# National Population Projections: 2011(base)–2061

Embargoed until 10:45am – 19 July 2012

## Key facts

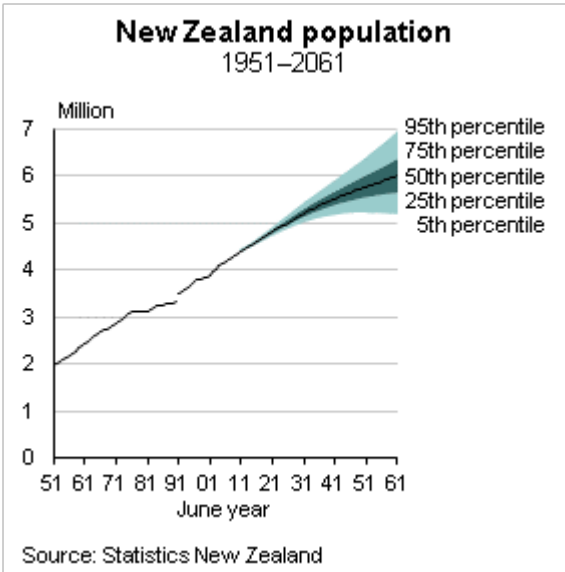
National population projections give an indication of New Zealand's future population.

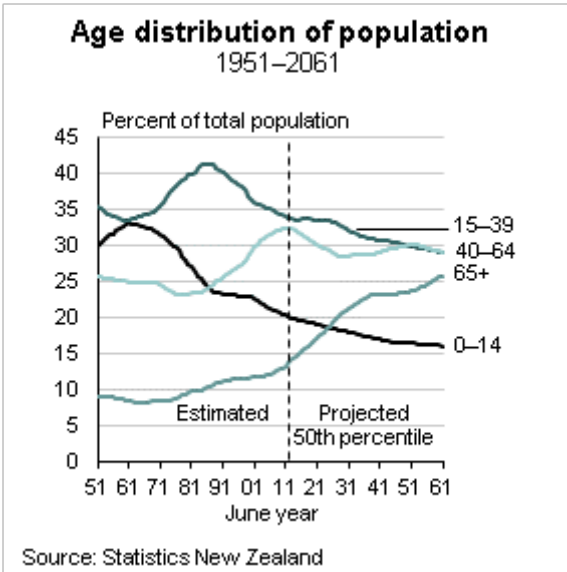
The projections indicate:

- Population growth will slow as New Zealand's population ages.
- The gap between the number of births and deaths will narrow.
- There is roughly a 1 in 3 chance that deaths could exceed births in 2061.

The median projection indicates:

- New Zealand's population (4.4 million in 2012) will increase to 5.4 million in 2036 and 6.0 million in 2061.
- The population aged 65+ (600,000 in 2012) will increase to 1.2 million in 2036 and 1.5 million in 2061.
- The proportion of the population aged 65+ (14 percent in 2012) will increase to 23 percent in 2036 and 26 percent in 2061.




Note: The break in data between 1990 and 1991 denotes a change from the de facto population concept to the resident population concept.


Geoff Bascand
**Government Statistician**


**19 July 2012**


ISSN 1178-0584

# Commentary



## Important advice for using projections

National population projections give an indication of the future population usually living in New Zealand. The projections cover a range of possible outcomes based on different combinations of fertility, mortality, and migration assumptions. Users can make their own judgement as to which projections are most suitable for their purposes.

These projections are not predictions. The projections should be used as an indication of the overall trend, rather than as exact forecasts. The projections are updated every 2–3 years to maintain their relevance and usefulness, by incorporating new information about demographic trends and developments in methods.

At the time of release, the median projection (50th percentile) indicates an estimated 50 percent chance that the actual result will be lower, and a 50 percent chance that the actual result will be higher, than this percentile. Other percentiles indicate the distribution of values (such as projection results or assumptions). For example, the 25th percentile indicates an estimated 25 percent chance that the actual result will be lower, and a 75 percent chance that the actual result will be higher, than this percentile. Shading in graphs indicates the chance that actual results will fall within a certain range. Different shading is used to distinguish different ranges.

The following results highlight the main trends from the projections.

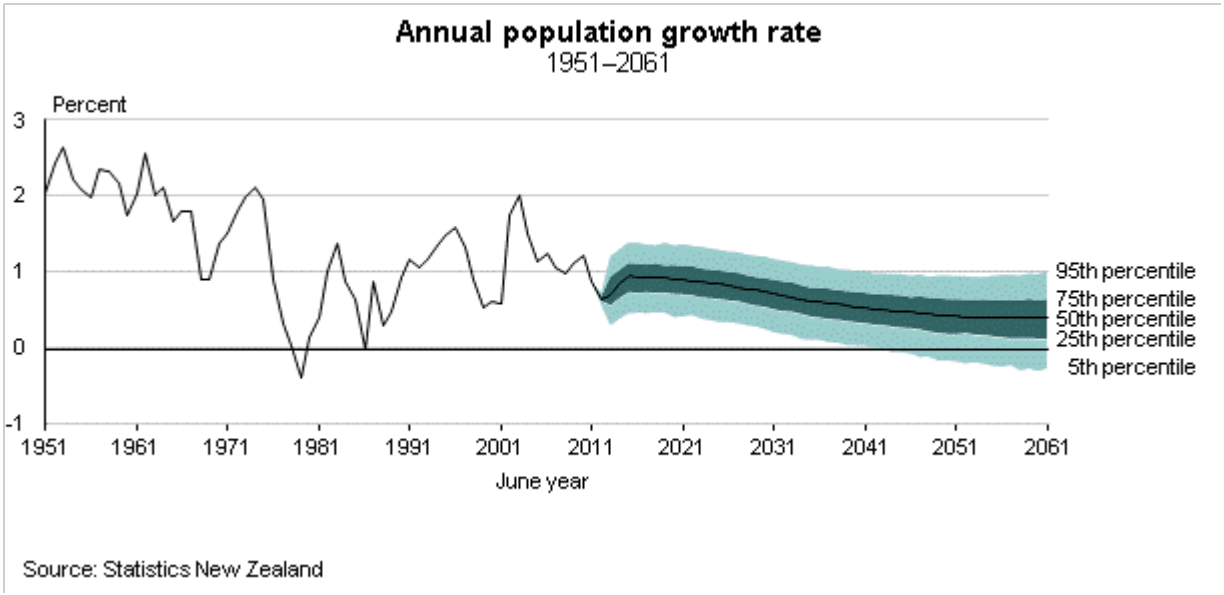
## Slower population growth

Population growth will slow in the future. The median projection indicates that annual population growth will average about:

- 0.9 percent during the 2010s
- 0.8 percent during the 2020s
- 0.6 percent during the 2030s
- 0.5 percent during the 2040s
- 0.4 percent during the 2050s.

There is roughly a 1 in 6 chance that the population will be declining by 2061.

New Zealand's population grew at an average rate of 1.3 percent a year between 1951 and 2012. The growth rate has generally been slowing as fertility rates have fallen and the population age structure has changed. Population growth averaged 2.2 percent during the 1950s but only 0.7 percent during the 1980s. Growth averaged 1.2 percent in the decade ending 2012.

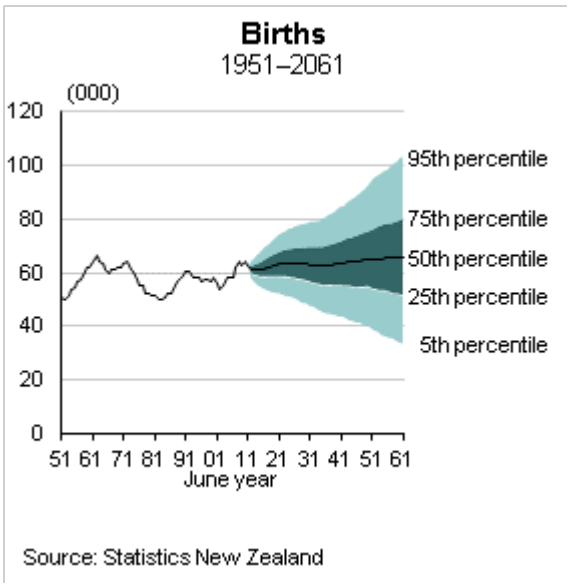


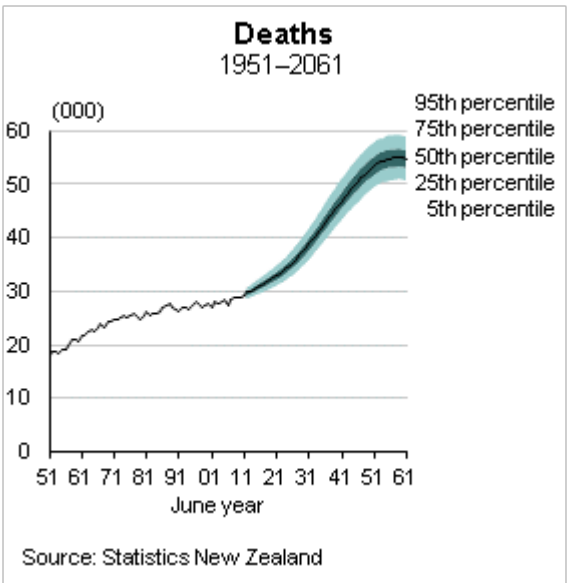

## Narrowing gap between births and deaths

The slower population growth is driven by the narrowing gap between births and deaths. Annual births may increase slightly. From 61,000 in 2012, there is roughly a 3 in 5 chance that births will exceed 61,000 in 2036. There is a similar chance that births will exceed 61,000 in 2061.

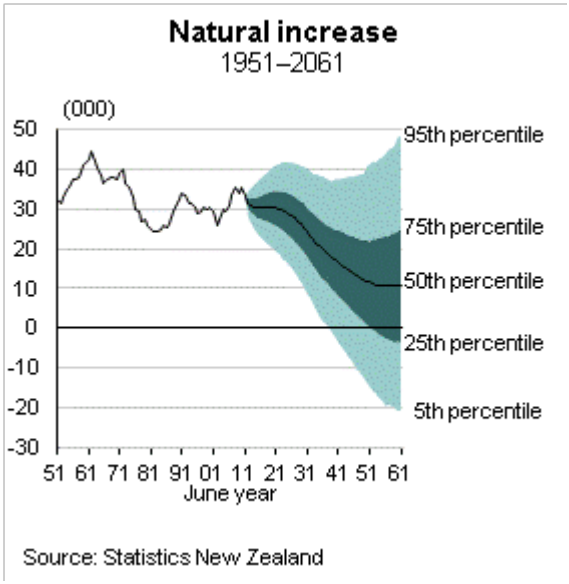
There is, however, considerable uncertainty in the number of births. Future birth numbers depend on the number of women of childbearing age, as well as their fertility rates (how many children they have and the timing of their births). By 2061, there is roughly a 1 in 4 chance that annual births could exceed 80,000. Conversely, by 2061 there is roughly a 1 in 4 chance that annual births could be less than 52,000.

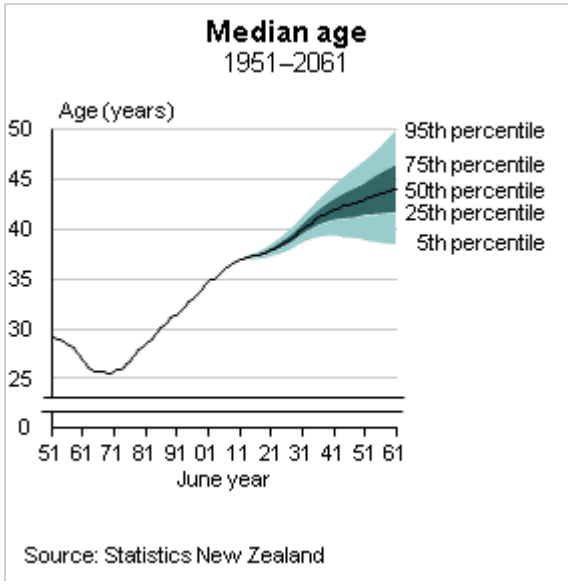
The future number of deaths is more certain. Deaths are expected to increase steadily despite assumed lower death rates and increasing life expectancy. From 30,000 deaths in 2012, it is highly likely that deaths will exceed 40,000 in 2036. It is highly likely deaths will exceed 50,000 after 2051. Deaths will rise as ever greater numbers of people reach the older ages where most deaths occur. Currently, about 3 in 4 male deaths, and 5 in 6 female deaths, occur at ages 65 years and over (65+).




