p 9.

Figure 1: Population growth since the Rudd statement



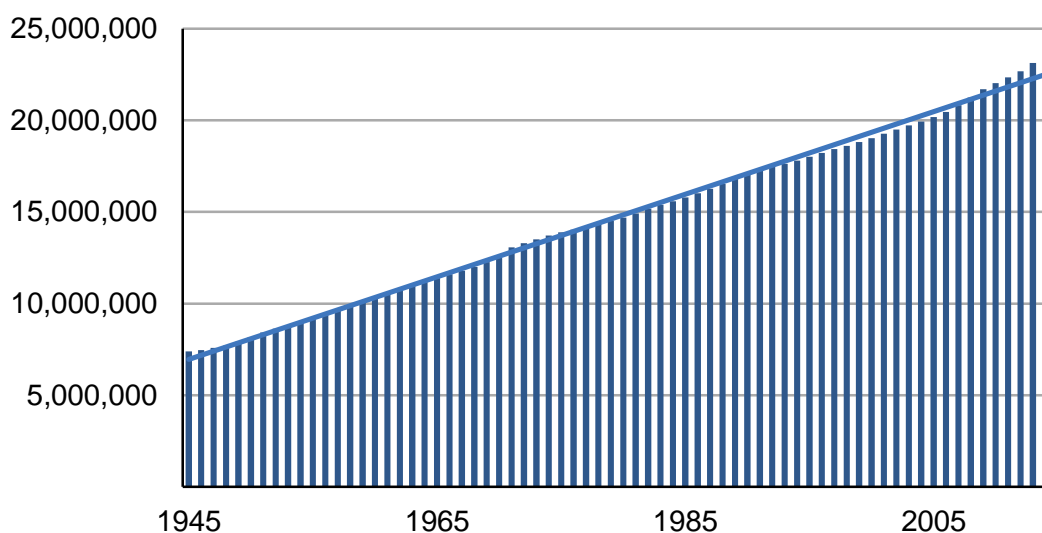
Data Sources: ABS 3105.0.65.001 and 3101.0 for 2012, 2013 and 2014.

Figure 1 shows that our population grows by about 400,000 per year, more than the population of Canberra, which was 357,220 at the 2011 census. Does Australia want another Canberra every year? How will Australia plan for another Canberra every year? At the moment we seem not to want to answer these questions. It seems we are content to let our post-war population growth go on without serious debate or planning.

Population – post WWII to the present

Australia's population has grown steadily and consistently since the Second World War, as shown in Figure 2 below:

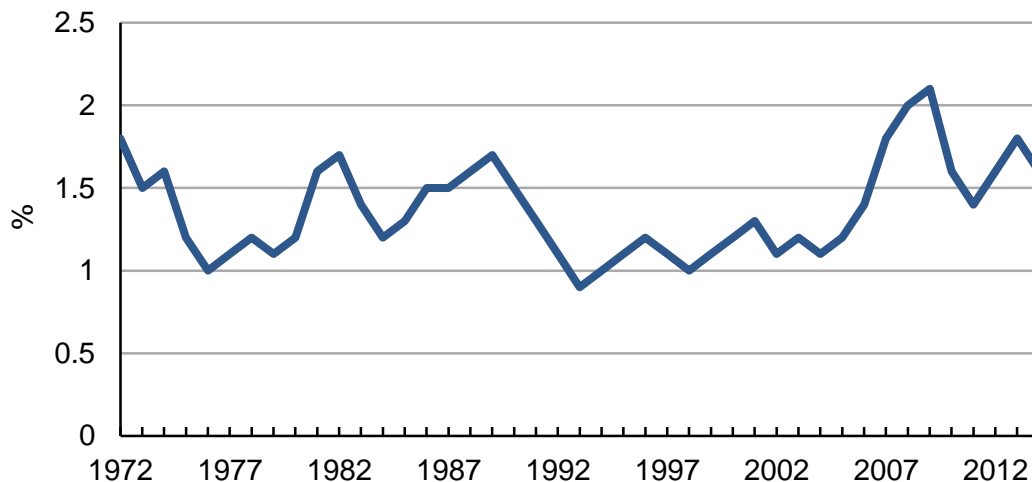
Figure 2: Australia's population from 1945 to 2014



Data Sources: 3105.0.65.001 Australian Historical Population Statistics, 2014 and 3101.0 for 2012, 2013 & 2014

While our population growth has been steady since the 1940s in absolute terms, Figure 2 shows that recent years have seen growth above trend. The population growth rate since 2006 has been higher than any time since 1990, as shown in Figure 3 below:

Figure 3: Australia's annual population growth rate from 1972 to 2014



Data Sources: 3105.0.65.001 Australian Historical Population Statistics, 2014 and 3101.0 for 2012, 2013 & 2014

Although at high levels now, the population growth rate was even higher in the 1950s and 1960s. This rate is affected primarily by fertility rates and migration.

Causes and magnitude of population increase

Population increase is caused by natural increase (the difference between births and deaths of the existing resident population) and net overseas migration (the difference between people immigrating and emigrating⁶). Currently there is on average one birth in Australia every one minute and 45 seconds, one death every three minutes and 32 seconds, and a net gain of one international migration every two minutes and 5 seconds, leading to an overall population increase of one person every one minute and 18 seconds.⁷

