

**QUEENSLAND GOVERNMENT AND
AUSTRALIA BUREAU OF STATISTICS
POPULATION PROJECTIONS (2008 editions):
A COMPARISON**

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1. Introduction

Projections of the Queensland population are published by both the Queensland State Government and the Commonwealth Government Australian Bureau of Statistics (ABS) twice every five years. Queensland Government data are generated for Queensland and statistical divisions, while ABS data are produced for Queensland, the Brisbane Statistical Division and the remainder of Queensland.

Both organisations model future populations using cohort component projection techniques, both make assumptions regarding future levels of the components of population change (fertility, mortality, overseas migration and internal migration), and both release low, medium and high projection series to provide for an envelope of possible outcomes (with the medium series being the preferred series in both cases).

However, the Queensland Government and the ABS projection cohort component models incorporate different modelling processes, and importantly, each organisation develops dissimilar assumptions on the future movements in the components of population change. As such, there are two different sets of population projection numbers available in the public domain.

In late 2008, both the Queensland Government (Queensland Government, 2008a) and the ABS (Australian Bureau of Statistics, 2008) published updated population projection data for Queensland based on the results of the 2006 Census of Population and Housing and the latest available intelligence on fertility, mortality and migration.

This research paper explores the different governance arrangements and projection methodologies used by each organisation to produce these data. Details are provided on the different assumptions made on the future levels of fertility, mortality, interstate migration and overseas migration. Finally, the projection results are analysed.

2. Governance Arrangements

2.1 Queensland Government

The 2008 edition Queensland Government population projections were produced under a collaborative whole-of-government project. All Queensland Government agencies were invited to nominate a delegate to participate in the process. Nominated delegates formed the Queensland Government Population Projections Advisory Group, chaired by the Queensland Treasury Office of Economic and Statistical Research (OESR).

Agencies represented on the advisory group were the Queensland Government departments of Infrastructure and Planning; Natural Resources and Water; Main Roads; Emergency Services; Housing; Corrective Services; Education, Training and the Arts; Mines and Energy; Health; Tourism, Regional Development and Industry; Child Safety; Communities; and the Premier and Cabinet. The Environmental Protection Agency, Commission for Children and Young People and Child Guardian, and Queensland Police Service were also represented. Valuable demographic input was provided by the Queensland Centre for Population Research (QCPR) at the University of Queensland.

A Background Research Paper (Queensland Government, 2008b) outlining the latest available intelligence on fertility, mortality and migration trends was developed to assist the advisory group in setting the assumptions necessary to produce the projections of the Queensland and statistical division populations.

The role of the advisory group was to:

- provide expert input to the assumptions used in the model for the State and Statistical Division level population projections;
- recommend the State and Statistical Division level population projections; and
- disseminate, promote and assist in the use of the projections data.

A Population Projections Working Group (a sub-group of the advisory group) was formed from demographic experts from OESR, the Planning Information and Forecasting Unit of the Queensland Department of Infrastructure and Planning, and the Queensland Department of Communities. The working group was made responsible for the preparation of the population projections based on assumptions determined by the advisory group.

The Planning Information and Forecasting Unit provided critical intelligence on future land supply and major projects to inform the assumptions for migration, particularly at the statistical division level.

2.2 Australian Bureau of Statistics

The 2008 edition Australian Bureau of Statistics (ABS) population projections were produced by the ABS Demography Section.

ABS states that “the process of developing population projections involves research, analysis, consultation and computation. Analysis of demographic trends, research into the determinants of population growth and distribution, and consultation with various individuals and government department representatives at the national and state levels are necessary to formulate the various assumptions and to ensure their general relevance for the projection period. Consultation occurred from May to July 2008, following which assumptions for the population projections were finalised” (Australian Bureau of Statistics, 2008, p. 89).

3. Projection Methodologies

Both Queensland Government and ABS employ the cohort-component methodology to project the future population. This method produces projections by single year of age and by sex for each year of the projection period, adding projected births and in-migration and subtracting deaths and out-migration for each year into the future.

Queensland Government projections are produced for Queensland and statistical divisions, and ABS projections are generated for Queensland, the Brisbane Statistical Division and remainder of Queensland, for 30 June of each year. Queensland Government 2008 edition data are available for the years 2006 to 2056 at the state level and from 2006 to 2031 at sub-state level. ABS data are available for the years 2007 to 2056 at both state and sub-state levels.

There are inherent difficulties in predicting future demographic events and trends. As a consequence, both the Queensland Government and ABS produce a number of projection series to indicate the most likely range of outcomes that may eventuate. The Queensland Government releases three different projection series (low, medium and high) while ABS generates 72 projection series and publish three main data series (A, B and C) which are more generally termed low (Series C), medium (Series B) and high (Series A).

3.1 The Queensland Government model (POPSTAR)

The Queensland Government uses the POPSTAR (Population Projections for a State/Territory And its Regions) population projection model, developed by the Queensland Centre for Population Research (QCPR) at the University of Queensland. POPSTAR is a state-of-the-art multi-regional model for states and territories and their regions.

The multi-regional dimension of the model is delivered in three important ways:

- Migration rates based on data from the Census of Population and Housing are used for internal migration, rather than net flows, avoiding the potential problem inherent with the use of net migration levels, where some age groups (and indeed whole populations) may be reduced to zero.
- Projected regional populations at each year of the projection period become populations at risk of migration for subsequent years, adding a dynamic component to the modelling process.
- Assumed future internal migration rates are adjusted to account for land supply and major project intelligence.

The POPSTAR model projects the Queensland and statistical division populations simultaneously each year into the future. For each year, the model adjusts the statistical division populations by single year of age and sex to sum to the Queensland population, before proceeding to project the next year.

3.2 The ABS model

ABS also utilises a cohort-component population projection model. However, in comparison to the migration rate method used by POPSTAR, the ABS model uses net migration levels for Australia and each state and territory, and each capital city and balance of state in each state and territory. The disadvantage with this method is that migration flows between regions are not directly sensitive to changes to the quantum and age structures of regional populations over the projection period.