With deaths rising faster than births, annual natural increase (births minus deaths) is likely to decrease. From 31,000 in 2012, there is roughly a 3 in 4 chance that natural increase will be less than 27,000 in 2036. There is a similar chance natural increase will be less than 25,000 in 2061. There is also a small chance of natural decrease (deaths outnumber births) by 2036, but roughly a 1 in 3 chance of natural decrease by 2061.



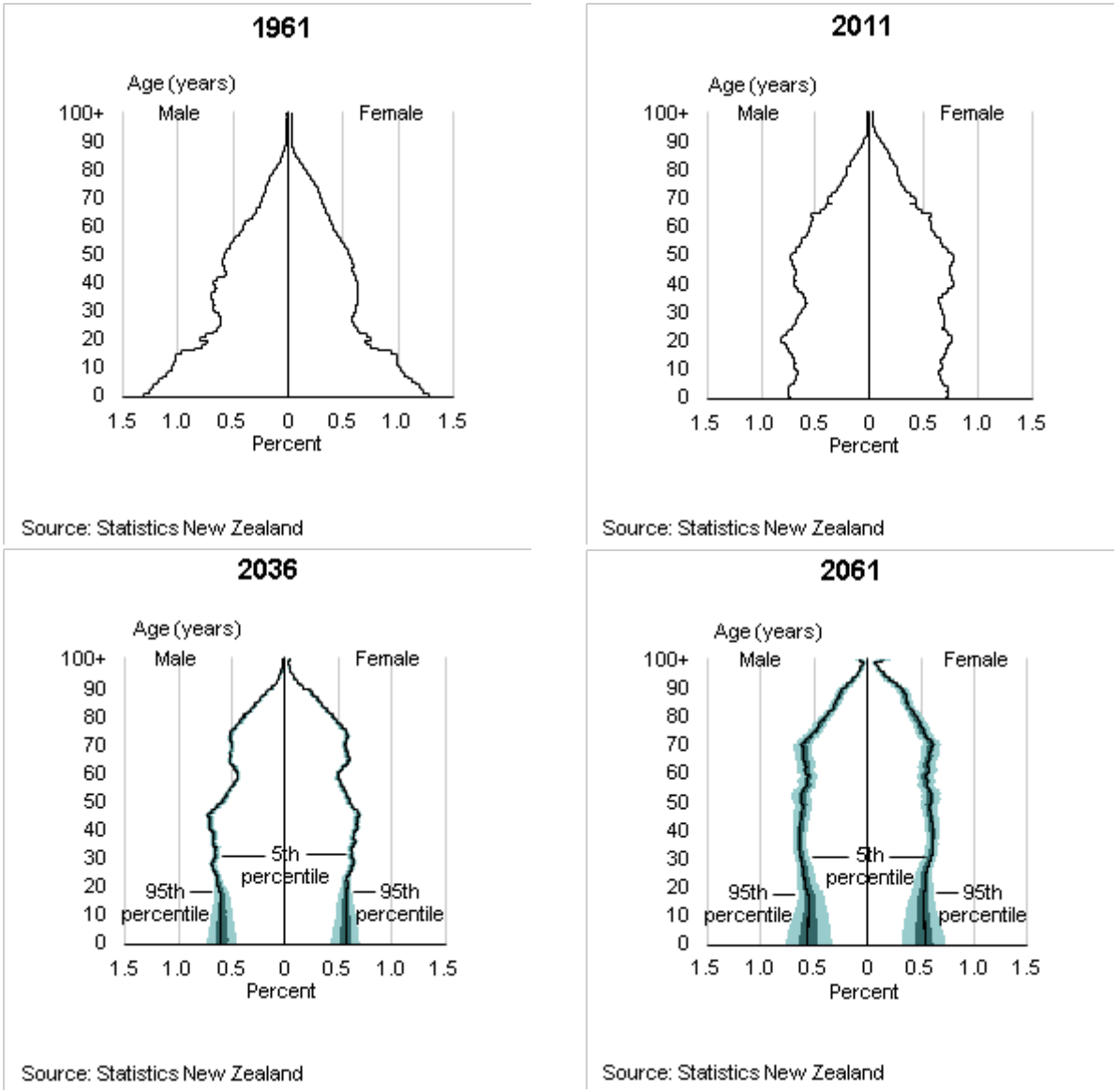




## Ageing population

There will be significant changes in the age structure of the population. The median age of New Zealand's population increased from 26 years in 1971 to 37 years in 2012. It is likely that the median age will exceed 41 years by the late 2030s. Half the population could be older than 44 years by 2061. The gradual ageing reflects the combined impact of people having fewer children (sub-replacement fertility), people living longer, and the large number of people born between 1950 and the early 1970s moving into the older ages (65+).

Population ageing is not caused by the baby boomers, but by the transition to lower birth rates and lower death rates. The projections indicate that once the baby boomers have moved through the age structure, the New Zealand population will not revert to a younger age structure – barring major changes in childbearing patterns (fertility rates).

**Population age-sex pyramids**
1961, 2011, 2036 and 2061

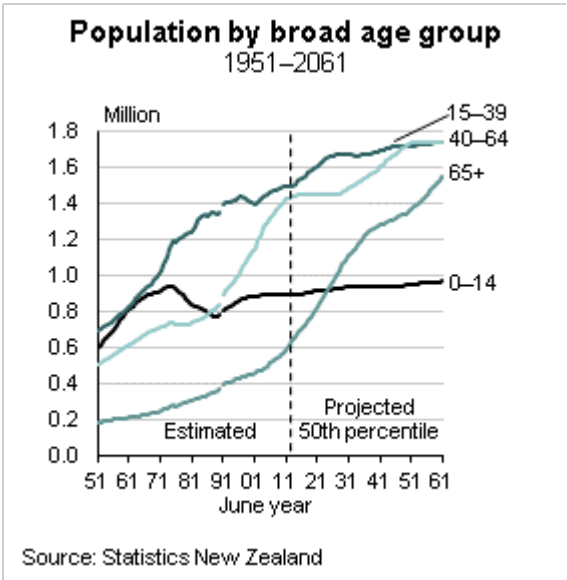



Note: Percentiles shown are 5th, 25th, 50th, 75th, and 95th.

## Slightly more children

The number of children aged 0–14 years peaked at 940,000 in 1974, then decreased steadily to 770,000 in 1989, before generally increasing to 890,000 in 2012. The number of children may increase slightly, reaching 940,000 in 2036 and 970,000 in 2061 (in the median projection). Projections of the number of children are most uncertain because the number of future births is uncertain.

Although the number of children may increase, it will not increase as fast as the older segment of the population. As a result, the proportion of the population aged less than 15 years is likely to decrease. From 1 in 3 of the population during the early 1960s, and 1 in 5 of the population in 2012, it is highly likely that children will account for less than 1 in 5 of the population throughout the projection period (2011–61).




Note: The break in data between 1990 and 1991 denotes a change from the de facto population concept to the resident population concept.

## More people aged 15–64 years

The number of people aged 15–64 years more than doubled from 1.2 million to 2.9 million between 1951 and 2012. It is projected to grow gradually, with the median projection indicating 3.2 million in 2036 and 3.5 million in 2061. Those aged 15–64 years would then make up 58 percent of the total population, compared with 66 percent in 2012.

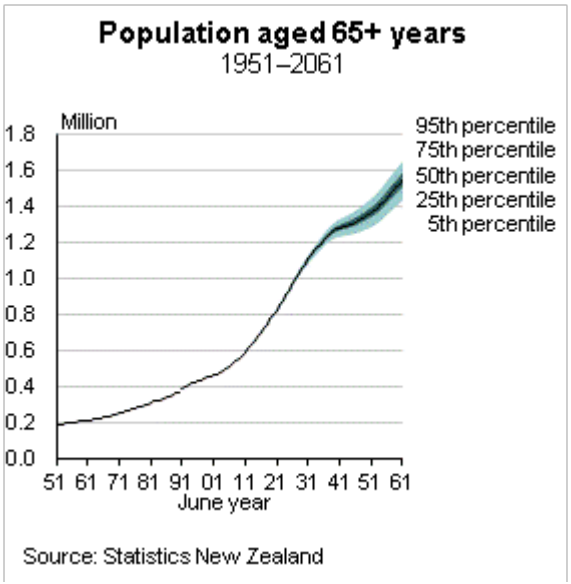
The number of people aged 40–64 years increased rapidly during the 1990s and 2000s as the baby boomers moved into this age group. The increase will slow during the 2010s and 2020s as the number of people entering the age group only slightly exceeds those leaving it.
The median projection indicates that the number of people in this age group (1.43 million in 2012) will increase to 1.54 million in 2036, and 1.74 million in 2061. In 2061, 29 percent of the population would be aged 40–64 years, down from a peak of 32 percent in 2011.

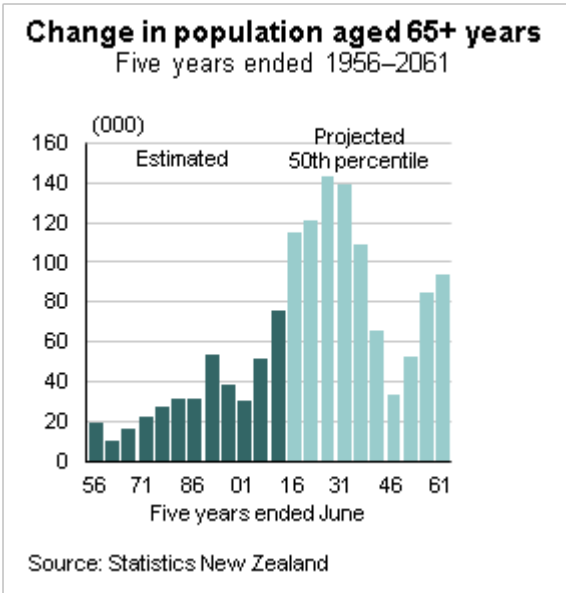
The median projection indicates that the number of people aged 15–39 years (1.50 million in 2012) will increase to 1.67 million in 2036, and 1.74 million in 2061. This age group accounted for about 41 percent of the population in the mid-1980s and 34 percent of the population in 2012. It is expected to account for only 31 percent in 2036 and 29 percent in 2061.

## Fastest growth at older ages

The number of people aged 65+ has doubled since 1980, eclipsing 600,000 in 2012. The number is likely to double again by 2036. It is highly likely that there will be 1.18–1.25 million people aged 65+ in 2036, and 1.44–1.66 million in 2061. The largest growth will occur between 2011 and 2036, as the baby boomers move into the 65+ age group.

By 2031, it is expected that between 20 and 22 percent of New Zealanders will be aged 65+, compared with 13 percent in 2012. By 2061, it is expected that between 22 and 30 percent of the population will be aged 65+.




Note: The break in data between 1990 and 1991 denotes a change from the de facto population concept to the resident population concept.