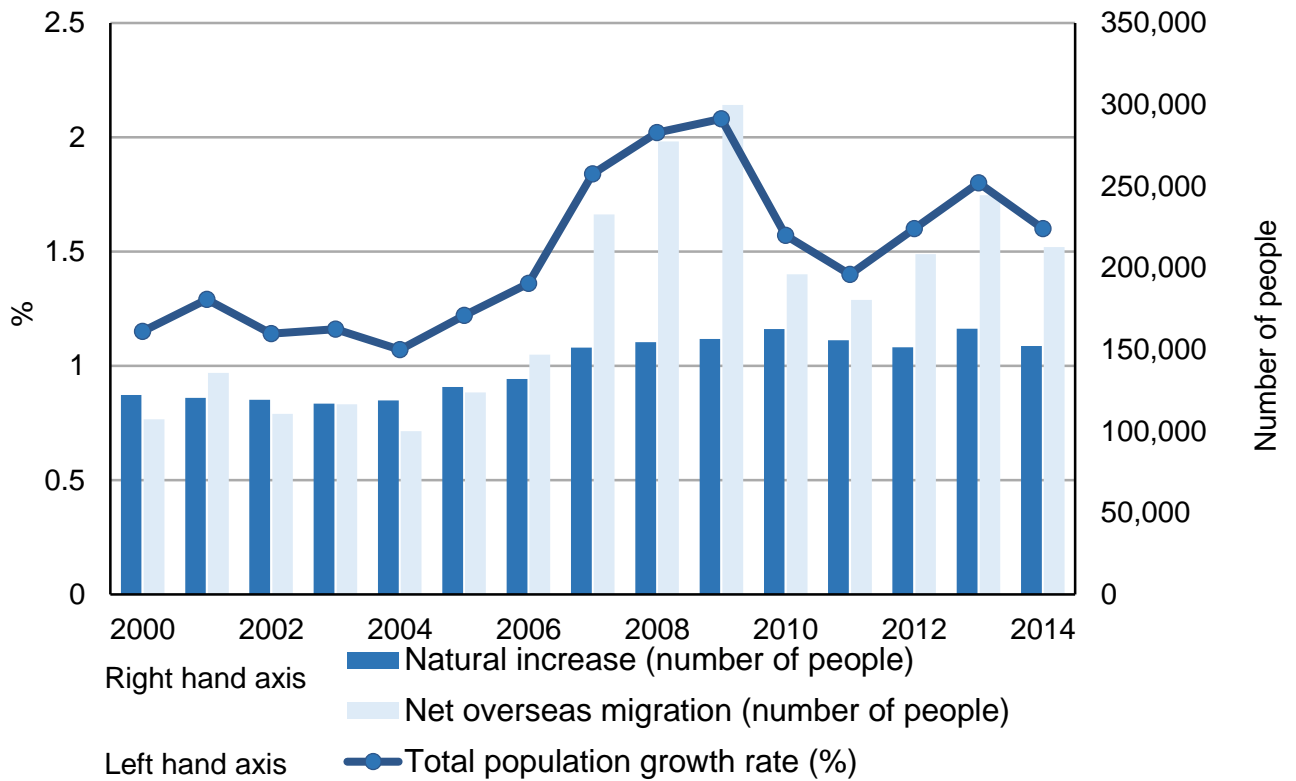
Although net overseas migration (NOM) varies more from year to year than natural increase does, it has consistently exceeded it since 2006. The increase in Australia's population growth rate, and therefore recent increases of population, is primarily due to increased NOM.

From the data in Figure 4 below, we see that around 60 per cent, or 2.74 million, of Australia's new residents since the year 2000 were migrants. Indeed more immigrants have come to Australia since 2000 than came between 1950 and 1980, a period when population increased by 2.57 million, as shown in Figure 5 below.

⁶ ABS defines a migrant as an international traveller who is in (or out) of Australia for 12 or more months over a 16-month period, other than diplomatic personnel and their families. Explanatory Note of ABS Australian Demographic Statistics, June 2014

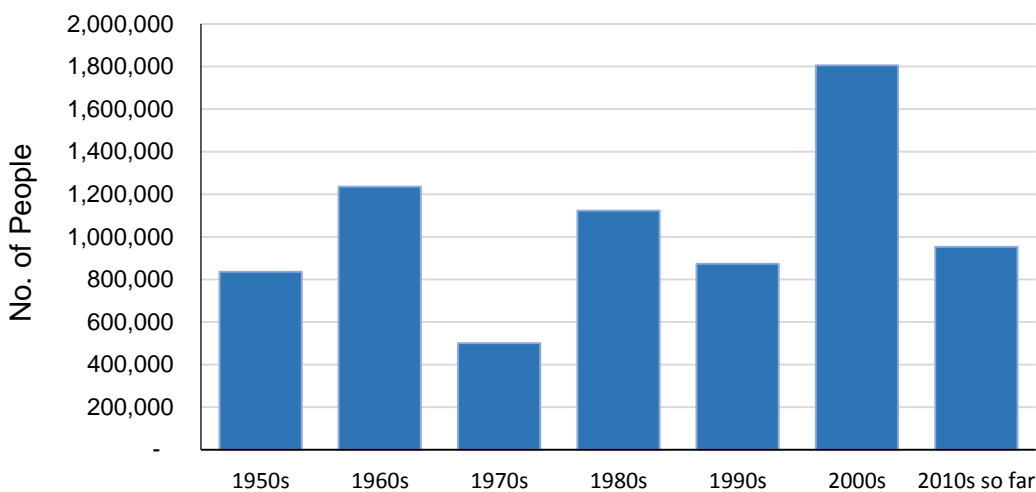
⁷ ABS Population Clock, 4 March 2014.

Figure 4: Net Overseas Migration, natural increase and population growth rate, 2000 to 2014



Data Sources: 3105.0.65.001 Australian Historical Population Statistics, 2014 and 3101.0 for 2012,2013 & 2014

Figure 5: Net overseas migration by decade



Data Sources: UN Population Division (POP/DB/WPP/Rev.2012/MIGR/F02) and ABS Australian Demographic Statistics 3101.0.

The NOM rate was higher between 2005 and 2010 than any five-year period since WWII, other than during the key period of immigration between 1965 and 1970. The rate for the current period, between 2010 and 2015, is likely to be almost as high. Nearly two-fifths (38 per cent) of all post-1950 immigrants have arrived since the year 2000 (Table 1). The current era is a golden age of immigration, as much as the 1950s and 1960s were.