The ABS model (similarly to the POPSTAR model) takes the resulting population projections for each year for states and territories (by single year of age and sex) and adjusts these to sum to the Australian figures, and capital city and balance of state projections are then adjusted to sum to their respective state and territory projections.

4. Assumptions

This section details the fertility, mortality, overseas migration and interstate migration assumptions made by the Queensland Government and ABS for the low, medium and high projection series at the Queensland level. Due to Queensland Government assumptions being made from the year ending 30 June 2007 and ABS assumptions being made from the year ending 30 June 2008, comparisons are made from 2008 onwards.

4.1 Base population

Queensland Government used the preliminary re-based 30 June 2006 estimated resident population (ERP) for Queensland as the base-line for the projections. ABS used the preliminary Queensland ERP at 30 June 2007 for the base.

4.2 Fertility

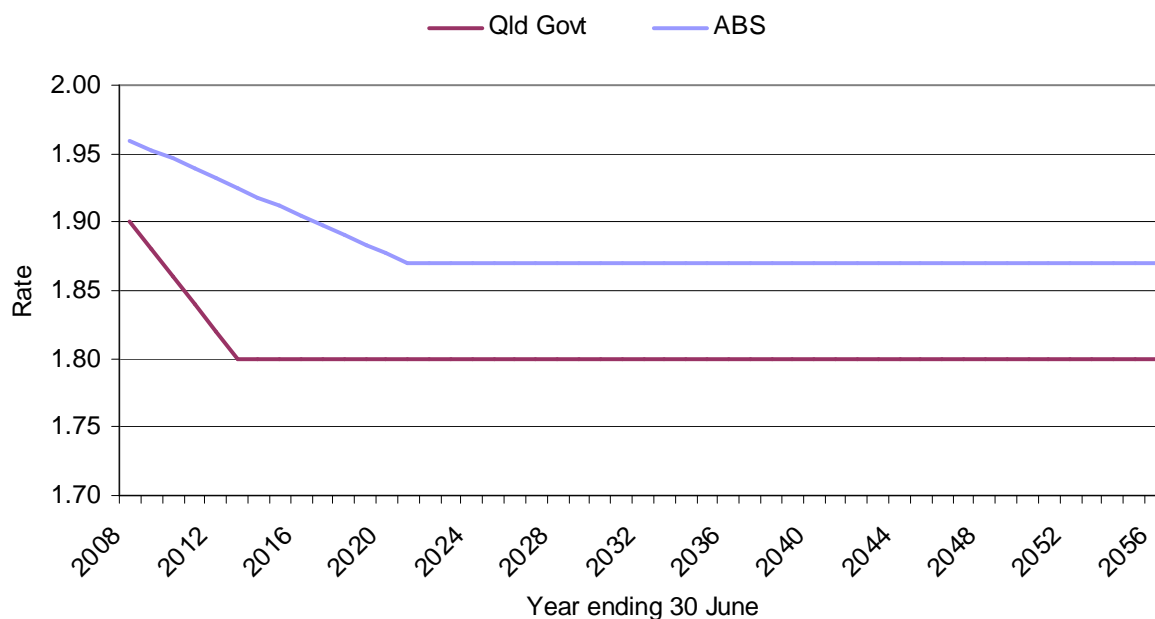
Table 1 shows the low, medium and high series assumptions made by the Queensland Government and ABS on the future total fertility rates in Queensland.

Table 1: Fertility assumptions, Queensland Government and ABS, Queensland, 2007–08 to 2055–56

| Series | Qld Government | ABS |
|--------|---|---|
| Low | Total fertility rate (TFR) of 1.80 in 2007–08 to decline linearly to 1.70 within five years, then to remain constant. | TFR to decline to 1.66 by 2021, and to remain constant thereafter. |
| Medium | TFR of 1.90 in 2007–08 to decline linearly to 1.80 within five years, then to remain constant. | TFR to decline to 1.87 by 2021, and to remain constant thereafter. |
| High | TFR of 1.95 in 2007–08 to increase linearly to 2.00 within five years, and then to remain constant. | TFR to increase to 2.07 by 2021, and to remain constant thereafter. |

The ABS medium assumption is significantly more optimistic compared with the Queensland Government assumption (Figure 1). This results in a considerably larger number of projected children and young persons in the ABS data.

Figure 1: Assumed total fertility rates, Queensland, medium series, Queensland Government and ABS, 2007–08 to 2055–56



4.3 Mortality

Both the Queensland Government and ABS make assumptions about future levels of male and female life expectancies, which are then converted within each projection model to mortality rates by single year of age and sex. Table 2 shows the assumptions made by the Queensland Government and ABS for Queensland for the low, medium and high series.

It should be noted that ABS uses the same assumption (called the medium assumption) for both the low and medium series, based on a declining improvement in life expectancy. An assumption (called the high assumption) based on constant improvement in life expectancy is used for the high projection series.

Queensland Government is considerably more optimistic about future improvements in life expectancy compared with ABS, and has assumed constant improvement in all three projection series. This is in line with the historical trend of steady improvement over the last century. There is currently no indication of a slowing in life expectancy improvements in Queensland or Australia.

The ABS medium mortality assumption (used for both the low and medium projection series) assumes male and female life expectancy at birth will increase at a constant rate until 2011. After 2011 it is assumed that, while life expectancy will improve, this will occur at a declining rate.

