

Queensland Government population projections, 2015 edition: Background research

Introduction

Projections of the size and age structure of the Queensland population are based on assumptions made about future levels of fertility, mortality, and overseas and interstate migration. This paper provides detail on past and recent trends in these components of population change on which assumptions have been made for the Queensland Government population projections, 2015 edition.

Fertility

Total fertility rate

One common measure of fertility is the total fertility rate (TFR). The TFR represents the number of children a woman would bear during her lifetime if she experienced the age-specific fertility rates prevailing over that period at each age of her reproductive life. The TFR is calculated as the sum of the age-specific fertility rates.

Replacement level fertility is the TFR that will result in a stable population, excluding the impact of migration. Replacement level fertility is expressed as the total number of live babies a female would need to have over her reproductive life span for this to occur. Given the current mortality of females up to age 49 years, replacement fertility is estimated at around 2.1 babies per female¹.

In a population closed to migration, below replacement level fertility will result in eventual population decline. A population experiencing a TFR below the replacement level can continue to increase in size, although this would require sufficient overseas migration at the national level, and overseas and interstate migration at the state and territory level, to offset these low fertility effects.

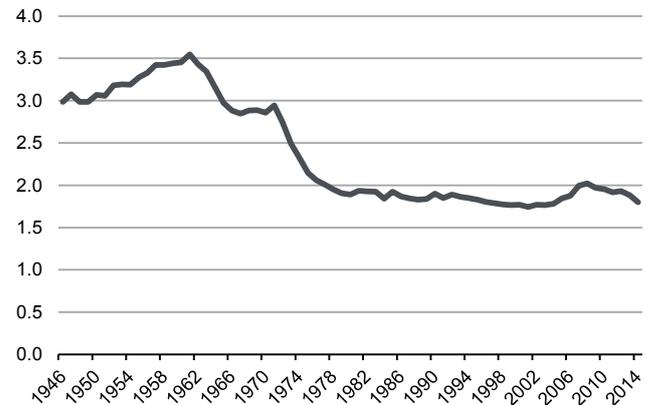
Fertility rates in most Organisation for Economic Cooperation and Development (OECD) countries are below replacement levels. Many are currently experiencing greatly reduced rates, such as South Korea and Hungary (both 1.2) and Poland (1.3)².

Long term trends

Fertility rates in Australia ranged from approximately 3.0 to 3.5 babies per woman from the mid 1940s to the early 1970s. Rates then declined sharply to below 2.0 by

the late 1970s, before continuing to decline at a more gradual rate until reaching 1.7 around the end of the 20th century. Fertility then temporarily recovered to 2.0 babies per woman by 2008. Rates have declined gradually since that time, reaching 1.8 in 2014 (Figure 1).

Figure 1 Total fertility rate, Australia

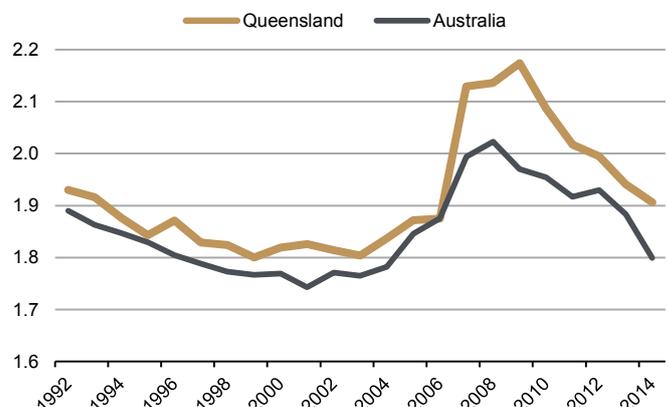


Source: (1946–2003) ABS 3105.0.65.001, *Australian historical population statistics, 2014*; (2004–2014) ABS 3301.0, *Births, Australia*

Recent trends

Fertility rates reached record lows of 1.80 in Queensland (1999) and 1.74 in Australia (2001) before increasing to 2.17 in Queensland (2009) and 2.02 in Australia (2008). Rates have once again continued to fall in recent years, reaching 1.91 in Queensland and 1.80 in Australia in 2014 (Figure 2).