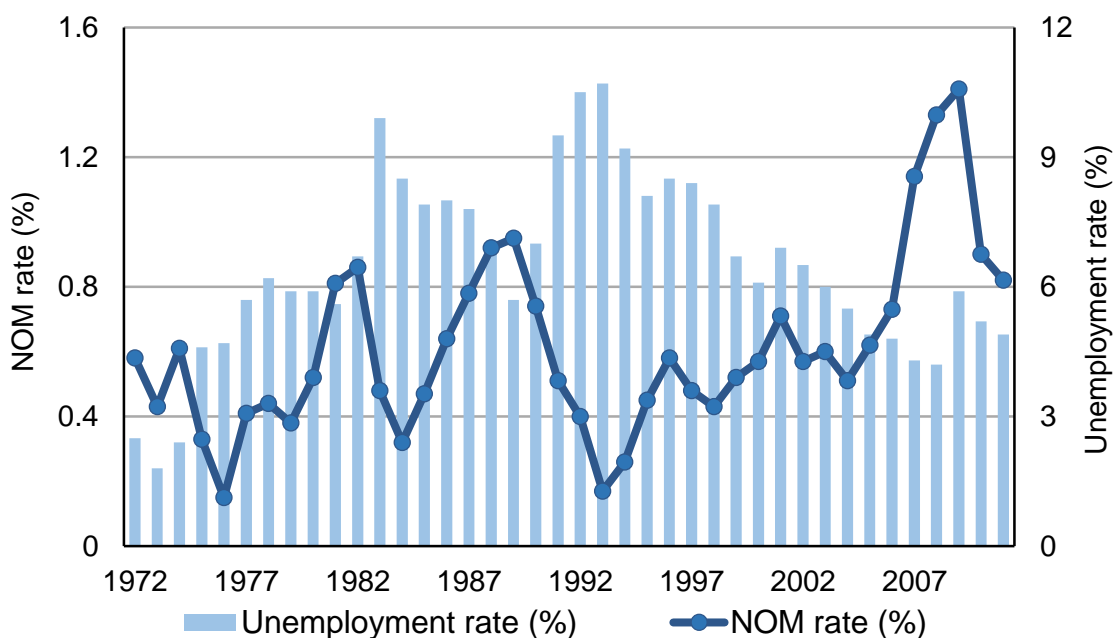
Table 1: Percentage of immigrants who have arrived in each decade since 1950

	1950's	1960's	1970's	1980's	1990's	2000's	2010's so far
% of NOM	11	17	7	15	12	25	13

Data sources: as above

The migration rate largely reflects the strength of the economy, particularly the unemployment rate. When unemployment is low, NOM tends to increase, and when unemployment is high NOM decreases. Figure 6 shows that in periods of high unemployment, such as in the 1970s, 1980s and 1990s, NOM tends to be lower. It is important to note however, that while periods of low (or high) unemployment are temporary, high NOM leads to a permanently higher population.

Figure 6: NOM rate and unemployment rate, 1972 to 2011



Data Sources: ABS 3105.0.65.001 Australian Historical Population Statistics, 2014, Table 1.8 and RBA Occasional Paper No. 8 Table 4.15 to 1997 and RBA H5 Labour Force from 1997

Future National Population Projections

While Australia's population growth rate since WWII has been steady, varying slightly with economic circumstances, the ABS produces population projections for Australia based on three scenarios. Interestingly, all scenarios project increases in population, as opposed to stabilisation or contraction, which were not considered realistic on current trends.

The assumptions behind the ABS's forecast scenarios are total fertility rate (TFR), life expectancy and NOM. Scenarios are called series A, B and C, with relevant assumptions listed in Table 2 below:

Table 2: Assumptions in TFR, NOM and life expectancy at birth used in the ABS population projections

	Total fertility rate (babies per woman)	Net overseas migration (persons)	Life expectancy at birth in 2061	
			Males	Females
Series A	2	280,000	92.1	93.6
Series B	1.8	240,000	85.2	88.3
Series C	1.6	200,000	85.2	88.3

For reference, the TFR in 2013 was 1.882.⁸ Life expectancy at birth in 2013 was 80.1 for a male and 84.3 for a female.⁹ The average NOM from 2008 to 2013 (the latest full year figure) is 235,457 per year.¹⁰

The population scenarios for these projections, shown in Figure 7, indicate that under a scenario of high population growth (Series A) our population would exceed 43 million people before 2061 and reach just over 70 million by the year 2101. The key drivers of this growth would be high fertility, high NOM – though not as high as in 2008 – and high life expectancy. In contrast, the slowest growth rate scenario, Series C, shows our population would be less than 43 million people in 2101.

⁸ Australian Bureau of Statistics, Births Australia 2013, 3301.0

⁹ Australian Bureau of Statistics, Deaths Australia 2013, 3302.0

¹⁰ Australian Bureau of Statistics, Australian Demographic Statistics 3101.0

Figure 7: ABS Australia population projections

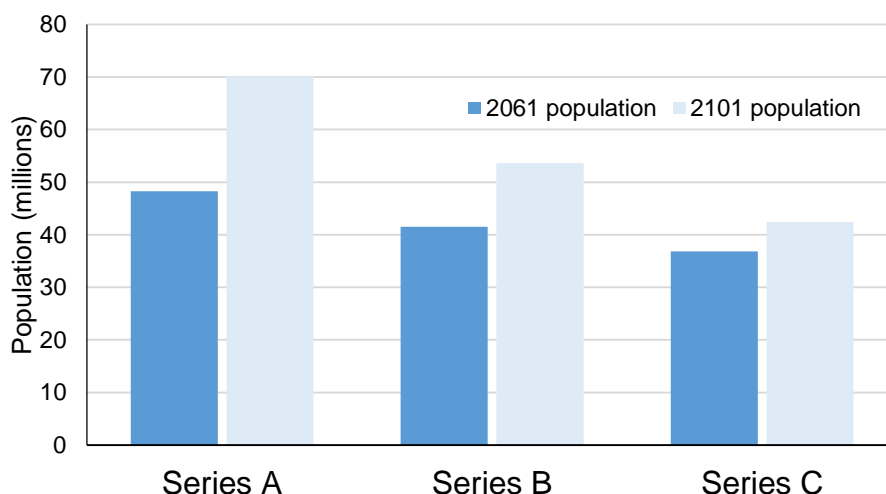


Figure 13. Projected population in Australia under three population growth rate scenarios. Data source: ABS Population Projections 3222.0

In Figure 7, Series B most closely reflects current trends in fertility rate, NOM and life expectancy. Under these assumptions, the ABS projects a population of over 41 million by the year 2061 and over 53 million by the year 2101.