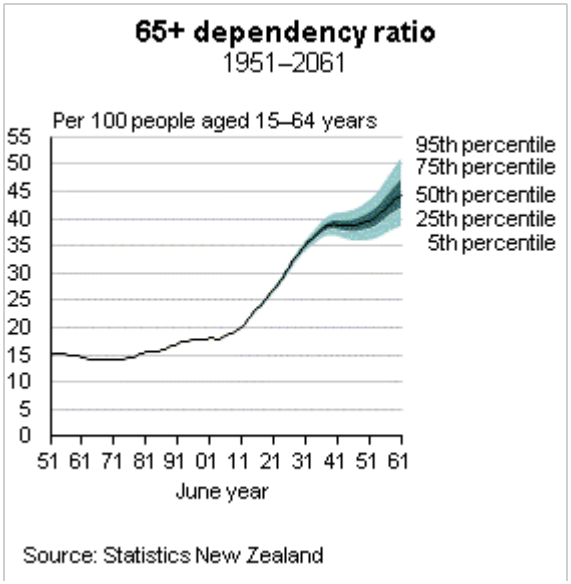
Within the 65+ age group, the number of people aged 85 and over (85+) is expected to increase significantly. From 76,000 in 2012, it is highly likely that there will be 180,000–210,000 people aged 85+ in 2036, and 290,000–430,000 in 2061. By 2061, about 1 in 4 people aged 65+ will be 85+, compared with 1 in 8 in 2012.

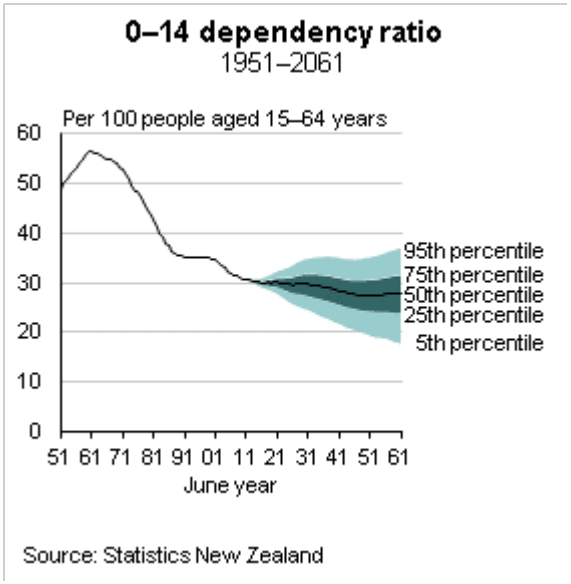
## More aged 65+ relative to those aged 15–64

Dependency ratios relate the number of people in the 'dependent' age groups (defined here as 0–14 and 65+ years) to the 'working-age' population (15–64 years). They are an indicator of changes in New Zealand's age structure. Dependency ratios do not allow for the fact that some people in the working-age population may not be in the workforce, while some people aged 65+ may be in the workforce. In the case of those aged 65+, the term 'dependency' does not necessarily imply financial or economic dependency, as those aged 65+ are generally living longer, are healthier, and are working longer.

The 65+ dependency ratio (the number of people aged 65+ per 100 people aged 15–64 years) increased gradually from 14 per 100 in the mid-1960s to 20 per 100 in 2011. It is projected to increase significantly, with the ratio expected to be in the range 36–39 per 100 in 2036, and 39–51 per 100 in 2061. This means that for every person aged 65+, there will be about 2.6 people aged 15–64 in 2036 and 2.3 in 2061, compared with 5.0 people in 2011 and 7.1 in the mid-1960s.

In contrast, the 0–14 dependency ratio (the number of people aged 0–14 years per 100 people aged 15–64 years) decreased from a peak of 57 per 100 in 1961 to 31 per 100 in 2011. This downward trend will probably continue, with the ratio expected to be in the range 23–35 per 100 in 2036, and 18–37 per 100 in 2061.




The total dependency ratio (sum of the 0–14 and 65+ dependency ratios) reached its lowest level since the mid-1930s in 2008 (50 per 100). It is projected to increase from 51 per 100 in 2011, with the ratio expected to be in the range 61–73 per 100 in 2036, and 66–79 per 100 in 2061. The 65+ dependency ratio will then contribute three-fifths of the total dependency ratio compared with two-fifths in 2011. A total dependency ratio of over 70 per 100 was also experienced around 1960, but then the 65+ dependency ratio contributed about one-fifth of the total dependency ratio.

## Additional 'what if?' scenarios

The projections discussed above cover a range of possible outcomes based on different combinations of fertility, mortality, and migration assumptions. Five additional projections have been derived to explore other scenarios of interest.

The median projection indicates that the population will increase by about 1.6 million people between 2011 and 2061 to 6.0 million. Population growth would be higher if fertility, life expectancy, or net migration (arrivals minus departures) were higher.

### What if fertility was higher?

The population would reach 7 million by 2061 with a total fertility rate of 2.5 births per woman (very high fertility) or net migration exceeding 25,000 a year (very high migration). While these scenarios produce a similar population size, the very high fertility scenario would produce a much younger age structure.

With a total fertility rate of 2.5 births per woman, births would continue to outnumber deaths by 30,000–50,000 between 2011 and 2061. There would be 108,000 births in 2061 under this scenario, compared with 66,000 under the median projection. The number of children would rise by 69 percent over the projection period, compared with 8 percent under the median projection. Population ageing would continue but at a much slower rate, with the median age increasing from 37 years in 2012 to peak at 39 years in 2039, before falling back to 38 years in 2061. By comparison, in the median projection, the median age increases steadily to 44 years in 2061.

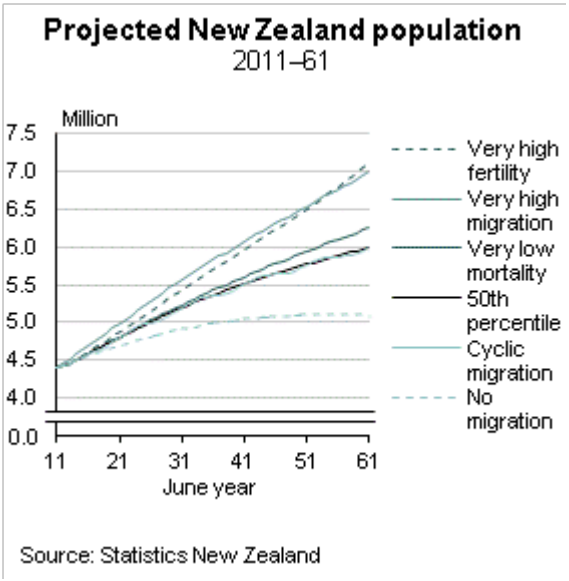
The very high fertility scenario results in a lower 65+ dependency ratio in 2061 – 38 per 100 compared with 44 per 100 in the median projection. However, the 0–14 dependency ratio would be much higher – 37 per 100 compared with 28 per 100 in the median projection. The total

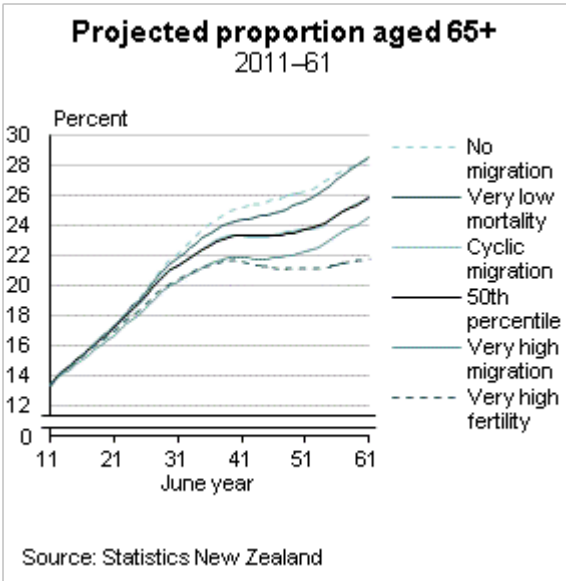
dependency ratio would also be higher – 75 per 100 compared with 72 per 100 in the median projection.

### What if migration was higher?

Net migration of 25,000 a year would also slow the ageing of the population, but much less than the very high fertility scenario. The median age would increase to 43 years in 2061 with very high net migration – virtually the same as the median projection (44 years).

There would be 17 percent more people, 20 percent more births, and 6 percent more deaths in 2061 than in the median projection. By 2061, births would exceed deaths by 21,000, compared with a gap of 11,000 in the median projection.




### What if life expectancy was higher?

The median projection assumes recent reductions in age-specific death rates continue over the projection period. If recent increases in period life expectancy at birth continue, people could live even longer. Life expectancy could reach 95.0 years for males and females in 2061 (very low mortality). The population would then reach 6.3 million in 2061. This is 260,000 more people than under the median projection. Almost 240,000 of these people would be in the 65+ age group, which would triple in size to 1.78 million in 2061. The 85+ age group would increase to over 550,000 in 2061 – almost 200,000 more than the median projection.

With more people in the older ages, the population would age even faster than in the median projection – the median age of the population would near 46 years in 2061. The 65+ dependency ratio would also be higher, reaching 51 per 100 in 2061 compared with 44 per 100 under the median projection. Deaths would total 46,000 in 2061 compared with 55,000 under the median projection.

### What if there was no migration?

An interesting projection for comparative purposes is to assume no arrivals and no departures. This shows how the population is affected by births and deaths. With no migration, the population would peak at 5.1 million in the mid-2050s then slowly decline as deaths outnumber births. Despite deaths outnumbering births, the population of 5.1 million in 2061 would still be

690,000 higher than the 2011 population. Compared with the median projection, the population would be lower in all age groups, but the median age and 65+ dependency ratio would be higher.

## What if migration fluctuated?

The projections assume that net migration varies each year, although the median projection assumes net migration is a constant 12,000 from 2015. However, actual net migration tends to fluctuate significantly from year to year. The cyclic migration scenario assumes net migration fluctuates between -10,000 and +30,000 on a 10-year cycle. The net migration gain between 2011 and 2061 is the same as the median projection.

The population in 2061 is just 4,000 lower in the cyclic migration scenario than the median projection. However, between 2011 and 2061 the population varies between being 37,000 lower and 24,000 higher than the median projection, because of the annual differences in net migration. Other characteristics of the population (eg age distribution, dependency ratios, births, deaths) are very similar between the two projections. A constant level of migration in the long term is therefore a sufficient assumption for most purposes.

For more detailed data see the Excel tables in the ‘Downloads’ box.

# Definitions

## About national population projections

National population projections give an indication of the future population usually living in New Zealand based on different combinations of fertility, mortality, and migration assumptions.

These projections are not predictions. The projections should be used as an indication of the overall trend, rather than as exact forecasts. The projections are updated every 2–3 years to maintain their relevance and usefulness, by incorporating new information about demographic trends and developments in methods.

## More definitions

**Assumption:** statement about a future course of behaviour (eg fertility, mortality, migration) from which projections of the population are derived.

**Baby boomer:** someone born in the years 1946–65, although the definition of the baby boom period varies between sources and between countries.

**Base population:** the starting population for the projections.

**Cohort:** a group of people sharing a common experience. For example, the 1900 birth cohort refers to people born in the year 1900.

**De facto population concept:** a statistical basis for a population in terms of those present in a given area at a given time. For example, the 'estimated de facto population' of New Zealand is an estimate of all people present in New Zealand at a given date, including visitors from overseas, but excluding New Zealand residents who are temporarily overseas.

**Deterministic projection:** a single projection from a given set of assumptions (eg about fertility, mortality, migration).

**Estimated resident population:** an estimate of all people who usually live in New Zealand at a given date. It includes:

- all residents present in New Zealand and counted by the census (census usually resident population count)
- residents who are temporarily overseas (who are not included in the census)
- an adjustment for residents missed or counted more than once by the census (net census undercount).

It excludes visitors from overseas.

**Fertility:** the demographic process relating to births, often summarised by birth rates and fertility rates. Fertility should not be confused with fecundity, which is the biological capacity of a population to bear children.

**Life expectancy (cohort):** the average length of life remaining at a given age, experienced by people born in the same year. For example, life expectancy at birth for people born in 1900 is based on death rates experienced by those people at each age throughout their life.