Table 2: Mortality assumptions, Queensland Government and ABS, Queensland, 2007–08 to 2055–56

| Series | Qld Government | ABS |
|--------|---|--|
| Low | Constant improvement in male and female life expectancies to reach 85.4 years and 88.4 years respectively by 2055–56. | Declining improvement in male and female life expectancies to reach 85.0 years and 88.0 years respectively by 2055-56. |
| Medium | Constant improvement in male and female life expectancies to reach 89.3 years and 91.2 years respectively by 2055–56. | Declining improvement in male and female life expectancies to reach 85.0 years and 88.0 years respectively by 2055-56. |
| High | Constant improvement in male and female life expectancies to reach 94.0 years and 96.3 years respectively by 2055–56. | Constant improvement in male and female life expectancies to reach 93.9 years and 96.0 years respectively by 2055-56. |

4.4 Interstate migration

Table 3 and Figure 2 show the range of assumptions (low, medium and high) made by the Queensland Government and ABS on the future levels of net interstate migration.

The Queensland Government medium assumption was for an increase in net interstate migration in the short term, followed by a gradual easing in the long term. Migration rates, based on results from the 2006 Census of Population and Housing, when applied to the projected population, resulted in declining net interstate migration levels over the latter half of the projection period. This is a direct result of a higher projected growth rate for the Queensland population (the population at risk of departing Queensland to an interstate destination) compared with the remainder of Australia (the population at risk of arriving in Queensland from an interstate source).

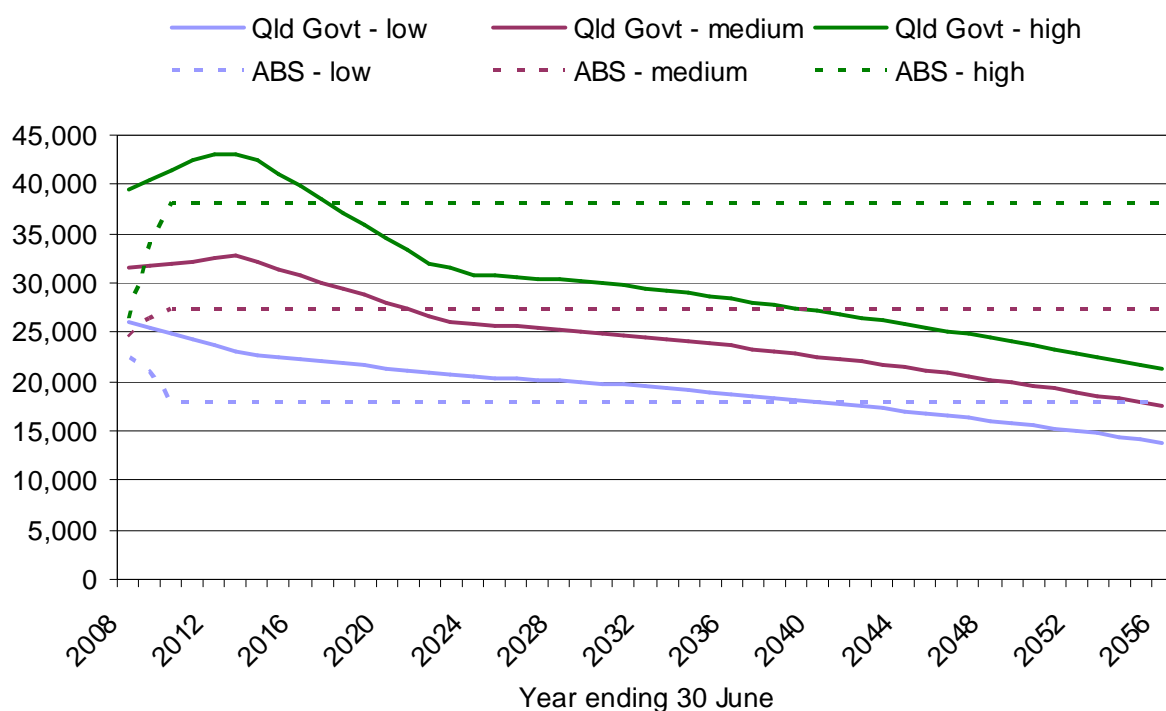
The long-term ABS medium assumption is for a constant net annual gain of 27,500 persons. This assumed net level, while based on historical and current trends, is not directly sensitive to the projected population increase over the projection period in Queensland from 4.1 million to 8.7 million persons (the source of interstate departures from Queensland), or in the remainder of Australia from 16.6 million to 26.7 million persons (the source of interstate arrivals to Queensland).

The medium series assumptions made by each agency (in 2008) for increasing levels in the short term were based on data available at that time which indicated that levels were increasing. However, at the time of the publication of this research paper (in 2009), more recent data was available which revealed a turning point in net interstate migration, with actual levels easing after a short period of recovery.

Table 3: Interstate migration assumptions, Queensland Government and ABS, Queensland, 2007–08 to 2055–56

| Series | Qld Government | ABS |
|--------|---|---|
| Low | Net interstate migration of 26,000 persons in 2007–08 to decrease to 23,000 by 2012–13, then to 20,700 by 2022–23. Migration rates are then applied with the net figure declining to 13,900 persons by 2055–56. | Net interstate migration of 22,500 persons in 2007-08, declining to 21,000 in 2008-09, then remaining constant at 18,000 persons from 2009-10. |
| Medium | Net interstate migration of 31,500 persons in 2007–08 increasing to 32,750 by 2012–13, then decreasing to 26,000 by 2022–23. Migration rates are then applied with the net figure declining to 17,600 by 2055–56. | Net interstate migration of 24,500 persons in 2007-08, increasing to 26,500 in 2008-09, then remaining constant at 27,500 persons from 2009-10. |
| High | Net interstate migration of 39,500 persons in 2007–08 increasing to 43,100 by 2012–13, then decreasing to 31,500 by 2022–23. Migration rates are then applied with the net figure declining to 21,200 persons by 2055–56. | Net interstate migration of 26,500 persons in 2007-08, increasing to 34,000 in 2008-09, then remaining constant at 38,000 persons from 2009-10. |

Figure 2: Assumed net interstate migration by projection series, Queensland, Queensland Government and ABS, 2007–08 to 2055–56



4.5 Overseas migration

Table 4 and Figure 3 show the range of assumptions (low, medium, high) made by the Queensland Government and ABS on the future levels of net overseas migration.