The 2015 Intergenerational Report uses a different projection. It assumes fertility will remain at the 2013 rate of 1.9 births per woman, therefore higher than Series B, that life expectancy in 2050 will be 87.5 for males and 90.1 for females – between Series A (89.4/91.5) and Series B (84.4/87.7) – and that NOM will be 215,000 per year, lower than Series B¹¹. However, the population in 40 years (the period the Intergenerational Report examines) would be very similar to Series B (Intergenerational Report = 39.7 million, Series B = 39.4 million).

It is likely that Australia is going to have a population of somewhere in the range of 42 to 70 million by the end of the century, unless apocalyptic events intervene or a policy of zero net overseas migration is implemented. Various ABS projections show that changes to life expectancy and fertility do not make a large difference to these projections.¹² The factor that most affects population projections is net overseas migration. The choice Australia therefore faces is:

1. Cease being an immigrant nation, or;
2. Plan for a larger population and devote sufficient resources to prepare for the environmental, social and economic impacts of a larger population.

¹¹ 2015 Intergenerational Report, March 2015, Commonwealth of Australia. However, whereas ABS and previous Intergenerational Reports have used the 'period life expectancy' method, the 2015 Intergenerational Report switches to the 'cohort life expectancy' method. This assumes that advances in medicine and technology are likely to continually improve a person's life expectancy during his or her life. This assumption results in a far higher life expectancy in 2055 (95.1 for males and 96.6 for females). The figures in the text are all using the 'period life expectancy' method.

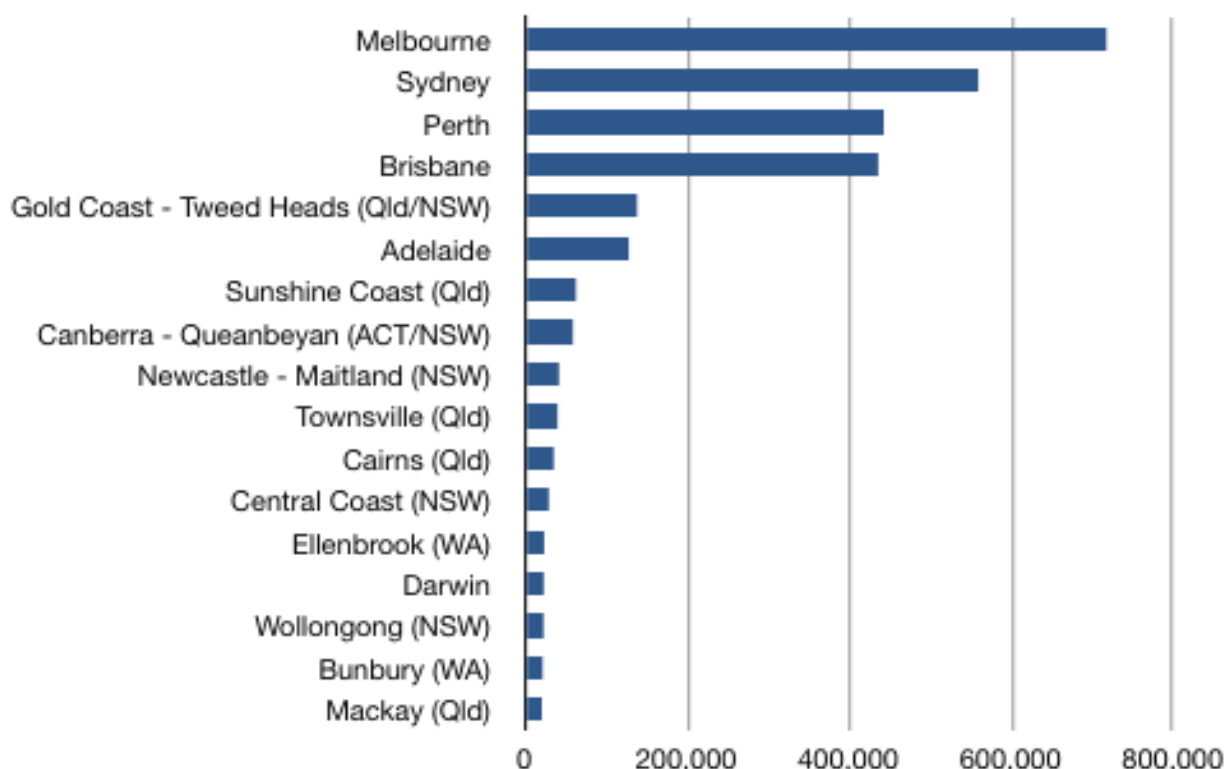
¹² It is assumed that Australia will not become a high fertility country, even if there are high levels of NOM. If there were high fertility, the population at the end of the century would be about 70 million. (This is Series A). If the higher life expectancy (due to using the 'cohort life expectancy' method) of the 2015 Intergenerational Report comes to be, the population at the end of the century would also be about 70 million (maintaining the 1.3 per cent per annum growth rate assumption of the 2015 Intergenerational Report).

It is hard to imagine that a government would entirely stop net overseas immigration, so it seems we may have to learn to live with a larger population and plan accordingly. In order to start planning we need to consider where all these people will live.

The geography of population growth

Population growth is consistently highest in the major capital cities. Although there are periods when certain regional areas have a high rate of growth, for example during mining booms, growth has overwhelmingly centered on the major cities, as shown in Figure 8 below.¹³

Figure 8: Areas of more than 20,000 population growth, 2003 to 2013



Data Sources: 3218.0 Regional Population Growth, Australia, Table 1. Estimated Resident Population, Significant Urban Areas, Australia

Figure 8 shows that in the period from 2003 to 2013 Melbourne experienced the greatest population growth, followed by Sydney, Perth and Brisbane. Hobart was the only capital city to gain less than 20,000 new residents in that period, though it still grew by 16,477. Adelaide gained fewer people than the Gold Coast-Tweed Heads area.

The high growth in peri-urban regions and neighbouring metropolitan areas are contributing to the growth of the greater metropolitan areas of our major capital cities. Examples are Ellenbrook near Perth, the Sunshine and Gold Coasts near Brisbane, the Central Coast and Wollongong near Sydney and Melton near Melbourne.