**Life expectancy (period):** the average length of life remaining at a given age, assuming people experience the age-specific death rates of a given period from the given age onwards. For example, life expectancy at birth for the period 2005–07 is based on death rates in that period, and takes no account of changes in death rates after that period.

**Median age:** half the population is younger, and half the population is older, than this age.

**Median projection:** the 50th percentile, which indicates an estimated 50 percent chance that the actual result will be lower, and a 50 percent chance that the actual result will be higher, than this percentile.

**Mortality:** the demographic process relating to deaths, often summarised by death rates, survival rates, and life expectancy.

**Percentile:** indicates the distribution of values (such as projection results or assumptions). For example, the 25th percentile indicates an estimated 25 percent chance that the actual result will be lower, and a 75 percent chance that the actual result will be higher, than this percentile.

Percentiles are non-additive except the 50th percentile (median). For example, percentiles for the population aged 15–39 and 40–64 years cannot be added together to give the equivalent percentile for the population aged 15–64 years.

Shading in graphs indicates the chance that actual results will fall within a certain range. Different shading is used to distinguish different ranges.

**Projection:** indication of the future characteristics of a population based on an assessment of past trends and assumptions about the future course of demographic behaviour (eg fertility, mortality, migration).

**Replacement fertility:** the average number of live births that women need to have for a population to replace itself in the long term, without migration. This equates to a total fertility rate of about 2.1 births per woman, which allows for the sex ratio at birth (roughly 105 males born for every 100 females) and for mortality of females between birth and before they have children of their own.

**Resident population concept:** a statistical basis for a population in terms of those who usually live in a given area at a given time. For example, the 'estimated resident population' of New Zealand is an estimate of all people who usually live in New Zealand at a given date, including New Zealand residents who are temporarily overseas, but excluding visitors from overseas.

**Stochastic (probabilistic) projection:** a projection which varies randomly according to the probability distributions of the assumptions (eg about fertility, mortality, migration).

**Total fertility rate (cohort):** the average number of live births that women born in the same year have had during their life. For example, the total fertility rate for women born in 1960 is based on fertility rates experienced by those women at each age throughout their life.

**Total fertility rate (period):** the average number of live births that women would have during their life if they experienced the age-specific fertility rates of a given period. For example, the total fertility rate for the year 2011 is based on fertility rates in that year, and takes no account of changes in fertility rates after that year.

# Related links

## Upcoming releases

*National Population Projections (2013-base)* will be released in 2014.

Subnational population projections will be released on 8 October 2012.

The Release calendar lists all our upcoming information releases by date of release.

## Past releases

See National Population Projections – information releases for links to past releases.

## Related information

Could New Zealand reach 7 million people by 2061?: outlines how fertility, mortality, and migration would need to change for the population to reach 7 million, 10 million, and 15 million by 2061.

Experimental stochastic population projections for New Zealand: 2009(base)–2111: outlines a stochastic method, and summarises the results, for projections of the New Zealand population from a 2009 base.

Moving age-sex pyramids: illustrate the changing age structure of the population.

National population estimates: show quarterly and annual changes in the population of New Zealand.

Subnational population estimates: show annual changes in the population of regional council and territorial authority areas.

Subnational population projections: indicate the future population of regional council and territorial authority areas.

Area unit population projections: indicate the future population of area units ('suburbs').

# Data quality

**Period-specific information**

This section contains data information that has changed since the last release.



**General information**

This section contains information that does not change between releases.



## Period-specific information

### Reference period

This release contains 2011-base projections of the population usually living in New Zealand. These supersede the 2009-base projections released in October 2009. The new projections have the estimated resident population at 30 June 2011 as a base, and cover the period 2012–61 at one-year intervals. Extended projections beyond 2061 are available on request. Email: demography@stats.govt.nz.

### Changes since the previous 2009-base projections

**Stochastic projections**

For the first time, Statistics NZ applied a stochastic (probabilistic) approach to producing population projections. Stochastic population projections provide a means of quantifying demographic uncertainty, although it is important to note that the estimates of uncertainty are themselves uncertain. By modelling uncertainty in the projection assumptions and deriving simulations, estimates of probability and uncertainty are available for each projection result. No simulation is more likely, or more unlikely, than any other. However, the simulations provide a probability distribution which can be summarised using percentiles, with the 50th percentile equal to the median.

For each assumption, the median is equivalent to the 'medium' assumption used in previous deterministic projections. Similarly, the median stochastic projection is equivalent to the deterministic projection that combined the medium fertility, medium mortality, and medium migration assumptions in previous projections (ie series 5 in the 2009-base projections). More information about stochastic projections is available in the Statistics NZ working paper Experimental stochastic population projections for New Zealand: 2009(base)–2111.

### Review of assumptions

The derivation of the projections involves a review of all projection assumptions. The main changes from the previous 2009-base projections are:

The **base population** at 30 June 2011 of 4.405 million is 20,000 (0.5 percent) lower than that projected from the 2009-base projections (series 5), mainly because observed net migration in 2010–11 (20,000) was lower than assumed (44,000). Note, however, that the 2006–12 population estimates are subject to revision following the 2013 Census of Population and Dwellings.

The median **annual net migration gain** is assumed to be 12,000 in the long term, compared with 10,000 in the 2009-base projections (medium variant). In the short term, the median net migration assumptions are -3,000, 0, and 7,000 in June years 2012, 2013, and 2014, respectively.

The median **period life expectancy at birth** would reach 88.1 and 90.5 years for males and females, respectively, in 2061. This is higher than the corresponding figures of 85.6 and 88.7 years in the 2009-base projections (medium variant).

## Projection assumptions

Projection assumptions are formulated after analysis of short-term and long-term historical trends, recent trends and patterns observed in other countries, and government policy.

### Base population

These projections have as a base the estimated resident population (ERP) of New Zealand at 30 June 2011. This population (4.405 million) was derived from the ERP of New Zealand at 30 June 2006 (4.185 million), updated for births, deaths, and net migration between 30 June 2006 and 30 June 2011 (+221,000). The ERP of New Zealand at 30 June 2006 was derived from the census usually resident population count at 7 March 2006 (4.028 million) with adjustments for:

- net census undercount (+80,000)
- residents temporarily overseas on census night (+64,000)
- births, deaths and net migration between census night and 30 June 2006 (+9,000)
- reconciliation with demographic estimates at ages 0–4 years (+3,000).

For more information about the base population, refer to information about the population estimates.

The ERP is the best available measure of the number of people usually living in New Zealand. However, for projection purposes, some uncertainty in the base population has been assumed. This uncertainty is assumed to vary by age and sex, and arise from two broad sources:

- Census enumeration and processing. Coverage errors may arise from non-enumeration and mis-enumeration (eg residents counted as visitors from overseas, and vice versa), either because of deliberate or inadvertent respondent or collector error. Errors may also arise during census processing (eg scanning, numeric and character recognition, imputation, coding, editing, creation of substitute forms).
- Adjustments in deriving population estimates. This includes the adjustments applied in deriving the ERP at 30 June of the census year (eg net census undercount). It also includes uncertainty associated with the post-censal components of population change (eg estimates of births occurring in each time period based on birth registrations; changes in classification of external migrants between ‘permanent and long-term’ and 'short-term').

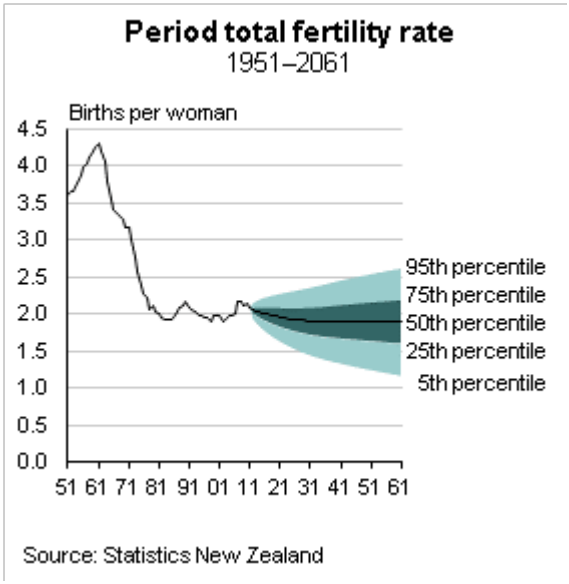
Simulations of the base population are produced by drawing a random number sampled from a normal distribution with a mean of zero. For each simulation, a random number is multiplied by the assumed standard error for each age-sex then added to the base ERP.

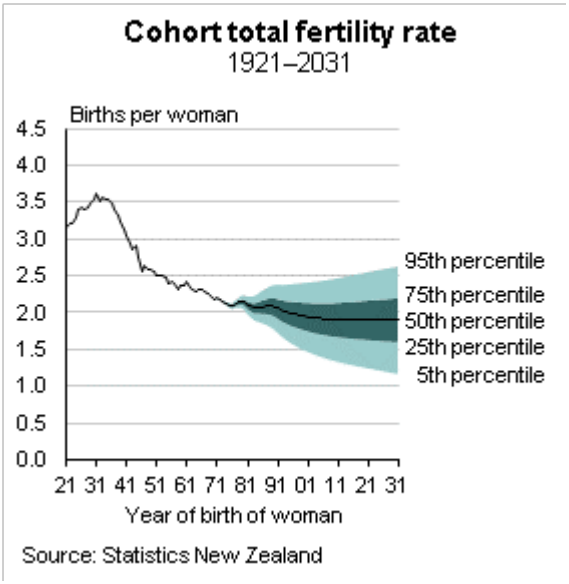
**Fertility**

Fertility assumptions are formulated using birth registrations, period and cohort fertility rates, census data on children ever born (including rates of childlessness), and international comparisons.

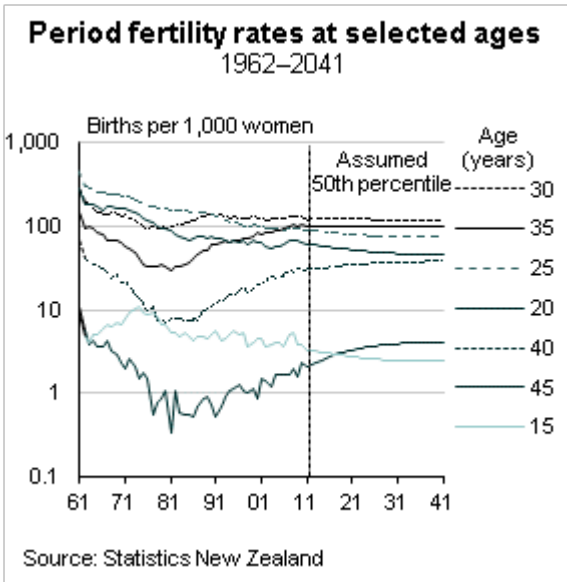
Fertility rates are assumed to vary throughout the projection period. The median period total fertility rate (TFR) declines gradually from 2.05 births per woman in 2012 to 1.96 in 2021, and to 1.90 in 2036 and beyond.

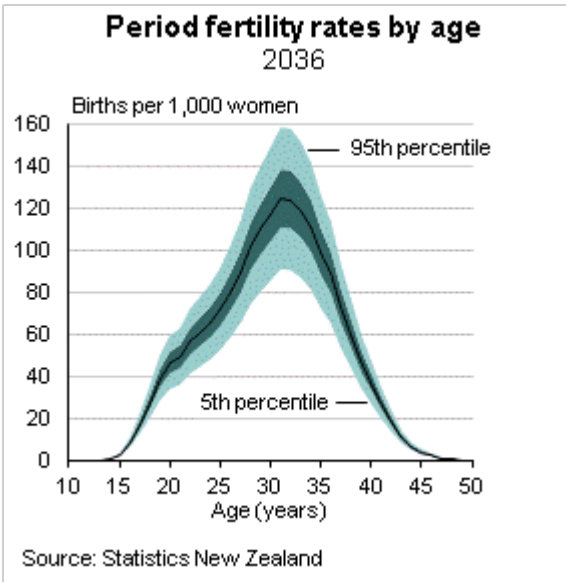
- In the 35 years from 1977 to 2011, the period TFR was generally in the range 1.9–2.2 births per woman.
- The cohort TFR indicates a progressive decline in completed family size. Women born in the early 1970s averaged 2.2 births each, compared with 2.5 for those born in the early 1950s.
- Census data (1981, 1996, 2006) also indicates progressive declines in completed family size and progressive increases in childlessness.
- Internationally, TFRs are generally declining. New Zealand's TFR is one of the highest among Organisation of Economic Co-operation and Development (OECD) countries (and was lower than only Israel in the OECD in 2007–08).