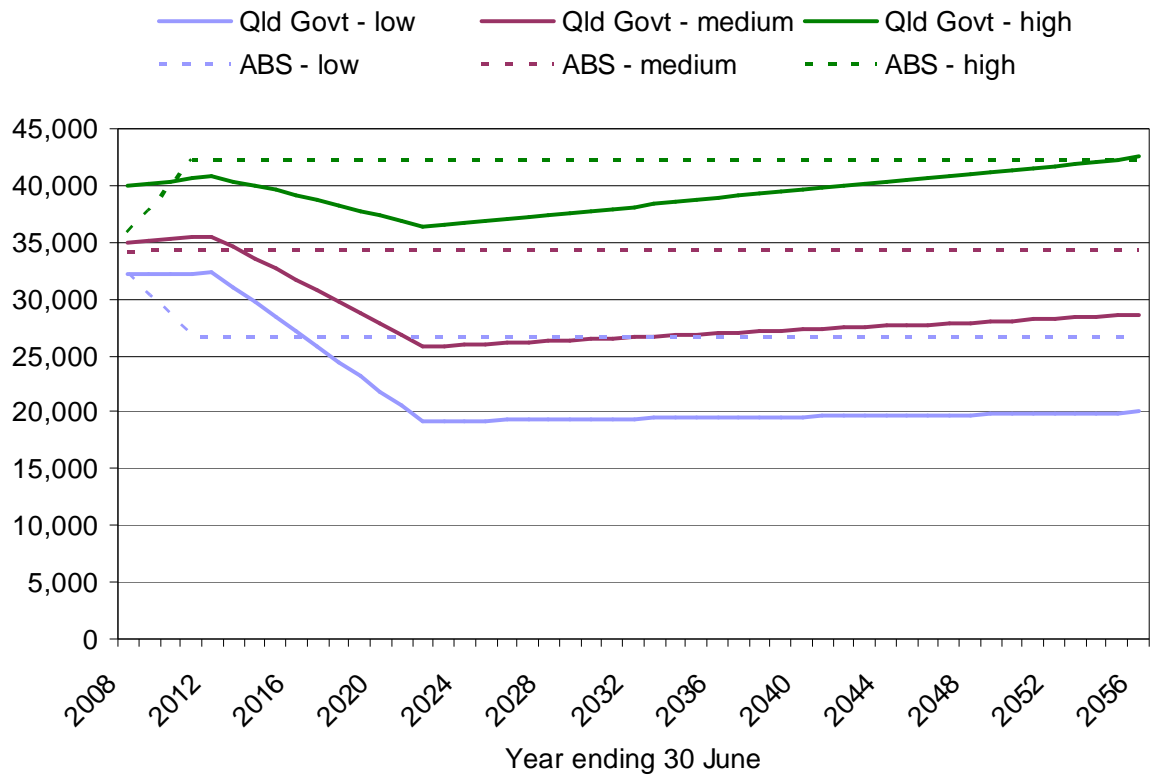
Both the Queensland Government and ABS have developed net overseas migration assumptions for Queensland by firstly making assumptions at the national level, and secondly making assumptions about the Queensland share.

There are two major differences between the Queensland Government and ABS assumptions. Firstly, the Queensland Government assumptions at the national level are significantly less optimistic than ABS across each of the three projection series. This is based on the view that while net overseas migration has reached record levels in recent years at the national level, there are insufficient data points to strongly support a paradigm shift. Secondly, Queensland Government has assumed that the Queensland share of national overseas migration will increase over the projection period as the Queensland share of national population increases.

Table 4: Overseas migration assumptions, Queensland Government and ABS, Queensland, 2007–08 to 2055–56

| Series | Qld Government | ABS |
|--------|---|---|
| Low | Net overseas migration (NOM) of 170,000 persons for Australia until 2011–12, then to decline linearly to 100,000 by 2021–22, then remaining constant. Queensland’s share of Australia’s NOM to start at 18.9% and increase to 20% across the projection period. | NOM for Qld to decrease to 26,600 people per year by 2010-11 (140,000 for Australia), and to remain constant thereafter) (18.9% share of Australian NOM for first two years, 19.0% thereafter). |
| Medium | NOM of 185,000 persons for Australia until 2011–12, then to decline linearly to 130,000 by 2021–22, then remaining constant. Queensland’s share to start at 18.9% and increase to 22% across the projection period. | NOM for Qld of 34,020 people for 2007-08 and 2008-09, then 34,200 people per year from 2009-10 to the end of the projection period (180,000 for Australia) (18.9% share of Australian NOM for first two years, 19.0% thereafter). |
| High | NOM of 200,000 persons for Australia until 2011–12, then to decline linearly to 170,000 by 2021–22, then remaining constant. Queensland’s share to start at 20% and then increase to 25% across the projection period. | NOM for Qld to increase to 41,800 people per year by 2010-11 (220,000 for Australia), and to remain constant thereafter) (18.9% share of Australian NOM for first two years, 19.0% thereafter). |

Figure 3: Assumed net overseas migration by projection series, Queensland Government and ABS, Queensland, 2007–08 to 2055–56



5. Comparison of Results

Table 5 summarises the broad relationships (whether lower or higher) between the Queensland Government and ABS assumptions for the low, medium and high projection series at the Queensland level. Similar trends are evident in the assumptions made by each agency for the Brisbane Statistical Division.

Table 5: Broad differences in assumptions, Queensland Government and ABS, Queensland

| Assumption | Agency | Series | | |
|------------------------------|----------|--------|--------|--------|
| | | Low | Medium | High |
| Fertility | Qld Govt | higher | lower | lower |
| | ABS | lower | higher | higher |
| Mortality (life expectancy)* | Qld Govt | higher | higher | higher |
| | ABS | lower | lower | lower |
| Interstate migration | Qld Govt | lower | lower | lower |
| | ABS | higher | higher | higher |
| Overseas migration | Qld Govt | lower | lower | lower |
| | ABS | higher | higher | higher |

* Mortality in this table is represented by life expectancy. The higher life expectancy assumptions made by Queensland Government translate directly to lower overall mortality rates.

