

AN UPDATE ON AUSTRALIA'S FUTURE POPULATION GROWTH AND ITS POPULATION PROBLEMS

Christabel Young

Population projections need to be continually updated as new information becomes available. In addition, it is important to distinguish between the projected population which will be attained at a given date, such as 2041, and the ultimate level of population. For example, with an assumption of a total fertility rate of 1.865 children per woman and annual net migration of 50,000, ABS projections published in 1996 and additional projections in 1997 suggest a population of 24.5 million in 2051 and an ultimate population of more than 25 million. The analysis in this article also puts Australia's various population problems into a proper perspective and tries to direct attention away from the unnecessary preoccupation with population decline.

THE PROJECTED POPULATION OF AUSTRALIA

The most recent set of population projections from the Australian Bureau of Statistics (ABS) provides a rich source of data about the size of Australia's future population according to various feasible scenarios of fertility and annual net migration.¹ For the information of users, the ABS also provides projections of the population under the assumption that net migration is zero for the next 55 years, a scenario which is most unlikely, but whose results highlight the needless fears of those who predict an instant population decline without positive net migration. In particular, a scenario of zero net migration and a total fertility rate of 1.865 children per woman would produce a population total in 2051 which is two million higher than the total in 1995.

By taking into account revised figures for each of the components that make up the projections, the ABS projections from 1995 to 2051 also provide a useful update on earlier projections, which used virtually the same level of fertility, such as the ABS projections from 1993 to 2041, and earlier projections made by the author from 1986 and 1990.² Of particular note is that, for a fixed level of fertility, and a fixed moderate level of annual net migration, each more recent projection gives a higher estimate of the future population at a given date.

For example, Table 1 shows that, with virtually the same levels of fertility, and an assumption of an annual net migration of 70,000, the projections from 1986 gave a population of 23.4 million in 2041, those from 1990 gave a population of 23.9 million in 2041, those from 1993 gave a population of 24.9 million in 2041, while those from 1995 gave a total of 25.3 million in 2041 (and 26.1 million in 2051).

Similarly, with the same levels of fertility, and an assumption of an annual net migration of 50,000, the projections from 1986 gave a population in 2041 of 22.0 million, and those from 1990 gave a figure of 22.5 million. While it was correct in 1994 to say that projections from

1993 would give a population of 23.6 million in 2041, three years later projections done in 1997 from a 1995 population base give figures of 24.0 in 2041, and 24.5 in 2051 (and 25.6 million in 2101).

There are reasons for the ever-increasing projected population at 2041 according to similar scenarios of fertility and annual net migration. Firstly, in a continuing climate of high immigration, the longer the delay in implementing a net intake of 50,000 or 70,000 per year, the higher will be the successive projections which assume such a net intake. For example, in the ten years since 30 June 1986, total net migration was 984,000, which is 484,000 higher than would have occurred from the net annual intake of 50,000 assumed in Young's projections from 30 June 1986.

Table 1: Results of successive population projections with a total fertility rate around 1.87 children per women, and annual net migration of 50,000 and 70,000						
Base year of projection (30 June)	Total fertility rate	Expectation of life at birth			Projected population	
		Males	Females	Year	2041	2051
Annual net migration of 70,000						
1986 (Y)	1.87	75.4	84.5	2041	23.4	
1990 (Y)	1.87	75.4	84.5	2041	23.9	
1993 (A)	1.88	79.6	84.9	2041	24.9	
1995 (A)	1.865	81.1	86.3	2051	25.3	26.1
Annual net migration of 50,000						
1986 (Y)	1.87	75.4	84.5	2041	22.0	
1990 (Y)	1.87	75.4	84.5	2041	22.5	
1993 (A)	1.88	79.6	84.9	2041	23.6	
1995 (R)	1.865	81.1	86.3	2051	24.0	24.5
Source: See notes 1 and 2. Y denotes Young and A denotes ABS. R denotes unpublished projections by the ABS.						

Secondly, a further difference between Young's projections and those of the ABS is that the ABS assumes a gradual trend from the current level to 70,000, or some other figure. In contrast, because Young's initial projections were carried out largely to show the difference between intakes of 50,000, 100,000 and 150,000, they assumed an immediate adoption of such immigration levels.