Age-specific fertility rates (ASFRs) are assumed to vary throughout the projection period. The median ASFRs decline for women aged under 36 years, and increase for women aged 36 years and over.




Note: Percentiles shown are 5th, 25th, 50th, 75th, and 95th.

Future fertility trends are uncertain and depend on a range of factors.

- Changes in population composition and different trends in population subgroups (including ethnic groups).
- Trends in ideal family size and the strength of individual desires for children.
- Trends in the patterns of education and work, including the timing, duration, and proportion of time dedicated to those activities.
- Changing macro-level conditions (eg government policies, childcare facilities, and housing) that influence the cost of children in a broad sense.
- Changing nature and stability of partnerships, including rates of partnership formation (including re-partnering) and dissolution.
- Changing biomedical conditions (eg female fecundity, new methods for assisted conception).

Simulations of TFR are produced using a simple random walk with drift model. Random errors are sampled from a normal distribution with mean of zero and calculated standard deviation of 0.0625. The standard deviation is derived by fitting an autoregressive integrated moving average or ARIMA (0,1,0) model to annual TFR for December years 1977–2011. The drift function shifts the median of the TFR simulations to follow the assumed median TFR. Median ASFRs are scaled to sum to the simulated TFR.

Simulations of the sex ratio at birth for each year are produced by drawing a random number sampled from a normal distribution with mean of 105.5 males per 100 females and standard deviation of 1.0. The mean and standard deviation are calculated from historical data for 1900–2011.

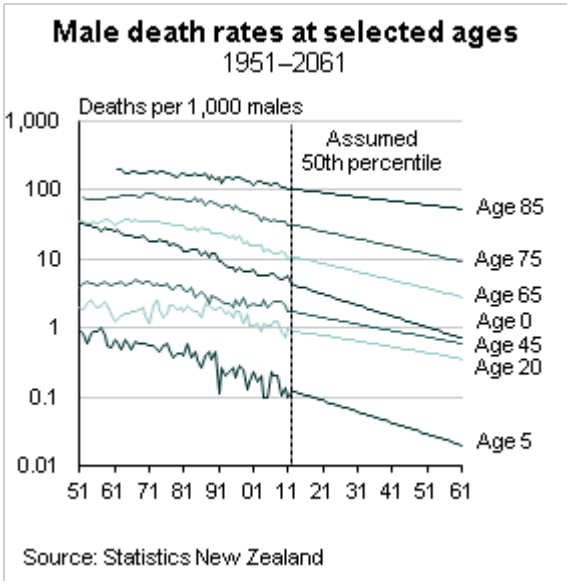
**Mortality**

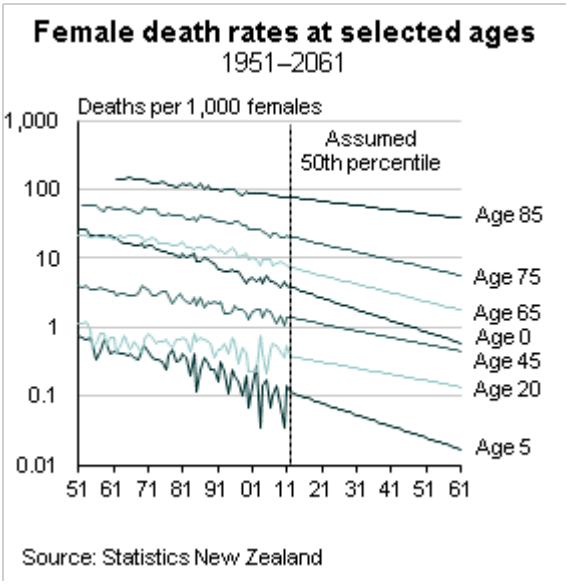
Mortality/survival assumptions are formulated using death registrations, period and cohort mortality rates, and international comparisons.

Death rates are assumed to vary throughout the projection period. The assumptions are driven by trends in age-sex death rates. Life expectancy assumptions are not explicitly formulated but are derived from the assumed death rates.

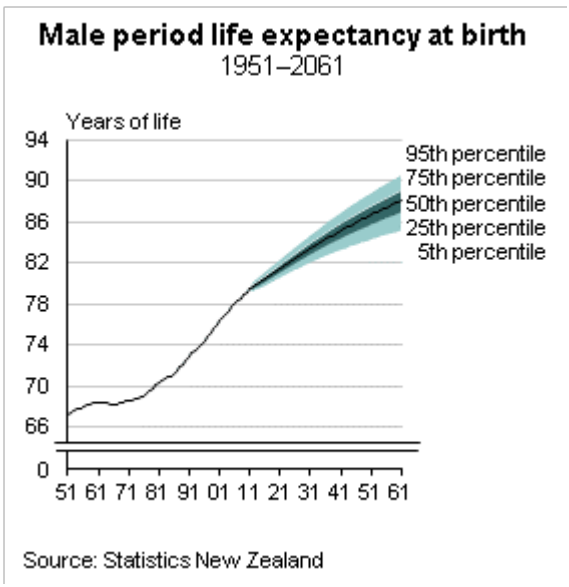
Male and female age-specific death rate assumptions are formulated using a coherent functional data method (FDM) developed by Hyndman, Booth, and Yasmeen (Coherent mortality forecasting: the product-ratio method with functional time series models, 2012). This method builds on the FDM of Hyndman and Ullah (Robust forecasting of mortality and fertility rates: A functional data approach, 2007), which is itself an extension of the Lee-Carter method widely used in mortality forecasting. The research of the authors and Booth, Hyndman, Tickle, and de Jong (Lee-Carter mortality forecasting: a multi-country comparison of variants and extensions, 2006) indicates that FDM forecasts are more accurate than the original Lee-Carter method and at least as accurate as several other Lee-Carter variants. The advantage of the coherent FDM is that it ensures male and female assumptions do not diverge over time.

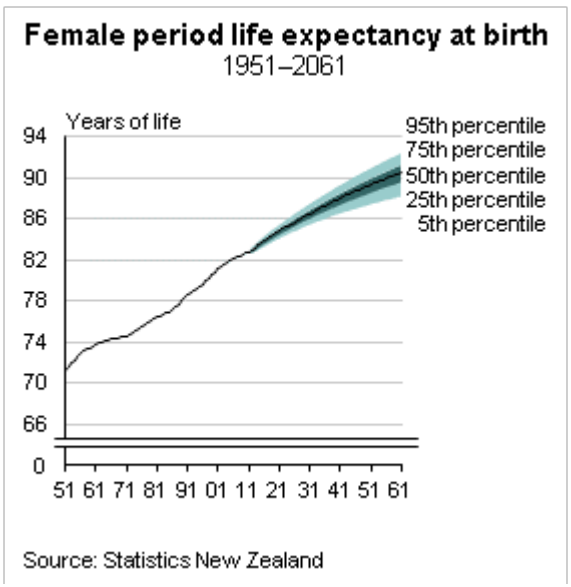
The coherent FDM method uses smoothed historical data to fit the model, which is then forecast using ARIMA and autoregressive fractionally integrated moving average (ARFIMA) time series models. The historical data is derived from Statistics NZ's cohort mortality series, transposed to give period death rates for each age for June years 1977–2011. A final adjustment is made to the forecast death rates to give male and female deaths at the start of the projection period, which are consistent with the latest death registrations. Simulations of death rates are produced using an ARIMA (0,2,2) model to give plausible uncertainty bounds.

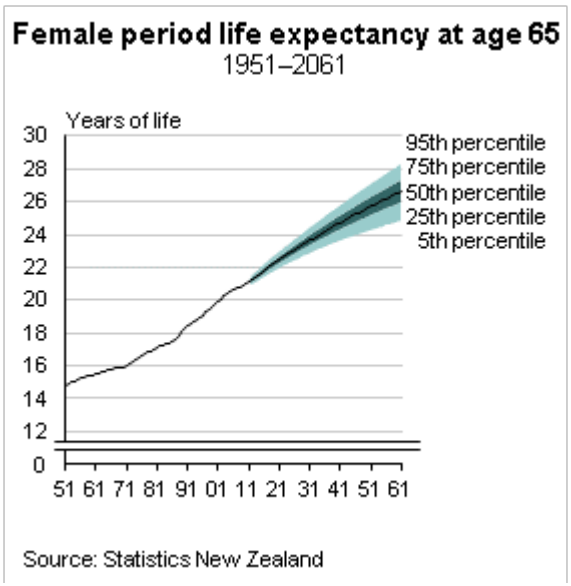


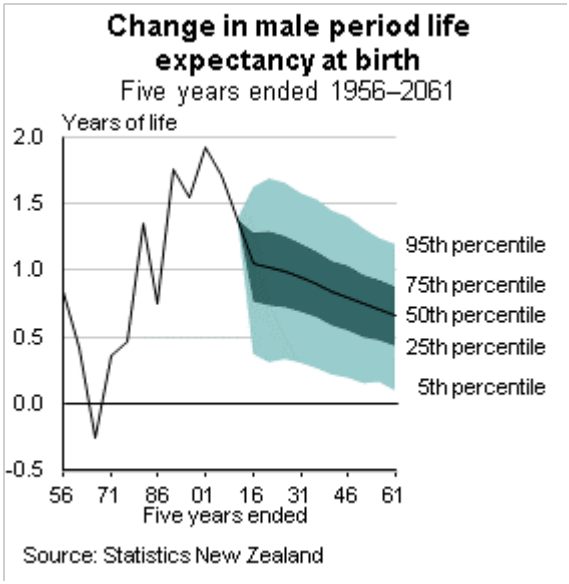

The median assumption has male period life expectancy at birth increasing to 84.3 years in 2036 and 88.1 years in 2061. The corresponding female period life expectancy at birth increases to 87.3 years in 2036 and 90.5 years in 2061.