5.1 Queensland

For Queensland, the different assumptions made by each agency have a profound effect on the projected population data published by each agency for all three projection series.

Table 6 shows the respective projected populations under the three projection series and the absolute and percentage differences over the projection period. These differences are less significant in the short term, but increase in magnitude over the long term. The differences are below 1% for all three series for the first 10 years of the projection period. By 2026, the percentage differences remain comparatively low, ranging between 1.8% and 2.5%. These differences then widen at a faster rate, with a range of 6.6% to 9.4% by the end of the projection period (2056). In the case of the Queensland population in 2056 under the medium series, the ABS projected population of 8.7 million persons is significantly higher than the Queensland Government projected figure of 8.0 million persons.

Table 7 shows the respective projected average annual population growth rates for each five-year period from 2006 to 2056 under the three projection series. The data show that projected rates of growth decline and the percentage point gap narrows slightly between the Queensland Government and ABS projections, over the projection period.

Table 6: Projected populations and differences, Queensland Government and ABS projections, Queensland

| As at 30 June | Qld Govt | ABS | Difference (QG - ABS) | % Difference (QG - ABS) |
|----------------------|-----------|------------|--------------------------|----------------------------|
| LOW SERIES | | | | |
| 2006 | 4,091,546 | 4,090,908 | 638 | 0.0 |
| 2011 | 4,483,373 | 4,509,996 | -26,623 | -0.6 |
| 2016 | 4,862,748 | 4,888,372 | -25,624 | -0.5 |
| 2021 | 5,198,644 | 5,250,016 | -51,372 | -1.0 |
| 2026 | 5,495,649 | 5,595,238 | -99,589 | -1.8 |
| 2031 | 5,767,715 | 5,923,642 | -155,927 | -2.6 |
| 2036 | 6,011,863 | 6,228,933 | -217,070 | -3.5 |
| 2041 | 6,229,246 | 6,511,182 | -281,936 | -4.3 |
| 2046 | 6,423,196 | 6,772,053 | -348,857 | -5.2 |
| 2051 | 6,597,392 | 7,012,301 | -414,909 | -5.9 |
| 2056 | 6,754,654 | 7,235,182 | -480,528 | -6.6 |
| MEDIUM SERIES | | | | |
| 2006 | 4,091,546 | 4,090,908 | 638 | 0.0 |
| 2011 | 4,567,713 | 4,562,153 | 5,560 | 0.1 |
| 2016 | 5,040,326 | 5,052,437 | -12,111 | -0.2 |
| 2021 | 5,478,714 | 5,546,459 | -67,745 | -1.2 |
| 2026 | 5,884,390 | 6,037,991 | -153,601 | -2.5 |
| 2031 | 6,273,883 | 6,519,144 | -245,261 | -3.8 |
| 2036 | 6,644,820 | 6,983,568 | -338,748 | -4.9 |
| 2041 | 6,998,542 | 7,434,240 | -435,698 | -5.9 |
| 2046 | 7,337,217 | 7,876,322 | -539,105 | -6.8 |
| 2051 | 7,662,667 | 8,311,095 | -648,428 | -7.8 |
| 2056 | 7,976,189 | 8,738,890 | -762,701 | -8.7 |
| HIGH SERIES | | | | |
| 2006 | 4,091,546 | 4,090,908 | 638 | 0.0 |
| 2011 | 4,672,798 | 4,618,152 | 54,646 | 1.2 |
| 2016 | 5,279,587 | 5,230,432 | 49,155 | 0.9 |
| 2021 | 5,868,628 | 5,878,570 | -9,942 | -0.2 |
| 2026 | 6,438,340 | 6,553,311 | -114,971 | -1.8 |
| 2031 | 7,007,639 | 7,242,232 | -234,593 | -3.2 |
| 2036 | 7,576,934 | 7,940,114 | -363,180 | -4.6 |
| 2041 | 8,149,791 | 8,652,506 | -502,715 | -5.8 |
| 2046 | 8,728,382 | 9,387,407 | -659,025 | -7.0 |
| 2051 | 9,311,912 | 10,145,067 | -833,155 | -8.2 |
| 2056 | 9,898,848 | 10,921,311 | -1,022,463 | -9.4 |

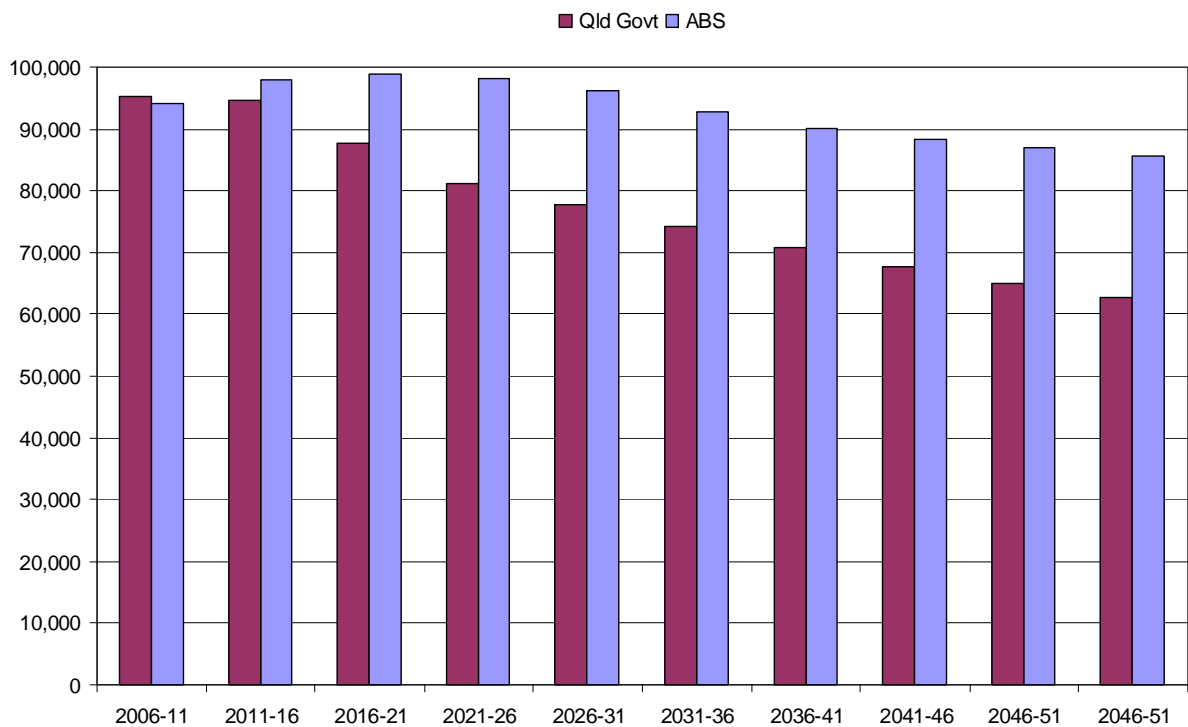
Table 7: Projected average annual growth rates and percentage point differences, Queensland Government and ABS projections, Queensland