Thirdly, the earlier projections assumed a slower decline in mortality than the most recent set. For example, the projections by Young used the projected life table for 2020 published by ABS,³ representing expectations of life from birth of 75.4 years for males and 84.5 years for females, and it was assumed that this level would continue to 2041. However, the ABS

projections from 1993 assumed a faster decline in mortality, and hence expectations of life from birth in 2041 of 79.6 years for men and 84.2 years for women, while the projections from 1995 assumed an even faster decline in mortality, resulting in expectations of life in 2051 of 81.1 years for men and 86.3 years for women. These differences are also shown in Table 1. Other small differences include some further revisions to the base population and a slightly different methodology.

Table 2: Effect of differences in levels of mortality in ABS projections 1989-2031 (assuming a total fertility rate of 1.78 children per woman and an annual net migration of 125,000)		
Year	Males	Females
Expectations of life from birth in the given year (in years)		
1986-88	73.0	79.3
1996	75.3	80.9
2031	78.9	84.0
Population in 2031 assuming 1986-88 mortality		24.9 million
Population in 2031 assuming declining mortality		26.0 million
Source: See note 4.		

Feasible changes in future levels of mortality have a much smaller effect on the size of the future population than feasible changes in the level of fertility or in the level of annual net migration. Nevertheless, it is of interest that successive population projections by the ABS have assumed an even faster decline in mortality than the previous set. In one set of projections (1989 to 2031) the ABS compared the effect of constant mortality with that of declining mortality on the size of the future population, as shown in Table 2.⁴ The difference between the two population totals is relatively small, but the figures do show that a difference in expectation of life of around five years for both males and females can produce a difference of around one million in the size of the projected population over a forty year period.

This analysis demonstrates the need for a constant updating of population projections, preferably by the ABS, the government institution which is ideally suited for this task. Such updating is necessary to take into account revised estimates of the base population, actual levels of annual net migration, and new projections of mortality, as well as the more difficult task of guessing what the future level of fertility might be.

DIFFERENCE BETWEEN THE ATTAINED POPULATION AT A GIVEN DATE AND THE EVENTUAL POPULATION

In the discussion about the impact of a given level of immigration on the future size of the population, it is necessary to distinguish between the total population attained at a given date, such as 2041, and the eventual near-constant size of the population some decades

beyond that date. In particular it is important to know not only what annual level of net migration is needed to attain a given population at, say, 2041, but also to know what annual level of net migration is needed to *achieve and maintain* a given level of population beyond that date, say to 2091 or beyond.

In 1994 the expected attained population in 2041 from an annual net migration of 50,000 and a total fertility rate of 1.88 was 23.6 million, but that was not the eventual size of the population that would ultimately be attained. Similarly, in 1997 the expected attained population from an annual net migration of 50,000 and a total fertility rate of 1.865 children is 24.0 million in 2041, and 24.5 million in 2051, but again that is not the ultimate size of the population under such a scenario; for example, the expected population in 2101 is 25.6 million. Therefore, if fertility continues at the level of 1.865 children per woman, and mortality follows the path expected by the ABS, an annual net migration of 50,000 would be obviously too high to *achieve and maintain* a population of 23.6 million (and would have been too high even according to the 1994 projections), and is now also slightly too high to achieve and maintain a population of 25 million.

Of course, a sustained decline in the total fertility rate could mean that an annual net migration of 50,000 might still produce a population of 23.6 million in 2041. However, as indicated later in this paper in the discussion to Table 3, a decline in fertility would have a severe effect on the age structure of the population, and hence on the social and economic functioning of the population, and is therefore an undesirable outcome.