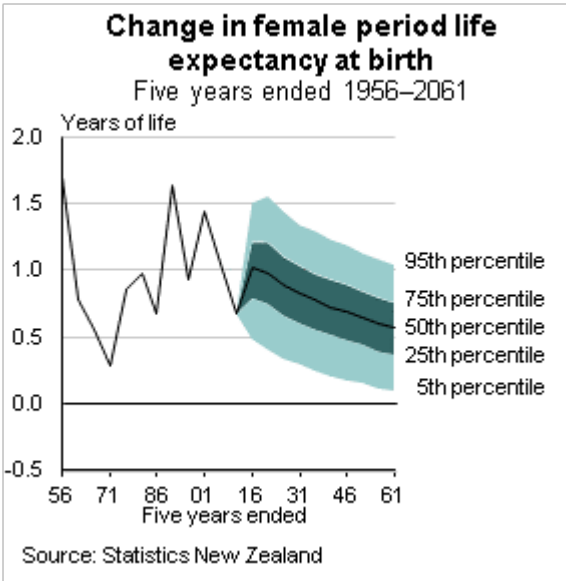


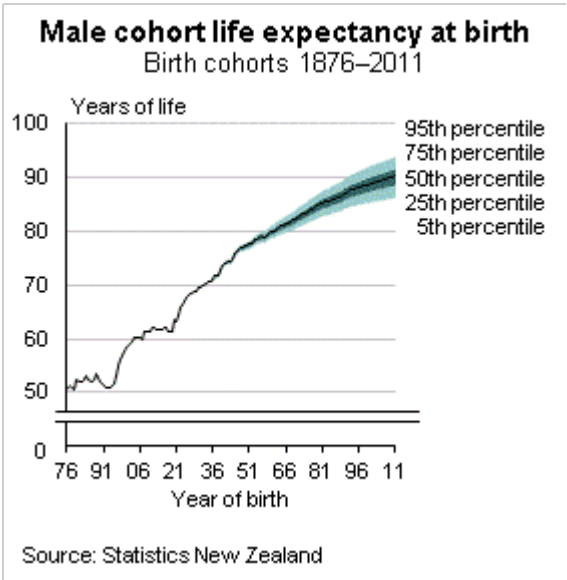



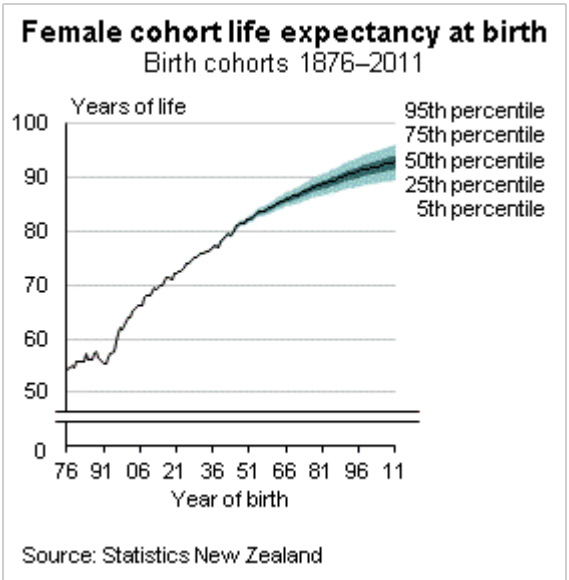

As death rates decline, a given percentage reduction in death rates does not produce the same increase in life expectancy as the same percentage reduction when the death rates were higher.

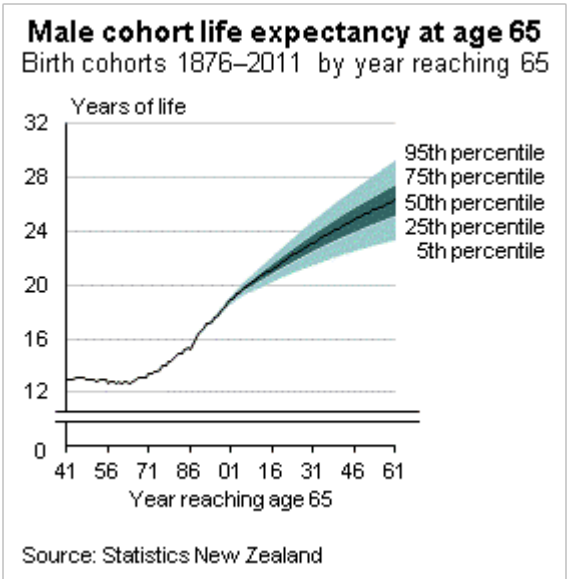


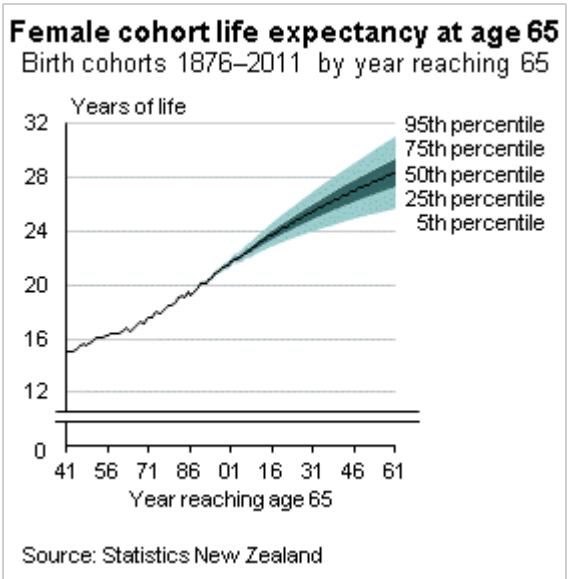




The median assumption has male cohort life expectancy at birth increasing to 80.0 years for those born in 1961 and 90.2 years for those born in 2011. The corresponding female cohort life expectancy at birth increases to 84.7 years for those born in 1961 and 92.9 years for those born in 2011.

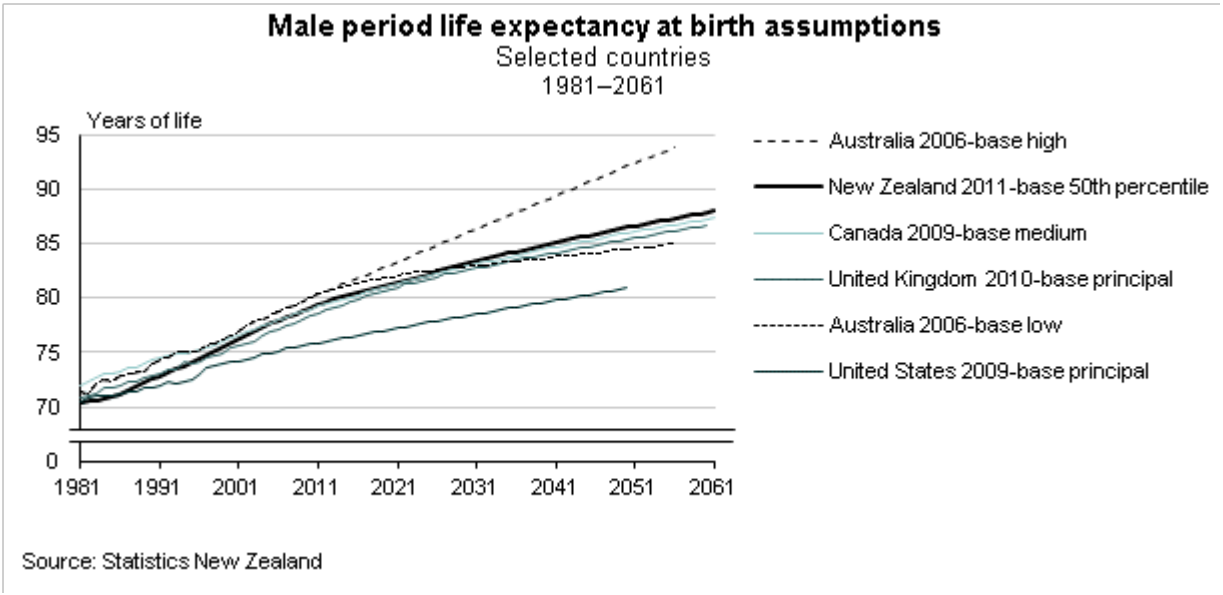


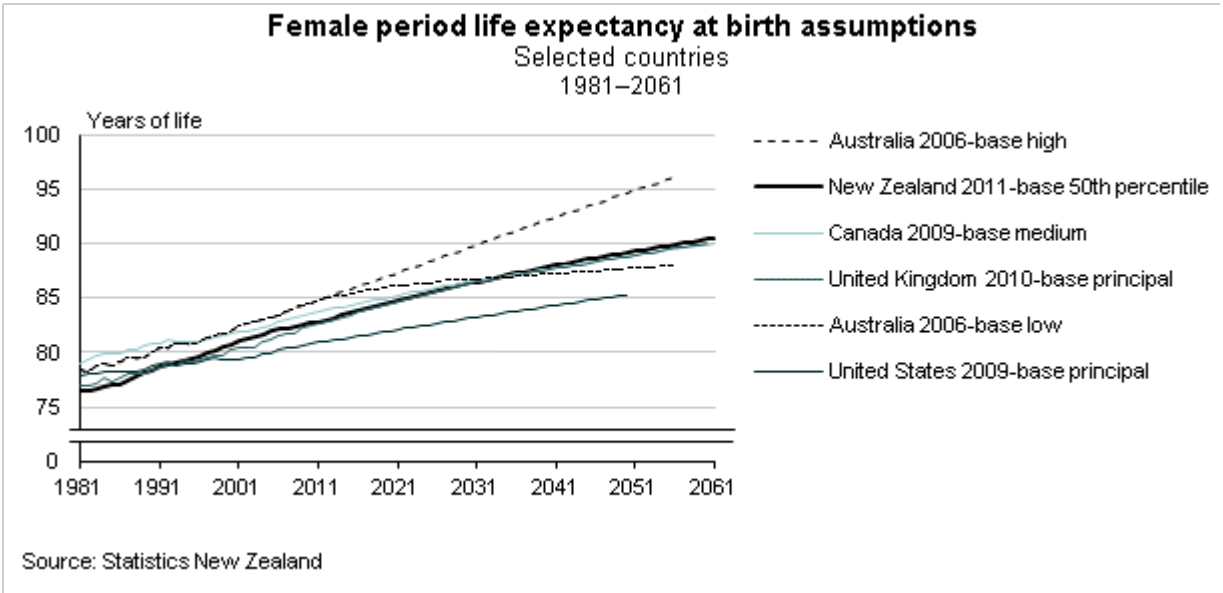




Despite differences in methods, the New Zealand life expectancy assumptions are broadly consistent with those in other countries.




Source: Statistics New Zealand




Source: Statistics New Zealand

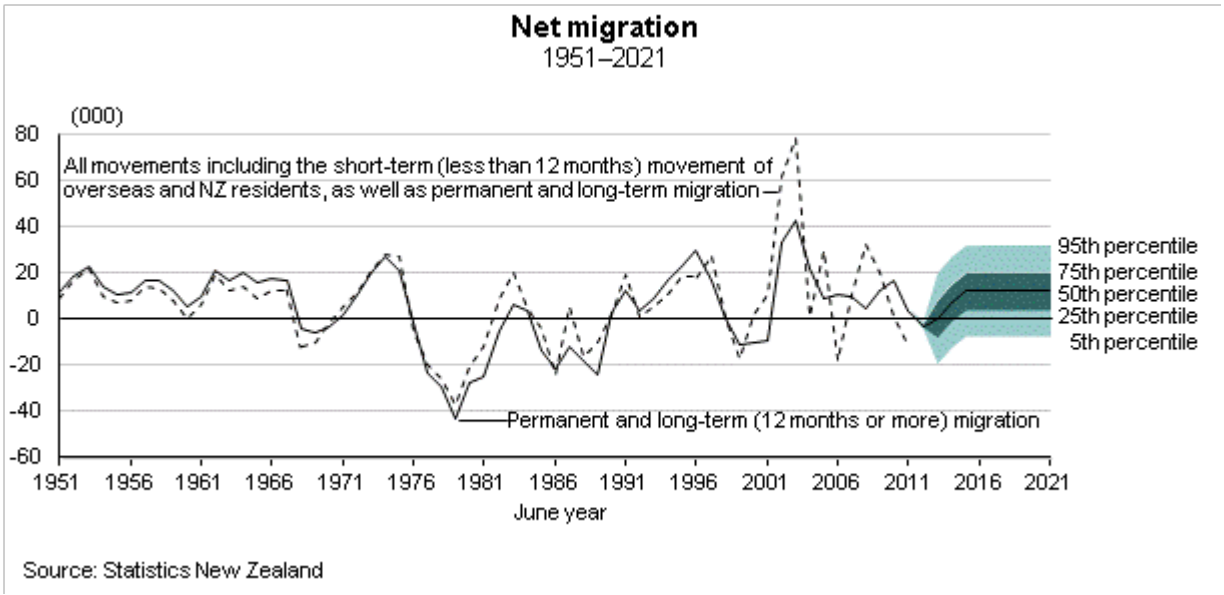
Although mortality reductions are expected to continue in the future, the extent of the trends is uncertain and depends on a range of factors.