| Period | Qld Govt | ABS | % point difference (QG - ABS) |
|----------------------|----------|------|-------------------------------|
| LOW SERIES | | | |
| 2006-11 | 1.85 | 1.97 | -0.12 |
| 2011-16 | 1.64 | 1.62 | 0.02 |
| 2016-21 | 1.34 | 1.44 | -0.10 |
| 2021-26 | 1.12 | 1.28 | -0.16 |
| 2026-31 | 0.97 | 1.15 | -0.18 |
| 2031-36 | 0.83 | 1.01 | -0.18 |
| 2036-41 | 0.71 | 0.89 | -0.18 |
| 2041-46 | 0.62 | 0.79 | -0.17 |
| 2046-51 | 0.54 | 0.70 | -0.16 |
| 2051-56 | 0.47 | 0.63 | -0.16 |
| MEDIUM SERIES | | | |
| 2006-11 | 2.23 | 2.20 | 0.03 |
| 2011-16 | 1.99 | 2.06 | -0.07 |
| 2016-21 | 1.68 | 1.88 | -0.20 |
| 2021-26 | 1.44 | 1.71 | -0.27 |
| 2026-31 | 1.29 | 1.55 | -0.26 |
| 2031-36 | 1.16 | 1.39 | -0.23 |
| 2036-41 | 1.04 | 1.26 | -0.22 |
| 2041-46 | 0.95 | 1.16 | -0.21 |
| 2046-51 | 0.87 | 1.08 | -0.21 |
| 2051-56 | 0.81 | 1.01 | -0.20 |
| HIGH SERIES | | | |
| 2006-11 | 2.69 | 2.45 | 0.24 |
| 2011-16 | 2.47 | 2.52 | -0.05 |
| 2016-21 | 2.14 | 2.36 | -0.22 |
| 2021-26 | 1.87 | 2.20 | -0.33 |
| 2026-31 | 1.71 | 2.02 | -0.31 |
| 2031-36 | 1.57 | 1.86 | -0.29 |
| 2036-41 | 1.47 | 1.73 | -0.26 |
| 2041-46 | 1.38 | 1.64 | -0.26 |
| 2046-51 | 1.30 | 1.56 | -0.26 |
| 2051-56 | 1.23 | 1.49 | -0.26 |

Figure 4 shows the projected average annual change in population for each five-year period from 2006 to 2056 in Queensland under the Queensland Government and ABS medium growth scenarios. The considerable divergence in growth between the Queensland Government and ABS population projections is largely a function of the considerably different fertility and net overseas migration assumptions.

A similar trend of divergence is also evident under the low and high projection series.

Figure 4: Average annual projected population change, medium series, Queensland Government and ABS, Queensland



5.2 Brisbane Statistical Division

Queensland Government and ABS projection results for the Brisbane Statistical Division (BSD) can be compared between 2006 and 2031. Table 8 shows that the absolute differences between projected populations for each of the three projection series over the period 2006 to 2031 follow the same trend evident at the Queensland level. In summary, differences are less significant in the short term, but increase considerably in magnitude over the longer term at the BSD level. The differences range between 0.5% and 1.5% by 2016, slightly higher than for Queensland (ranging between 0.2% and 0.9%). These differences widen at a faster rate between 2016 and 2031, ranging from 4.1% to 6.0% by 2031.

However, compared with the projections for the state as a whole (where there are sizeable differences between the medium and high series from each agency), there are modest differences between the medium and high series for BSD. This is mainly an outcome caused by the low weighting given to land availability in the high series Queensland Government projection. This brings the assumptions closer in line with those used by ABS.

Table 8: Projected populations and differences, Queensland Government and ABS projections, Brisbane Statistical Division