Figure 2 Total fertility rates, Queensland and Australia



Source: (1992–2003) ABS 3105.0.65.001, *Australian historical population statistics, 2014*; (2004–2014) ABS 3301.0, *Births, Australia*

¹ ABS 3301.0, *Births, Australia, 2014*

² *OECD Factbook 2014*

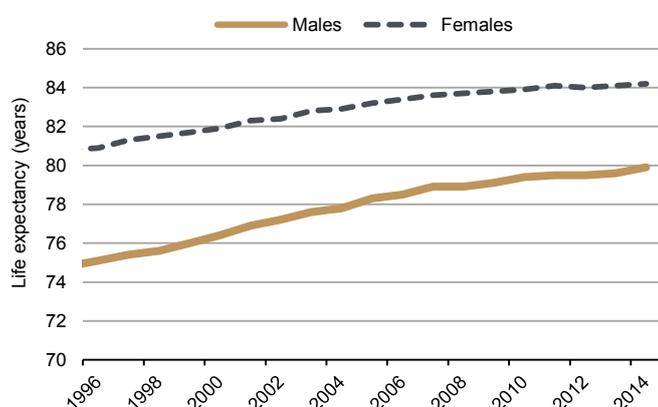
Mortality

Trends in life expectancy

Since the late 19th century there have been significant improvements in life expectancy at birth for both male and female Queenslanders, and these improvements have been sustained to the present time (Figure 3).

Between 1995 and 2014, life expectancy at birth for Queensland males and females increased from 74.8 to 79.9 years and from 80.8 to 84.2 years respectively. This represented average annual improvements of 0.27 years for males and 0.18 years for females over this period.

Figure 3 Life expectancy at birth, Queensland



Source: ABS 3302.0, *Deaths, Australia*

Net overseas migration

Net overseas migration (NOM) is the net gain or loss of population through immigration to and emigration from Australia.

It is important to note that Australian Bureau of Statistics (ABS) NOM estimates contain a break in series. Estimates for September quarter 2006 onwards use an improved methodology and are not directly comparable with NOM estimates from earlier periods. The improved method is based on a traveller's actual duration of stay or absence using the '12/16' rule where, for example, overseas travellers resident in Australia for a total period of 12 months or more during a 16-month follow-up period are included in the estimated resident population (which allows temporary entrants such as overseas students to be counted in population statistics).

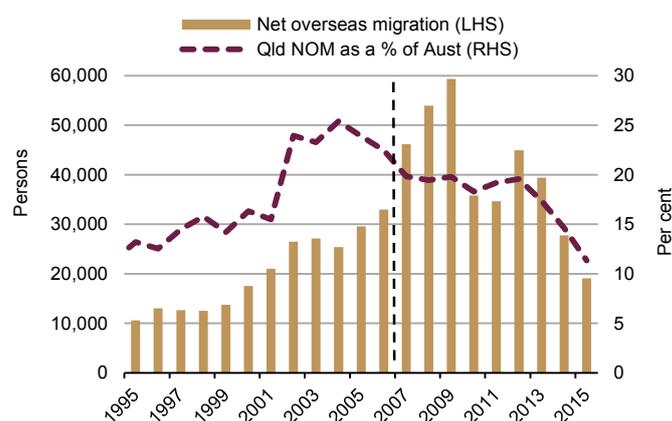
Recent trends

NOM has shown considerable variation in recent decades. NOM trended upwards gradually during the 1990s and early 2000s. With the introduction of the improved NOM methodology there was a significant increase to a record 59,300 persons in the year ending 30 June 2009. NOM has declined markedly since that

time, adding only 19,100 persons to the Queensland population in 2014–15 (Figure 4).

Queensland's share of NOM in Australia averaged approximately 20.0% between 2006–07 and 2011–12. However, this share dropped to 17.4% in 2012–13 and then further to 11.3% in 2014–15.

Figure 4 Net overseas migration, at 30 June, Queensland



Note. There is a break in series between 2005–06 and 2006–07.

Source: ABS 3101.0, *Australian demographic statistics*

NOM has also been trending downwards in Australia since 2012, adding only 168,200 persons to the Australian population in 2014–15.

DIBP Forecasts

The Department of Immigration and Border Protection (DIBP) forecasts NOM for Australia by flows and visa components, and updates these forecasts on a quarterly basis. The forecasts combine the latest data on permanent and long term arrivals and departures with past behaviour of migrants across different visa groups to enter and leave the population. It takes into account official Australian and world economic growth forecasts, visa grants, and the impact of announced policy decisions.

DIBP forecasts released in June 2015 indicate that NOM for Australia was expected to decline from 205,800 persons in 2013–14 to 186,300 in 2014–15, before increasing to reach 246,500 persons at the end of the forecast period in 2018–19 (Table 1).