- Changes in population composition and different trends in population subgroups (including ethnic groups).
- Changes in biomedical technology, regenerative medicine, and preventative methods including monitoring, treatment, and early intervention.
- Changes in health care systems including effectiveness of public health.
- Changes in behaviour and lifestyle (eg smoking, exercise, diet).
- Changes in infectious diseases and resistance to antibiotics.
- Environmental change, disasters, and wars.

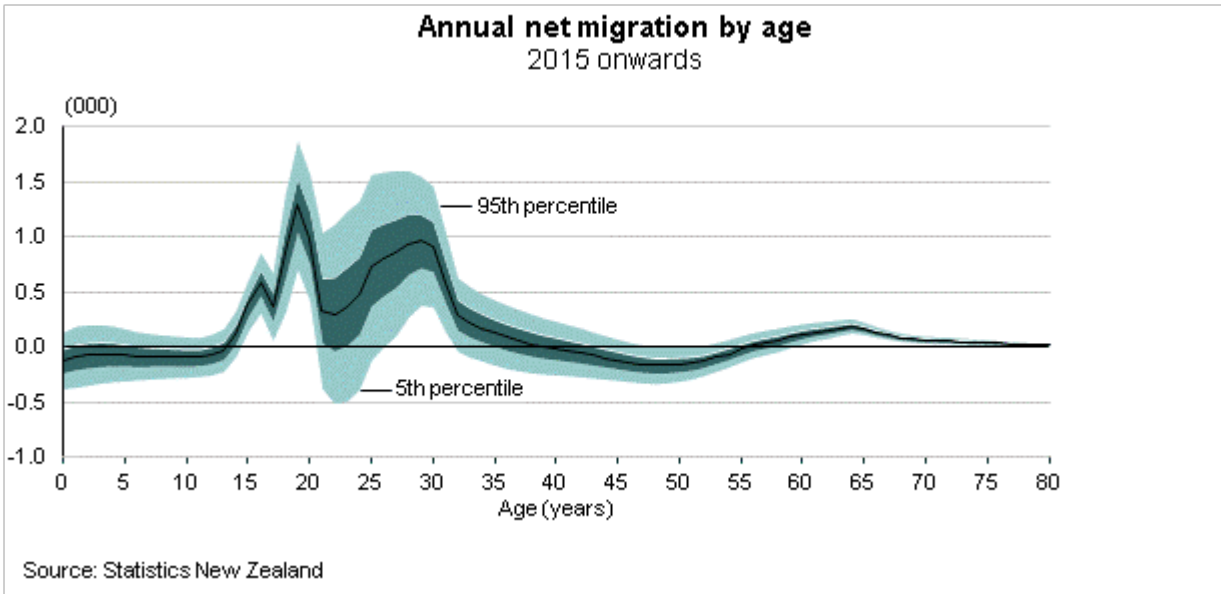
## Migration

Migration assumptions are formulated using international travel and migration data (including arrivals and departures by country of citizenship and age), immigration applications and approvals, census data on people born overseas (including years since arrival in New Zealand), and consideration of immigration policies (in New Zealand and other countries).

Migration is assumed to vary throughout the projection period. The median net migration (arrivals less departures) increases from -3,000 in 2012 to zero in 2013, to 7,000 in 2014, and to 12,000 in 2015 and beyond. The assumed long-run annual net migration of 12,000 reflects the average annual gain of 10–15,000 since the late 1980s and the influence of current immigration policy.




Net migration by age-sex reflects recent observed trends, with the main net inflows at ages 15–32 years.




Note: Percentiles shown are 5th, 25th, 50th, 75th, and 95th.

Future migration trends are uncertain and depend on a range of factors in source and destination countries.

- Changes in immigration policy (in New Zealand and other countries).
- Changes in the main motives for migration (eg work, family reunification, education, asylum, retirement).
- Changes in migration pressure in source countries (eg population growth, economic growth).
- Changes in the attractiveness of New Zealand as a place to live (eg work opportunities, economic conditions, wages relative to costs and other countries, settlement and integration practices).
- Costs of migration, including cost of travel and existence of networks and pathways that facilitate migration.
- Environmental change, disasters, and wars.

Simulations of net migration are produced using an ARIMA (1,0,1) with drift model. Random errors are sampled from a normal distribution with mean of zero and calculated standard deviation of 11,861. The standard deviation, autoregressive parameter, and moving average parameter are derived by fitting an ARIMA (1,0,1) model to annual 'permanent and long-term' migration for June years 1980–2011. The drift function shifts the median of the net migration simulations to follow the assumed median net migration. Net migration by age-sex is interpolated between a high and low pattern, to sum to the simulated net migration level.

### Which projection should I use?

The projections are summarised by percentiles, which indicate the probability distribution for any projected characteristic. Users can make their own judgement as to which projections are most suitable for their purposes. At the time of release, the 50th percentile (or median) indicates an estimated 50 percent chance that the actual result will be lower, and a 50 percent chance that the actual result will be higher, than this percentile. The 25th percentile indicates an estimated 25 percent chance that the actual result will be lower, and a 75 percent chance that the actual result will be higher, than this percentile. It is important to note, however, that the estimates of uncertainty are themselves uncertain.

## General information

This section contains information that does not change between releases.

### Method

The 'cohort component' method has been used to derive the population projections. Using this method, the base population is projected forward by calculating the effect of deaths and migration within each age-sex group (or cohort) according to the specified mortality and migration assumptions. New birth cohorts are added to the population by applying the specified fertility assumptions to the female population of childbearing age.

The stochastic approach involves creating 2,000 simulations for the base population, births, deaths, and net migration, and then combining these using the cohort component method.

## Nature of projections

These projections are not predictions. The projections should be used as an indication of the overall trend, rather than as exact forecasts. The projections are updated every 2–3 years to maintain their relevance and usefulness, by incorporating new information about demographic trends and developments in methods.

The projections are designed to meet both short-term and long-term planning needs, but are not designed to be exact forecasts or to project specific annual variation. These projections are based on assumptions made about future fertility, mortality, and migration patterns of the population. While the assumptions are formulated from an assessment of short-term and long-term demographic trends, there is no certainty that any of the assumptions will be realised.

The projections do not take into account non-demographic factors (eg war, catastrophes, major government and business decisions) which may invalidate the projections.

## Accuracy

The accuracy of these projections is unknown at the time of release. An evaluation of previous Statistics NZ national and subnational population projections over the period 1991–2006 is available in How accurate are population projections? An evaluation of Statistics New Zealand population projections, 1991–2006.

## Confidentiality

Data is combined from many sources to produce population projections. Therefore, it is not possible to identify individuals in our published statistics. The published statistics are also aggregated (eg to larger geographical areas), while data is also rounded to avoid conveying spurious levels of precision.

## More information

Detailed projection results and assumptions are available from Table Builder. More information about the demographic projections, including information about methods and assumptions, is available on our website.

## Liability

While all care and diligence has been used in processing, analysing, and extracting data and information in this publication, Statistics NZ gives no warranty it is error-free and will not be liable for any loss or damage suffered by the use directly, or indirectly, of the information in this publication.

## Timing

Timed statistical releases are delivered using postal and electronic services provided by third parties. Delivery of these releases may be delayed by circumstances outside the control of Statistics NZ. Statistics NZ accepts no responsibility for any such delays.

# Contacts

**For media enquiries contact:**
Contact: Kim Dunstan
Christchurch 03 964 8700
**Email:** info@stats.govt.nz

**For technical information contact:**
Contact: Kim Dunstan or Rino Adair
Christchurch 03 964 8700
**Email:** demography@stats.govt.nz

**For general enquiries contact our Information Centre:**
Phone: 0508 525 525 (toll-free in New Zealand)
+64 4 931 4600 (outside New Zealand)
**Email:** info@stats.govt.nz

# Tables

The following tables are included with this release. They are available in Excel format from the 'Downloads' box of *National Population Projections: 2011(base)–2061* on the Statistics NZ website.

If you do not have access to Excel, you may use the Excel file viewer to view, print, and export the contents of the file.

1. Summary of New Zealand population projections, 2011(base)–2061

## Access more data on Table Builder

Use Table Builder, a free, online tool that enables you to extract the information you want. To access the release data on Table Builder, select the following tables from the homepage:

Subject category: **Population projections tables**
Table title: **National population projections**

Table 1

## Summary of New Zealand population projections

2011(base)–2061

| Year at 30 June | Projected probability distribution (percentiles)[1] | | | | | Scenario | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5th | 25th | 50th (Median) | 75th | 95th | Very high fertility[2] | Very low mortality[3] | No migration [4][5] | Cyclic migration [4][6] | Very high migration [4][7] |
| **Population (000)** | | | | | | | | | | |
| 2011 (base) | 4,400 | 4,403 | 4,405 | 4,427 | 4,457 | 4,405 | 4,405 | 4,405 | 4,405 | 4,405 |
| 2016 | 4,542 | 4,575 | 4,586 | 4,621 | 4,661 | 4,606 | 4,588 | 4,555 | 4,576 | 4,690 |
| 2021 | 4,716 | 4,769 | 4,798 | 4,850 | 4,911 | 4,868 | 4,807 | 4,691 | 4,795 | 4,984 |
| 2026 | 4,870 | 4,953 | 5,004 | 5,077 | 5,168 | 5,148 | 5,025 | 4,812 | 4,993 | 5,278 |
| 2031 | 4,999 | 5,115 | 5,195 | 5,292 | 5,428 | 5,429 | 5,232 | 4,911 | 5,191 | 5,560 |
| 2036 | 5,094 | 5,253 | 5,362 | 5,486 | 5,666 | 5,697 | 5,424 | 4,986 | 5,351 | 5,822 |
| 2041 | 5,155 | 5,367 | 5,511 | 5,664 | 5,902 | 5,957 | 5,603 | 5,041 | 5,508 | 6,069 |
| 2046 | 5,205 | 5,458 | 5,646 | 5,838 | 6,143 | 6,220 | 5,774 | 5,078 | 5,634 | 6,306 |
| 2051 | 5,207 | 5,533 | 5,767 | 6,008 | 6,390 | 6,497 | 5,937 | 5,096 | 5,763 | 6,534 |
| 2056 | 5,194 | 5,591 | 5,882 | 6,170 | 6,655 | 6,794 | 6,095 | 5,097 | 5,869 | 6,759 |
| 2061 | 5,175 | 5,629 | 5,995 | 6,351 | 6,950 | 7,112 | 6,252 | 5,090 | 5,991 | 6,985 |
| **Annual population growth (000)[8]** | | | | | | | | | | |
| 2012 | 25 | 27 | 28 | 30 | 32 | 30 | 28 | 31 | 28 | 57 |
| 2016 | 21 | 33 | 42 | 50 | 63 | 49 | 43 | 29 | 32 | 58 |
| 2021 | 20 | 33 | 42 | 51 | 66 | 54 | 44 | 26 | 60 | 59 |
| 2026 | 16 | 31 | 40 | 50 | 64 | 57 | 43 | 23 | 18 | 58 |
| 2031 | 10 | 25 | 36 | 47 | 62 | 55 | 40 | 18 | 54 | 55 |
| 2036 | 6 | 20 | 32 | 42 | 58 | 53 | 37 | 13 | 10 | 51 |
| 2041 | 2 | 17 | 29 | 40 | 57 | 52 | 35 | 10 | 46 | 48 |
| 2046 | -4 | 14 | 26 | 38 | 56 | 53 | 34 | 6 | 4 | 47 |
| 2051 | -9 | 9 | 23 | 38 | 58 | 57 | 32 | 2 | 41 | 45 |
| 2056 | -13 | 7 | 23 | 38 | 62 | 61 | 31 | -1 | 1 | 45 |
| 2061 | -14 | 6 | 23 | 40 | 67 | 65 | 31 | -2 | 41 | 46 |
| **Annual population growth (percent)[8]** | | | | | | | | | | |
| 2012 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | 0.6 | 1.3 |
| 2016 | 0.5 | 0.7 | 0.9 | 1.1 | 1.4 | 1.1 | 0.9 | 0.6 | 0.7 | 1.2 |
| 2021 | 0.4 | 0.7 | 0.9 | 1.1 | 1.4 | 1.1 | 0.9 | 0.6 | 1.3 | 1.2 |
| 2026 | 0.3 | 0.6 | 0.8 | 1.0 | 1.3 | 1.1 | 0.9 | 0.5 | 0.4 | 1.1 |
| 2031 | 0.2 | 0.5 | 0.7 | 0.9 | 1.2 | 1.0 | 0.8 | 0.4 | 1.1 | 1.0 |
| 2036 | 0.1 | 0.4 | 0.6 | 0.8 | 1.1 | 0.9 | 0.7 | 0.3 | 0.2 | 0.9 |
| 2041 | 0.0 | 0.3 | 0.5 | 0.7 | 1.0 | 0.9 | 0.6 | 0.2 | 0.8 | 0.8 |
| 2046 | -0.1 | 0.2 | 0.5 | 0.7 | 0.9 | 0.9 | 0.6 | 0.1 | 0.1 | 0.7 |
| 2051 | -0.2 | 0.2 | 0.4 | 0.6 | 0.9 | 0.9 | 0.5 | 0.0 | 0.7 | 0.7 |
| 2056 | -0.2 | 0.1 | 0.4 | 0.6 | 1.0 | 0.9 | 0.5 | 0.0 | 0.0 | 0.7 |
| 2061 | -0.3 | 0.1 | 0.4 | 0.6 | 1.0 | 0.9 | 0.5 | 0.0 | 0.7 | 0.7 |
| **Population aged 0–14 years (000)** | | | | | | | | | | |
| 2011 (base) | 894 | 894 | 894 | 898 | 902 | 894 | 894 | 894 | 894 | 894 |
| 2016 | 872 | 888 | 896 | 908 | 924 | 916 | 896 | 901 | 894 | 917 |
| 2021 | 855 | 894 | 918 | 948 | 985 | 988 | 919 | 909 | 916 | 961 |
| 2026 | 806 | 874 | 922 | 974 | 1,046 | 1,066 | 922 | 885 | 920 | 990 |
| 2031 | 773 | 863 | 935 | 1,006 | 1,105 | 1,149 | 935 | 866 | 933 | 1,024 |
| 2036 | 734 | 850 | 936 | 1,022 | 1,146 | 1,202 | 937 | 847 | 936 | 1,041 |
| 2041 | 699 | 835 | 935 | 1,035 | 1,184 | 1,236 | 935 | 832 | 934 | 1,052 |
| 2046 | 667 | 825 | 938 | 1,052 | 1,229 | 1,279 | 939 | 827 | 938 | 1,070 |
| 2051 | 632 | 816 | 948 | 1,080 | 1,292 | 1,345 | 950 | 823 | 947 | 1,098 |
| 2056 | 599 | 807 | 959 | 1,110 | 1,357 | 1,427 | 960 | 814 | 957 | 1,128 |
| 2061 | 553 | 796 | 967 | 1,147 | 1,432 | 1,511 | 968 | 800 | 965 | 1,154 |