¹³ For example Karatha increased its population by more than 50 per cent between 2003 and 2013. However, it is not just regional areas that have such high rates of increase, Melton, on the outskirts of Melbourne, also had more than a 50 per cent population increase during that period, with 19,185 new residents.

Projections of population in Australia's cities

ABS Series B population projections, which include internal migration trends, suggest that in 2061 Australia's four biggest cities would each have a larger population than Sydney currently has, as shown in Figure 9 below:

Figure 9: Projected population of Australia's largest cities (Series B)

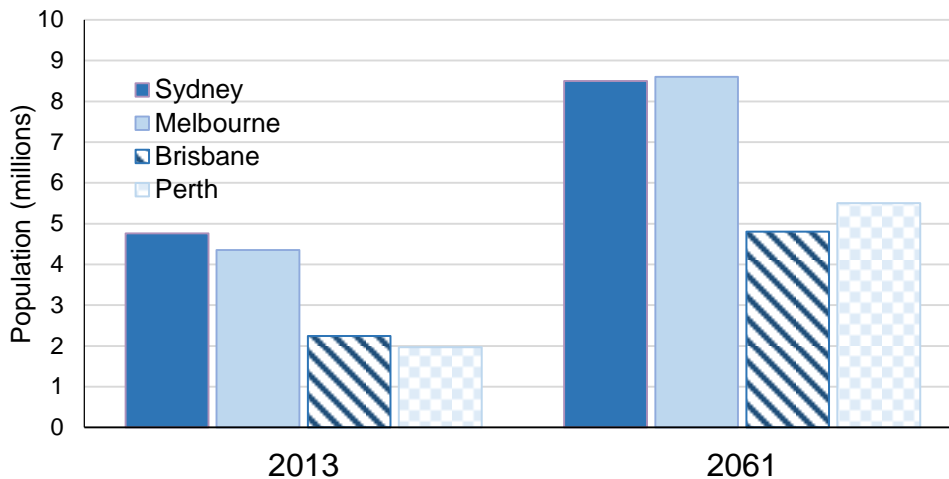


Figure 16. Population projected to 2061 for Australia's largest cities according to Series B. Data sources: ABS Population Projections 3222.0 and ABS Regional Population Growth, Australia, 2012-13, 3218.0

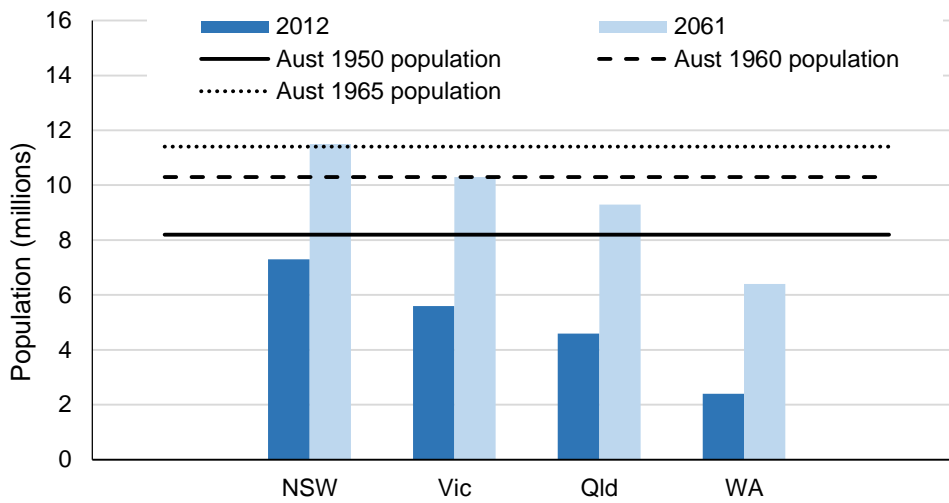
Figure 9 shows that under the ABS's central forecasts, Melbourne's population would exceed Sydney's before the year 2061 with a population of 8.6 million compared to Sydney's 8.5 million. Brisbane's population¹⁴ would overtake Sydney's 2013 population by the year 2061. The smallest of the cities, Perth, would have an increase in population almost as great as Sydney's, an increase of more than 3.5 million over that period.

Brisbane would double its population in less than 50 years, Perth almost triple its population. Both Melbourne and Sydney would each have larger populations than all of Australia had in 1950, at the start of the post-WWII migration boom. And Perth and Brisbane together would have almost the same population as Australia had 100 years before, in 1961.

Under current trends, in 2061 NSW would have a larger population than all of Australia had in 1965, less than a century earlier, as shown in Figure 10 below:

¹⁴ Brisbane excludes the Gold Coast and Sunshine Coast, which would together with Brisbane form a contiguous metropolis.

Figure 10: Population projected under current trends to 2061 for Australia's largest states, compared to national population in 1950, 1960 and 1965