Table 3: The timing of future demographic problems in Australia

Immediate existing problem 1997-2011 — high ratio of workers to dependents

Later inevitable problem 2011-2031 — rapid ageing of the population

Continuing inevitable non-problem 1997-2051 — increasing annual deaths and declining natural increase (assuming that age-specific mortality rates remain low)

Continuing potential problem 1997-2051 — if fertility declines, there will be a much worse ageing of the population and a severely distorted age structure

Continuing potential problem 1997-2051 — if annual net migration over the next 55 years is greater than 50,000 the population will keep on increasing (assuming that fertility remains near its current level)

Even later potential problem after 2031 — if annual net migration is zero during the next 55 years the population will decline (assuming that fertility remains near its current level)

Projections made from 1986 to the end of next century suggested that an annual net migration of 70,000 would have been sufficient to achieve and maintain a future population of 25 million. Now, almost ten years later, with updated information on the base population and mortality, and with high immigration during the intervening years, it seems that, with a total fertility rate of 1.865, the necessary level of annual net migration to achieve and maintain a population of 25 million would be slightly less than 50,000 (between 40,000 and 50,000).⁵ These last two paragraphs thus emphasise the important distinction between (a) the

conditions needed to attain a given population at some intermediate date; and (b) the conditions needed to produce an eventual near-constant population; they further highlight the importance of regular updates of official population projections.

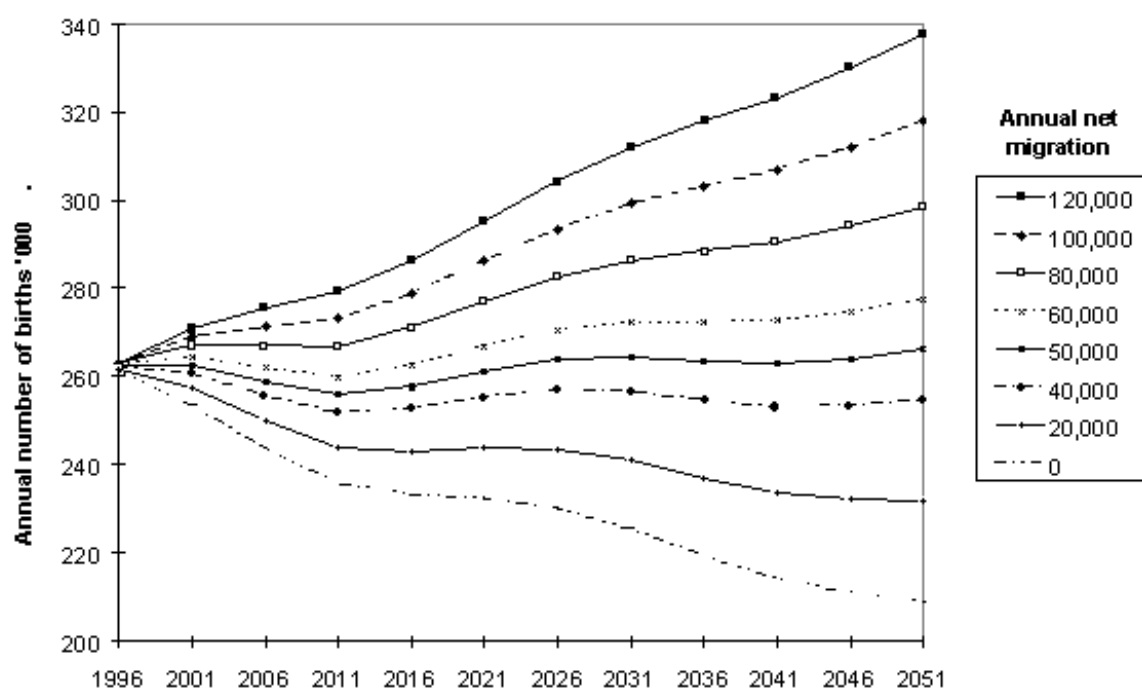
AUSTRALIA'S POPULATION PROBLEMS

In this update of Australia's possible future total population, it is also useful to reassess the various population 'problems' which Australia faces, and this is done in Table 3.