| As at 30 June | Qld Govt | ABS | Difference (QG - ABS) | Difference (QG - ABS) % |
|------------------|-----------|-----------|--------------------------|-------------------------------|
| LOW SERIES | | | | |
| 2006 | 1,820,400 | 1,819,762 | 638 | 0.0 |
| 2011 | 1,969,444 | 1,997,503 | -28,059 | -1.4 |
| 2016 | 2,129,965 | 2,159,215 | -29,250 | -1.4 |
| 2021 | 2,272,001 | 2,314,969 | -42,968 | -1.9 |
| 2026 | 2,395,266 | 2,465,570 | -70,304 | -2.9 |
| 2031 | 2,505,086 | 2,611,347 | -106,261 | -4.1 |
| MEDIUM SERIES | | | | |
| 2006 | 1,820,400 | 1,819,762 | 638 | 0.0 |
| 2011 | 2,004,092 | 2,023,174 | -19,082 | -0.9 |
| 2016 | 2,204,647 | 2,239,036 | -34,389 | -1.5 |
| 2021 | 2,392,069 | 2,459,076 | -67,007 | -2.7 |
| 2026 | 2,564,497 | 2,681,135 | -116,638 | -4.4 |
| 2031 | 2,726,836 | 2,901,984 | -175,148 | -6.0 |
| HIGH SERIES | | | | |
| 2006 | 1,820,400 | 1,819,762 | 638 | 0.0 |
| 2011 | 2,046,307 | 2,047,105 | -798 | 0.0 |
| 2016 | 2,304,244 | 2,316,355 | -12,111 | -0.5 |
| 2021 | 2,559,894 | 2,604,521 | -44,627 | -1.7 |
| 2026 | 2,807,476 | 2,907,955 | -100,479 | -3.5 |
| 2031 | 3,051,472 | 3,221,145 | -169,673 | -5.3 |

Table 9 shows the Queensland Government and ABS projected average annual population growth rates for each five-year period from 2006 to 2031 under the three projection series (low, medium and high). The data show that all projected rates of growth decline over the projection period, and the percentage point gap widens between the Queensland Government and ABS projections, over the projection period.

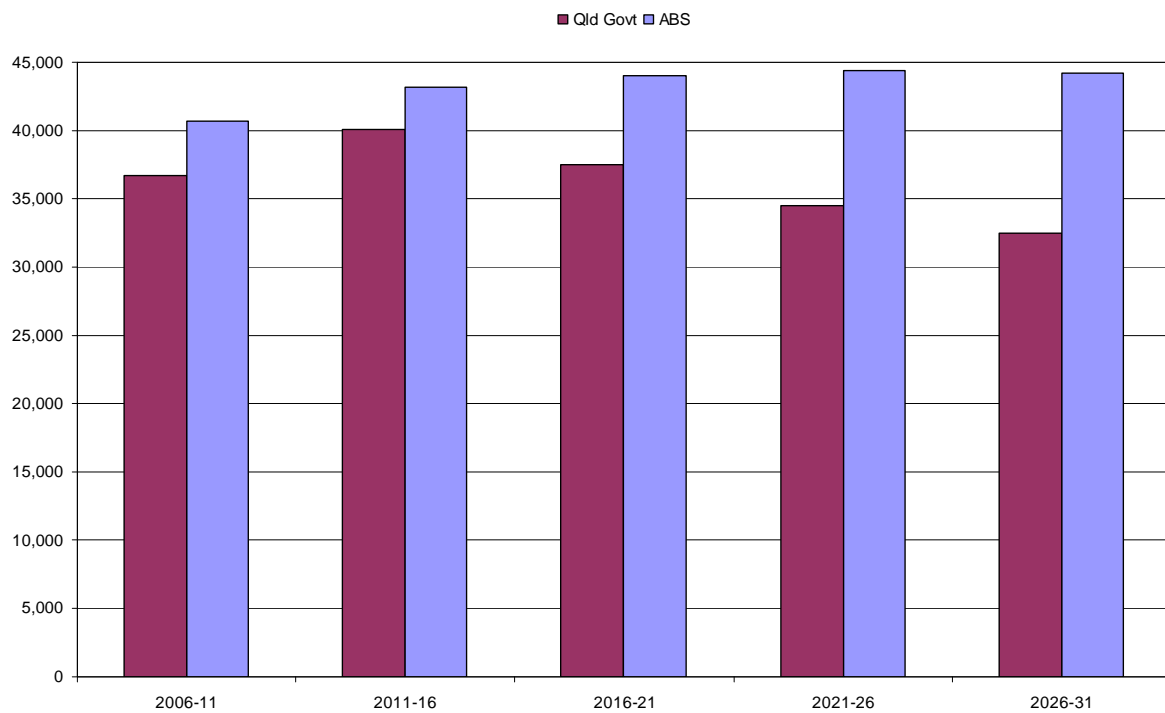
Table 9: Projected average annual growth rates and percentage point differences, Queensland Government and ABS projections, Brisbane Statistical Division

| Period | Qld Govt | ABS | % point difference (QG - ABS) |
|----------------------|----------|------|-------------------------------|
| LOW SERIES | | | |
| 2006-11 | 1.59 | 1.88 | -0.29 |
| 2011-16 | 1.58 | 1.57 | 0.01 |
| 2016-21 | 1.30 | 1.40 | -0.10 |
| 2021-26 | 1.06 | 1.27 | -0.21 |
| 2026-31 | 0.90 | 1.16 | -0.26 |
| MEDIUM SERIES | | | |
| 2006-11 | 1.94 | 2.14 | -0.20 |
| 2011-16 | 1.93 | 2.05 | -0.12 |
| 2016-21 | 1.65 | 1.89 | -0.24 |
| 2021-26 | 1.40 | 1.74 | -0.34 |
| 2026-31 | 1.24 | 1.60 | -0.36 |
| HIGH SERIES | | | |
| 2006-11 | 2.37 | 2.38 | -0.01 |
| 2011-16 | 2.40 | 2.50 | -0.10 |
| 2016-21 | 2.13 | 2.37 | -0.24 |
| 2021-26 | 1.86 | 2.23 | -0.37 |
| 2026-31 | 1.68 | 2.07 | -0.39 |

Figure 5 shows the projected average annual change in population for each five-year period from 2006 to 2031 in the Brisbane Statistical Division under the Queensland Government and ABS medium growth scenarios. The considerable divergence between the Queensland Government and ABS population projections for Brisbane Statistical Division is a consequence of the unilateral incorporation of land supply intelligence by the Queensland Government. This intelligence indicated that land supply will become increasingly constrained in the future, leading to the strong possibility of reduced growth.

A similar trend of divergence is also evident under the low and high projection series.