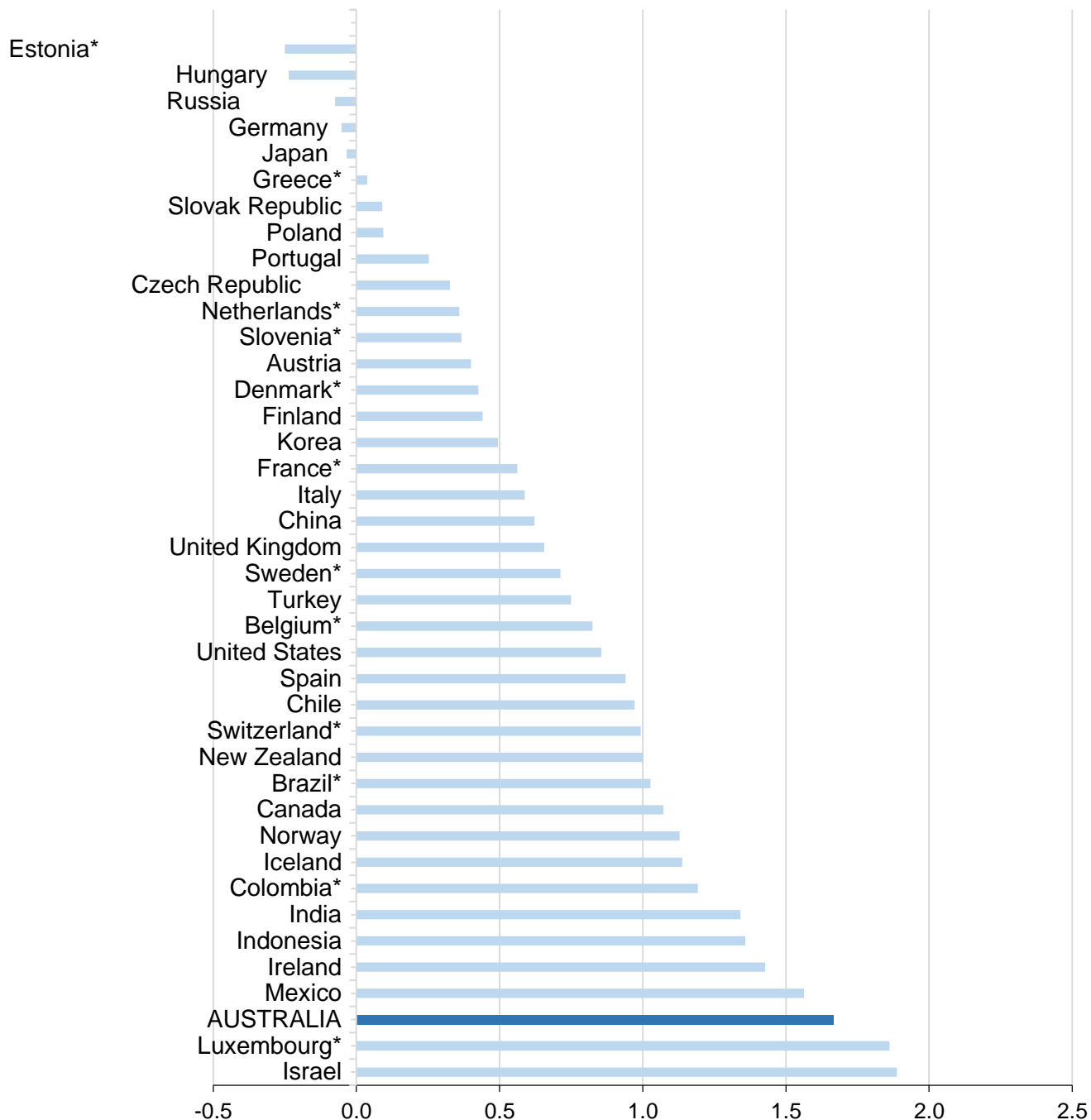
Data sources: ABS Population Projections 3222.0 and ABS Historical Population Statistics 2014, 3105.065.001

Figure 10 shows that under the ABS central forecast, in 2061 Victoria would have the same population as all of Australia had in 1960. In 2061 Queensland would have a larger population than all of Australia had in 1950. It is important to note that these are not the projections of the high growth scenario (Series A), but of the one that most closely matches current trends (Series B).

International comparisons

Australia has one of the highest population growth rates in the OECD, shown in Figure 11 below:

Figure 11: OECD population growth rates, average between 2005 and 2013 (% per annum)



Data Source: OECD StatExtracts – population (* data from 2013 not available)

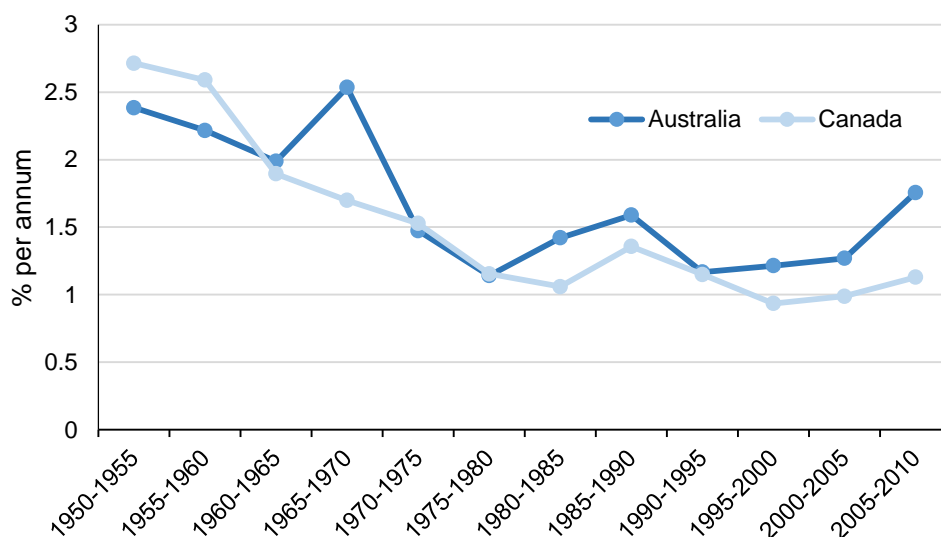
While Israel and Luxembourg had higher growth rates than Australia, comparison with either country is difficult due to their special circumstances – Israel has the right of return for Jews¹⁵ and Luxembourg is a tiny country.

The country most like Australia is Canada. Both are affluent English-speaking Commonwealth countries that have created harmonious multicultural societies through immigration. Both are geographically large, with major parts of the country suitable only for sparse populations, and both have significant resource industries, though both are primarily modern service economies. As shown in Figure 11, Canada's population growth has been slower than Australia's. The two countries are compared further below.

Australia and Canada

Canada's population growth between 2005 and 2013 averaged 1.07 per cent, compared to Australia's 1.67 per cent. Comparing Australia and Canada's population over time, we see that until the early 1990s there was a reasonably close match, except for a short period during the late 1960s, as shown in Figure 12 below.

Figure 12: Australia and Canada, average rate of population change (1950-2010)



Data Source: UN Population Division.