Table 1 Overseas migration, Australia

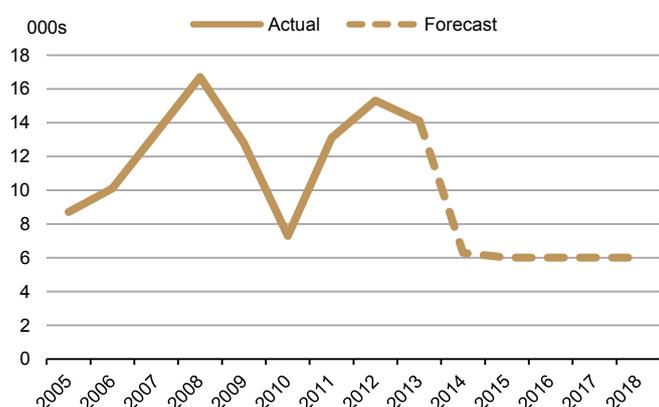
Year ending 30-Jun	Arrivals	Departures	Net
Actual			
		— 000s —	
2011	431.8	251.4	180.4
2012	481.2	251.8	229.4
2013	496.7	269.6	227.1
2014	488.6	282.8	205.8
Forecast			
2015	473.8	287.5	186.3
2016	467.8	268.4	199.4
2017	482.2	272.8	209.4
2018	502.9	275.1	227.8
2019	525.5	279.0	246.5

Source: DIBP, *Outlook for net overseas migration*, June 2015

New Zealand Citizens

The New Zealand visa category (sub-class 444) has been a large contributor to NOM in Queensland, accounting for 28.6% of Queensland NOM between 2004–05 and 2012–13. However, the contribution of New Zealand citizens to NOM in Queensland is forecast to decline sharply from 14,100 persons in 2012–13 to 6,300 persons in 2013–14 and to remain at around 6,000 persons per year for the forecast time horizon to 2017–18 (Figure 5).

Figure 5 Net overseas migration, New Zealand visa type, at 30 June, Queensland



Source: DIBP, *Regional net overseas migration 2004–05 to 2017–18*

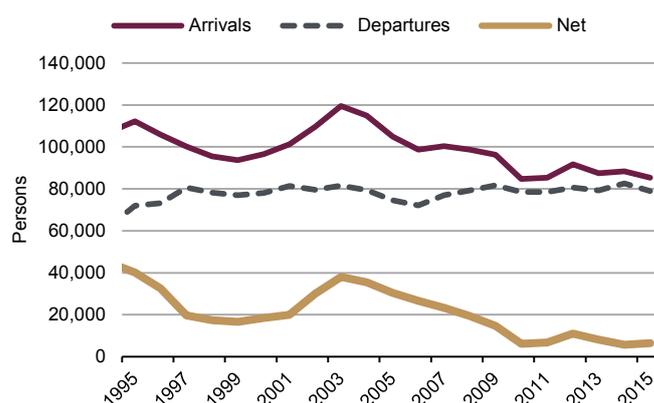
Net interstate migration

Long term trends

There has been considerable variation in net interstate migration (NIM) over time, mainly driven by change in the number of arrivals (Figure 6). While the number of people moving from Queensland to live elsewhere in Australia increased in the 1990s, there has been negligible change in the overall numbers since that time.

NIM reached record low levels in 2013–14, adding only 5,800 persons to the Queensland population. In 2014–15 NIM increased marginally, adding 6,400 persons to the Queensland population. There have been two downward movements in NIM in the past few decades. The first decline occurred in the late 1990s and was a result of both an increase in departures and a decrease in arrivals. The second decline has taken place in the last decade and has been driven by declining numbers of arrivals to Queensland from elsewhere in Australia.

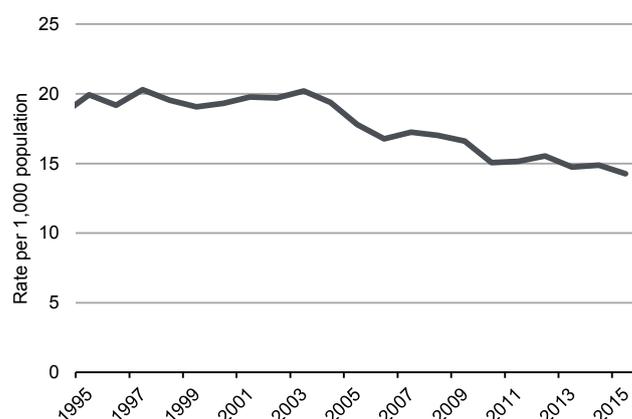
Figure 6 Interstate migration, at 30 June, Queensland



Source: ABS 3101.0, *Australian demographic statistics*

The downward trend in interstate arrivals to Queensland in the last decade has coincided with a decline in the overall rate of interstate movement within Australia. Figure 7 shows that the crude rate of interstate movement within Australia has declined from 20 to 14 per 1,000 population over this time period.

Figure 7 Crude interstate migration rate^(a), at 30 June, Australia



(a) Total interstate movements per 1,000 population.

Source: ABS 3101.0, *Australian demographic statistics*