Figure 5: Average annual projected population change, medium series, Queensland Government and ABS, Brisbane Statistical Division



5.3 Queensland by age group

Figure 6 shows the Queensland population by five-year age group as at 30 June 2006 and projected populations 25 years and 50 years into the future under the Queensland Government and ABS medium series scenarios.

By 2031:

- there are no large differences between the Queensland Government and ABS projected numbers; and
- ABS projects slightly more persons aged 50 years and under (due to a higher fertility assumption) and Queensland Government projects slightly more persons aged over 50 years (mainly due to a more optimistic mortality assumption).

By 2056:

- there are substantial differences between the Queensland Government and ABS projected numbers; and
- ABS projects considerably more children and persons of working age (due to higher fertility and migration assumptions); and
- Queensland Government projects more persons aged 75 years and over, with a much larger population aged 85 years and over (due to a more optimistic mortality assumption).

Figure 6: Projected population by five-year age group, medium series, Queensland Government and ABS, Queensland, 30 June 2031 and 2056

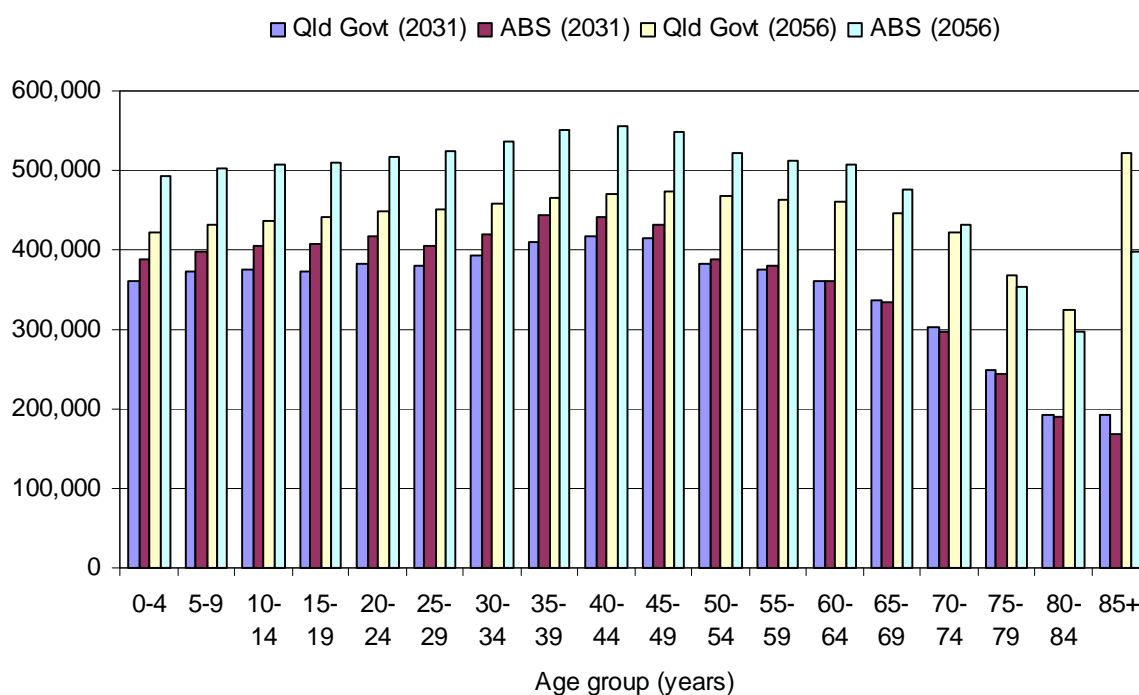


Table 10 compares Queensland Government and ABS projected medium series populations across broad age groups. The data show that ABS projects significantly more persons in all age groups with the exception of the retirees age group (65 years and over).

These differences are a function of three inter-related factors:

- a higher assumed fertility rate made by ABS (compared with Queensland Government);
- higher assumed migration (both interstate and overseas) for the ABS projections (compared with Queensland Government); and
- a more optimistic mortality assumption made by Queensland Government compared with ABS.

ABS projects more children (aged 0 to 14 years) and young persons (aged 15 to 24 years). This is mainly a consequence of the higher assumed fertility, with effects from higher assumed migration (which become more apparent by 2056 compared with 2031).

ABS also projects more persons of working age. By 2031, the number of persons in the younger working age groups (aged 25 to 44 years) is significant and this widens further by 2056. This is a consequence of the coincidence of both the higher fertility and migration (interstate and overseas) assumptions. The difference in the number of persons in the older working age groups (aged 45 to 64 years) is inconsiderable in 2031, but the difference increases dramatically by 2056, as the higher fertility assumption delivers a large cohort of additional persons into this age group.

Queensland Government projects more persons in the retirees (65 years and over) age group in both 2031 and 2056. This is an end result of a much more optimistic mortality assumption.

Table 10: Projected population by broad age group, medium series, Queensland Government and ABS, Queensland, 30 June 2031 and 2056

| Age group | 2031 | | | 2056 | | |
|-------------------------------|-----------|-----------|----------------------|-----------|-----------|----------------------|
| | Qld Govt | ABS | Difference (QG - BS) | Qld Govt | ABS | Difference (QG - BS) |
| Children (0-14 years) | 1,109,859 | 1,191,321 | -81,462 | 1,292,611 | 1,501,218 | -208,607 |
| Young persons (15-24 years) | 756,588 | 824,266 | -67,678 | 890,715 | 1,026,461 | -135,746 |
| Younger workers (25-44 years) | 1,599,190 | 1,709,204 | -110,014 | 1,847,628 | 2,167,088 | -319,460 |
| Older workers (45-64 years) | 1,533,619 | 1,559,074 | -25,455 | 1,864,260 | 2,089,998 | -225,738 |
| Retirees (65 years and over) | 1,274,626 | 1,235,279 | 39,347 | 2,080,974 | 1,954,125 | 126,849 |

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