Since the early 1990s the trends have diverged, with Australia's growth rate outpacing Canada's. Part of this divergence is due to the rate of net overseas migration since the early 2000s. But migration is not the only factor in Australia's higher population growth rate. The rate of natural population growth has also differed. Canada once had a higher fertility rate than Australia but now has a lower one. Australia has a higher fertility rate (1.89 births per woman in 2010) than the OECD average (1.74 in 2010). Canada's was 1.67 in 2009. These comparisons between Australia and Canada are shown in Figures 13 and 14 below

¹⁵ The negative population growth in former communist countries such as Estonia, Hungary and Russia can at least partially be explained by immigration to Israel by Jews after the fall of the Berlin Wall and the collapse in communism. This also therefore accounts for some of Israel's rapid growth.

Figure 13: Australia and Canada - average net overseas migration rate

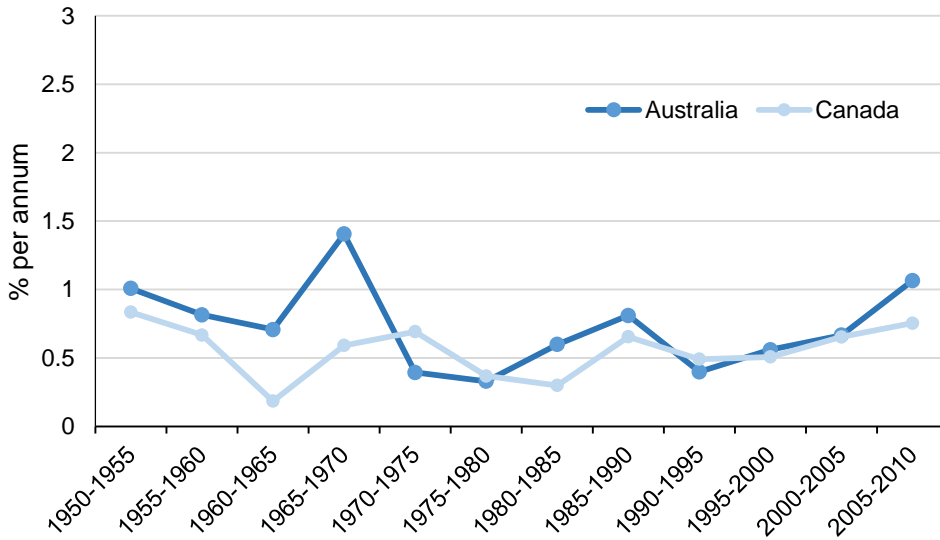
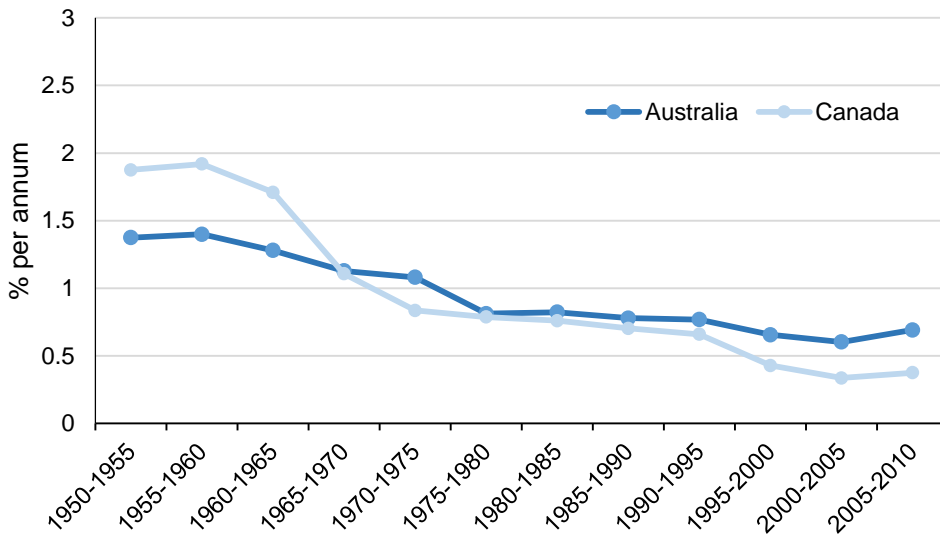


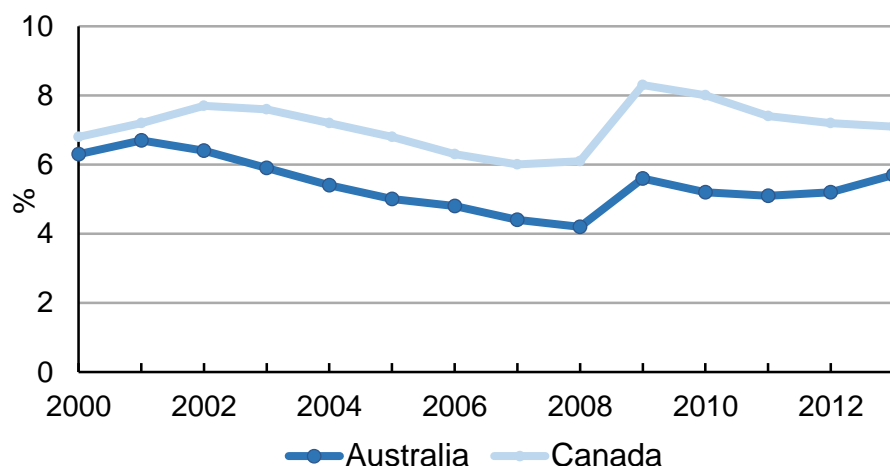
Figure 14: Australia and Canada - average rate of natural increase



Data Sources: UN Population Division.

The probable reason for the slowdown in NOM in Canada, compared to Australia, is the divergence in the unemployment rate since the early 2000s. While the rates were similar at the beginning of the millennium, Canada's has consistently exceeded Australia's since then, as shown in Figure 15 below:

Figure 15: Australia and Canada - unemployment rate



Data Source: OECD StatExtracts: Labour Force Statistics, Unemployment

The higher rate of natural increase in Australia than Canada since the 1980s may itself be due to higher rates of immigration during much of the period since then, as recent immigrants tend to have more children than the existing population.