To a large extent, it seems that, with regard to Australia's population 'problems', commentators are focusing on the wrong problem at the wrong time. Some potential population problems, such as population decline, which would only occur if the government adopted the most unlikely scenario of zero net migration for 55 years (and even then would not occur for another 30 to 40 years), are given a great deal of prominence, while others, which are close at hand, inevitable and more serious, are ignored.⁶

The demographic aspects of the current excess of workers (as measured by the ratio of young and elderly dependents to workers)⁷ do not seem to be fully appreciated, and various labour-market and fiscal policies to reduce high unemployment seem to be largely ineffective. At last it is now realised that ageing of the population is inevitable, and that the rapid ageing during 2011-2031 will be due to the ageing of the large baby-boom cohort. This problem is now being dealt with reasonably effectively by non-demographic policies, such as increased occupational superannuation coverage, higher health charges, and tighter targeting of government services to the elderly. However, such non-demographic policies might have been implemented sooner if there had not been a widespread belief during the 1980s that immigration would solve the ageing problem.

Figure 1: Projected annual births in Australia to 2051 according to different levels of annual net migration, thousands



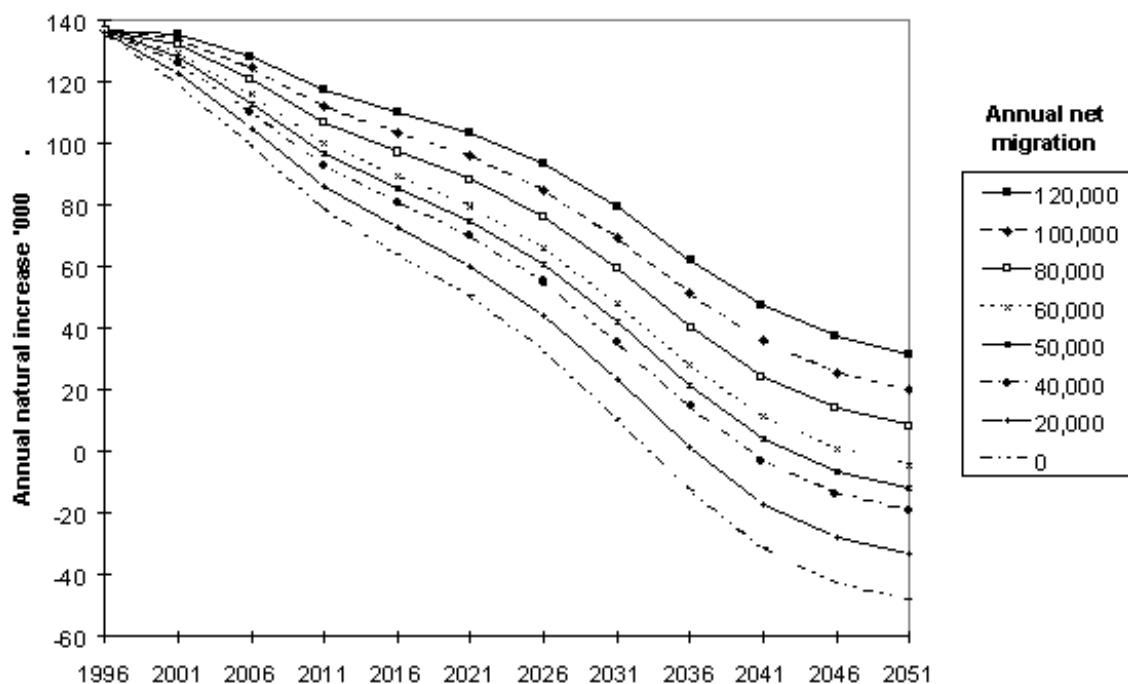
Source: Derived from ABS (1996). See note 1. Assumes that the total fertility rate is 1.865

children per woman

Linked with the fear of population decline is a fear that natural increase will decline, accompanied by the mistaken view that the cause of the decline in natural increase is a decline in annual numbers of births. The true situation is that, with moderate or high levels of immigration and a total fertility rate near the current level, the future decline in natural increase will occur because of an increase in the number of deaths while annual numbers of births will remain near constant or will increase. The increased number of deaths is the inevitable outcome from a growing proportion of the population at the older ages, a process which will be accelerated by the ageing of the baby-boom cohort. Thus, an increase in annual deaths (assuming continuing low age-specific mortality) and the consequent decline in natural increase is an *inevitable non-problem*. Figure 1 shows that annual births are expected to be relatively constant, or increasing, for levels of annual net migration above 40,000, while, in contrast, Figure 2 shows that natural increase is expected to decline quite steeply even with high levels of annual net migration.