Again it is important to note that while unemployment may be temporary, population increase is not. Both the positives and negatives of a greater population may endure far longer than the impact of downturns in employment, especially if governments fail to implement measures to address rapid population growth.

Future International Population Trends

The United Nations Population Division runs population projections of member countries. It also has three projection scenarios: high, medium and low variants. These scenarios are developed from estimates based on the trends from 1950 to 2010 in that country.

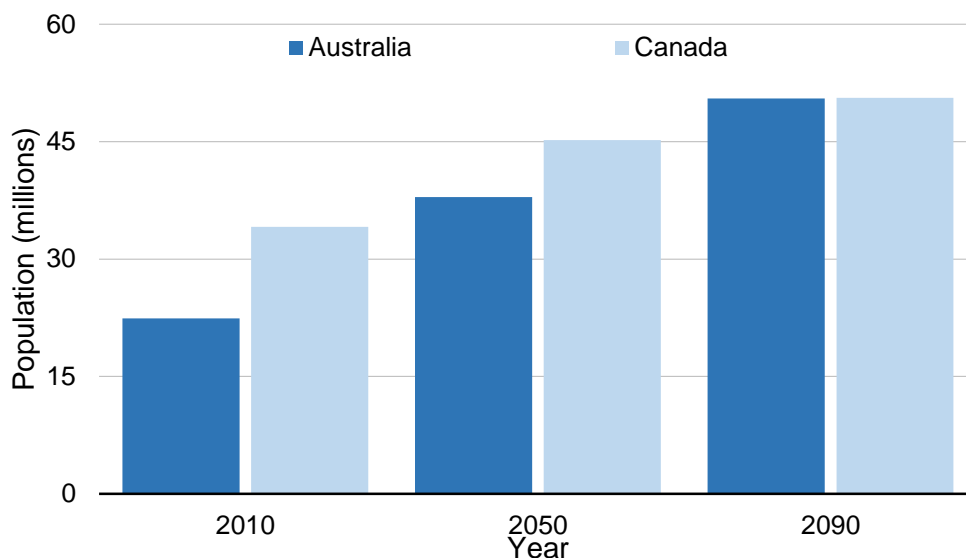
The scenarios do not necessarily accord with official estimates of those countries, such as the ABS projections in the case of Australia. Because they are based on long term trends the UN projections are likely to be less accurate for Australia than the ABS scenarios, which reflect recent shifts in trend. For countries where trends have remained fairly consistent they are likely to be reasonably accurate.

Again it is interesting to compare Australia and Canada. Statistics on Canada's medium growth projections are somewhat higher than the UN projections (about 50 million in 2060¹⁶, as compared to 47 million), whereas in series B Australia's population would be about 41 million in 2060, as compared to 36 million in the UN projections. Therefore there is a greater variation between official national projections and the UN figures in Australia's case. While series B is not identical to any of the scenarios the UN uses for Australia, it is closer to the high variant than the medium variant.

Note that the ABS Series B forecasts are higher than the UN forecasts. Under these assumptions (Series B for Australia and UN medium variant for Canada) Australia's population would match Canada's in 2090, both about 50.5 million (see Fig. 18),

¹⁶ Statistics Canada, Table 052-0005. These projections are only for 50 years, to 2063.

Figure 16: Australia and Canada - ABS series B and UN medium forecasts



Data sources: ABS Population Projections 3222.0 and UN Population Division, World Population Prospects: The 2012 Revision

Of course these comparisons are based on two different sets of projections and they are by their nature speculative and subject to change. However, they accord to the best estimates by current trends. Australia may not have a larger population than Canada in 2100, however Australians are largely unaware that such changes in their population are possible.

Conclusion

Does the current high rate of population growth in Australia matter? Does it matter if we become as big as Italy in 85 years' time? Or if Victoria in 2061 has the same population as all of Australia had only a century earlier in 1961?

The degree to which population growth matters depends on how well it is planned for and indeed can be planned for. The current lack of policy debate suggests that what planning is occurring is not subject to much public scrutiny.

If we do decide to have a population debate, it will hinge on some key points. On some of these points there is near consensus, on others no agreement. Other than on the extreme political right there is a broad consensus that cultural diversity has been and continues to be good for Australia. Most people agree that Australia has global humanitarian responsibilities to people in extremely unfortunate circumstances such as refugees. The quotas and the manner of carrying out this responsibility may be a point of argument, but not the principle itself.

Some facts are indisputable. Total fertility rate has dropped over the last decades, though it is still relatively high by developed countries' standards. The population is ageing – though less rapidly than in most wealthy countries – and this has economic and social consequences. There is little governments can do about this trend; it must simply be planned for. Immigration does not alleviate this trend in the long term because immigrants get old too. And policies such as baby bonuses result in mere blips in this trend.

Most population growth will occur in our major cities. This too has consequences because it places strain on existing infrastructure. Traffic congestion, lack of public transport, diminished access to open space and more limited availability of government services are all legitimate concerns of citizens, as confirmed in opinion polls. Some of these can be planned for, such as by urban density design and expansion of public transport systems, but such changes can only be implemented slowly and/or are costly. There is public concern that the planning response is too slow and not well enough funded to cope with the pace of growth.

No one really doubts that rapid population growth has some economic benefits. But are the benefits as widespread as proponents insist they are? Does population growth fund itself or indeed bring net economic benefits? Or does it become increasingly difficult to build the infrastructure needed to accommodate extra people? There is little agreement on these points.

Likewise no one seriously disagrees that rapid population growth has environmental impacts. But are these impacts largely urban and can they be managed? Can Australia become more environmentally sustainable while simultaneously growing? Some proponents of a larger population argue that Australia's most severe environmental impacts arise from our export industries such as mining and agriculture, and that these industries are not linked to population size. However, they never argue that our per capita GDP should diminish or that our balance of trade should worsen, hence they also seem to assume a growth in these environmentally damaging export sectors.

These are all matters for public debate on which citizens have a right to an informed say. And yet they are all too rarely discussed.

Data Sources

2015 Intergenerational Report

Australian Bureau of Statistics

Organisation for Economic Co-operation and Development

Statistics Canada

United Nations Population Division

Thanks to Ingrid Krockenberger for research and other assistance