The implications of a potential decline in fertility are largely unacknowledged, even though such a decline would greatly worsen the level of elderly dependency during the critical years after 2016. McDonald has also expressed concern about the neglect of support to families with young children, especially the apparent erosion of assistance to women who wish to combine work and family.⁸ If fertility falls markedly below its current level, even extremely high levels of immigration could not counteract the severe undercutting of the age pyramid which would result.

Figure 2: Projected annual natural increase to 2051 according to different levels of annual net migration, thousands



Source: Derived from ABS (1996). See note 1. Assumes that the total fertility rate is 1.865 children per woman

While politicians and others deplore the prospect of a population decline, after an extremely unlikely scenario of zero net migration for the next 55 years, none seem to recognise the need to prepare for the other more likely scenario of continuous population increase (if annual net migration exceeds 50,000). For example, there appears to be no planning about where an additional ten million people in 2051 might live if annual net migration is in the region of 100,000 per year.

CONCLUSION

Young's submission to the Committee on Long Term Strategies in 1994 emphasised the benefits of an annual net migration of around 50,000 coupled with a total fertility rate of around 1.87 children per woman.⁹ While this is still broadly the ideal scenario, the annual net migration now required to complement such a level of fertility is between 40,000 and 50,000, rather than 50,000 (because of the larger population base as a result of high immigration and the revised future level of mortality). Further data and analysis are needed to determine a more precise estimate of the level of net migration required and a more precise estimate of the eventual population. Nevertheless, such a combination of fertility (TFR around 1.87) and net migration (between 40,000 and 50,000 per year) would take advantage of the unique existing properties of the Australian population, such as near constant births and declining natural increase, and it would produce several desirable outcomes. These are: a gradual increase to a near-constant population around the end of next century; a continuing near constant annual number of births; and a generally acceptable level of annual net migration.

Notes

1 The most recent set of official projections is Australian Bureau of Statistics (ABS) *Projections of the Populations of Australia States and Territories 1995-2051*, Cat. No. 3222.0, Canberra, 1996, and interpolations have been derived from these. In 1997 the ABS also carried out a special population projection to 2101 at the request of C. Young, which assumes a total fertility rate of 1.865 and a trend to 50,000 annual net migration, and which incorporates actual net migration during 1995-96.

2 The previous set of official projections was ABS *Projections of the Populations of Australia States and Territories 1993-2041*, Cat. No. 3222.0, Canberra, 1994. Although there are several earlier sets of ABS projections, they are not included in Table 1 because the assumed total fertility rates were too different from 1.87. Young's projections from 1986 are discussed in C. Young *Australia's Ageing Population. Policy Options*, Bureau of Immigration Research, Australian Government Printing Service, Canberra, 1990. Revisions made to these figures in 1990, with the addition of the ABS (1994) projections, were included in C. Young and L. Day 'Australia's demographic future: determinants of our population' in *Population 2040: Australia's Choice*, The Australian Academy of Science, Canberra, 1994.

3 ABS *Projections of Australian Mortality Rates 1981-2020*, ABS Occasional Paper No. 1983/2, Canberra, 1984

4 ABS, *Projections of the Populations of Australia States and Territories 1989-2031*, Cat. No. 3222.0, Canberra, 1990

5 The outcome of annual net migration of 70,000 from 1986 is referred to in Young (1990) in note 2.

See ABS (1996, 1997) in note 1, regarding projections from 1995 with 50,000 annual net migration.

6 Media Release 6 January 1997 from Duncan Kerr MHR Shadow Minister for Immigration and Barry Jones MHR

7 C. Young, 'The future population and the future labour force', *People and Place*, vol. 2, no. 4, pp. 15-21

8 P.F. McDonald, *Gender equity, social institutions and the future of fertility*, Working Papers in Demography No. 69, Research School of Social Sciences, Australian National University, Canberra, 1997

9 Submission by C. Young in Submissions to the Committee's Inquiry into Australia's Population Carrying Capacity, vol. 3. House of Representatives Standing Committee for Long Term Strategies, Canberra, 1994

Back to [Contents Vol. 5 No. 2](#)

Back to [People and Place Home Page](#)