Table 1

## Summary of New Zealand population projections

2011(base)–2061

| Year at 30 June | Projected probability distribution (percentiles)[1] | | | | | Scenario | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5th | 25th | 50th (Median) | 75th | 95th | Very high fertility[2] | Very low mortality[3] | No migration [4][5] | Cyclic migration [4][6] | Very high migration [4][7] |
| **Population aged 15–39 years (000)** | | | | | | | | | | |
| 2011 (base) | 1,498 | 1,498 | 1,499 | 1,509 | 1,523 | 1,499 | 1,499 | 1,499 | 1,499 | 1,499 |
| 2016 | 1,518 | 1,534 | 1,540 | 1,557 | 1,575 | 1,540 | 1,540 | 1,497 | 1,534 | 1,601 |
| 2021 | 1,575 | 1,597 | 1,609 | 1,629 | 1,652 | 1,609 | 1,609 | 1,509 | 1,610 | 1,708 |
| 2026 | 1,626 | 1,650 | 1,666 | 1,687 | 1,714 | 1,666 | 1,667 | 1,527 | 1,660 | 1,795 |
| 2031 | 1,619 | 1,651 | 1,669 | 1,694 | 1,725 | 1,689 | 1,670 | 1,502 | 1,672 | 1,822 |
| 2036 | 1,589 | 1,638 | 1,669 | 1,707 | 1,753 | 1,738 | 1,671 | 1,480 | 1,663 | 1,849 |
| 2041 | 1,559 | 1,638 | 1,690 | 1,746 | 1,822 | 1,834 | 1,692 | 1,477 | 1,691 | 1,902 |
| 2046 | 1,534 | 1,639 | 1,718 | 1,795 | 1,911 | 1,951 | 1,720 | 1,472 | 1,711 | 1,963 |
| 2051 | 1,470 | 1,605 | 1,718 | 1,827 | 1,984 | 2,052 | 1,722 | 1,434 | 1,719 | 1,997 |
| 2056 | 1,412 | 1,592 | 1,731 | 1,868 | 2,071 | 2,155 | 1,735 | 1,411 | 1,724 | 2,039 |
| 2061 | 1,356 | 1,576 | 1,740 | 1,904 | 2,156 | 2,244 | 1,744 | 1,392 | 1,742 | 2,074 |
| **Population aged 40–64 years (000)** | | | | | | | | | | |
| 2011 (base) | 1,423 | 1,424 | 1,425 | 1,431 | 1,440 | 1,425 | 1,425 | 1,425 | 1,425 | 1,425 |
| 2016 | 1,441 | 1,446 | 1,448 | 1,456 | 1,467 | 1,448 | 1,448 | 1,460 | 1,446 | 1,467 |
| 2021 | 1,435 | 1,444 | 1,447 | 1,458 | 1,471 | 1,447 | 1,448 | 1,463 | 1,446 | 1,485 |
| 2026 | 1,431 | 1,444 | 1,449 | 1,463 | 1,479 | 1,449 | 1,451 | 1,453 | 1,446 | 1,515 |
| 2031 | 1,457 | 1,475 | 1,484 | 1,503 | 1,522 | 1,484 | 1,487 | 1,457 | 1,480 | 1,588 |
| 2036 | 1,504 | 1,527 | 1,541 | 1,564 | 1,588 | 1,541 | 1,546 | 1,461 | 1,537 | 1,688 |
| 2041 | 1,559 | 1,588 | 1,605 | 1,630 | 1,658 | 1,605 | 1,611 | 1,463 | 1,603 | 1,792 |
| 2046 | 1,622 | 1,656 | 1,675 | 1,703 | 1,734 | 1,675 | 1,683 | 1,477 | 1,673 | 1,899 |
| 2051 | 1,675 | 1,712 | 1,734 | 1,763 | 1,796 | 1,734 | 1,744 | 1,498 | 1,733 | 1,988 |
| 2056 | 1,676 | 1,715 | 1,741 | 1,772 | 1,808 | 1,760 | 1,752 | 1,476 | 1,740 | 2,018 |
| 2061 | 1,656 | 1,708 | 1,743 | 1,784 | 1,834 | 1,812 | 1,755 | 1,457 | 1,741 | 2,048 |
| **Population aged 65+ years (000)** | | | | | | | | | | |
| 2011 (base) | 586 | 586 | 587 | 589 | 592 | 587 | 587 | 587 | 587 | 587 |
| 2016 | 699 | 701 | 702 | 705 | 709 | 702 | 704 | 696 | 702 | 705 |
| 2021 | 816 | 821 | 824 | 828 | 834 | 824 | 831 | 810 | 823 | 830 |
| 2026 | 952 | 962 | 967 | 975 | 984 | 967 | 984 | 947 | 967 | 979 |
| 2031 | 1,082 | 1,099 | 1,107 | 1,119 | 1,133 | 1,107 | 1,139 | 1,086 | 1,106 | 1,126 |
| 2036 | 1,180 | 1,204 | 1,216 | 1,233 | 1,254 | 1,216 | 1,271 | 1,199 | 1,215 | 1,245 |
| 2041 | 1,233 | 1,265 | 1,282 | 1,304 | 1,333 | 1,282 | 1,364 | 1,269 | 1,280 | 1,323 |
| 2046 | 1,250 | 1,293 | 1,314 | 1,343 | 1,381 | 1,314 | 1,431 | 1,303 | 1,313 | 1,373 |
| 2051 | 1,286 | 1,339 | 1,366 | 1,402 | 1,448 | 1,366 | 1,522 | 1,340 | 1,364 | 1,452 |
| 2056 | 1,355 | 1,418 | 1,451 | 1,494 | 1,549 | 1,451 | 1,649 | 1,397 | 1,448 | 1,574 |
| 2061 | 1,436 | 1,506 | 1,545 | 1,594 | 1,656 | 1,545 | 1,784 | 1,442 | 1,542 | 1,709 |
| **Population aged 85+ years (000)** | | | | | | | | | | |
| 2011 (base) | 72 | 73 | 73 | 73 | 74 | 73 | 73 | 73 | 73 | 73 |
| 2016 | 85 | 86 | 86 | 87 | 88 | 86 | 87 | 86 | 86 | 86 |
| 2021 | 93 | 95 | 96 | 97 | 99 | 96 | 99 | 95 | 96 | 96 |
| 2026 | 112 | 116 | 118 | 120 | 124 | 118 | 126 | 117 | 118 | 118 |
| 2031 | 137 | 144 | 147 | 152 | 158 | 147 | 164 | 145 | 147 | 148 |
| 2036 | 177 | 188 | 195 | 202 | 212 | 195 | 226 | 190 | 195 | 197 |
| 2041 | 210 | 227 | 237 | 248 | 263 | 237 | 290 | 229 | 237 | 240 |
| 2046 | 249 | 273 | 286 | 302 | 324 | 286 | 368 | 278 | 286 | 292 |
| 2051 | 279 | 310 | 329 | 350 | 380 | 329 | 446 | 322 | 329 | 337 |
| 2056 | 293 | 330 | 354 | 380 | 418 | 354 | 511 | 350 | 354 | 366 |
| 2061 | 290 | 333 | 360 | 389 | 433 | 360 | 555 | 358 | 360 | 377 |

Table 1

## Summary of New Zealand population projections

2011(base)–2061

| Year at 30 June | Projected probability distribution (percentiles)[1] | | | | | Scenario | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5th | 25th | 50th (Median) | 75th | 95th | Very high fertility[2] | Very low mortality[3] | No migration [4][5] | Cyclic migration [4][6] | Very high migration [4][7] |
| **Population aged 0–14 years (percent)** | | | | | | | | | | |
| 2011 (base) | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 2016 | 19 | 19 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 2021 | 18 | 19 | 19 | 20 | 20 | 20 | 19 | 19 | 19 | 19 |
| 2026 | 16 | 18 | 18 | 19 | 20 | 21 | 18 | 18 | 18 | 19 |
| 2031 | 15 | 17 | 18 | 19 | 20 | 21 | 18 | 18 | 18 | 18 |
| 2036 | 14 | 16 | 17 | 19 | 20 | 21 | 17 | 17 | 17 | 18 |
| 2041 | 13 | 16 | 17 | 18 | 20 | 21 | 17 | 17 | 17 | 17 |
| 2046 | 13 | 15 | 17 | 18 | 20 | 21 | 16 | 16 | 17 | 17 |
| 2051 | 12 | 15 | 16 | 18 | 20 | 21 | 16 | 16 | 16 | 17 |
| 2056 | 11 | 14 | 16 | 18 | 21 | 21 | 16 | 16 | 16 | 17 |
| 2061 | 11 | 14 | 16 | 18 | 21 | 21 | 15 | 16 | 16 | 17 |
| **Population aged 15–39 years (percent)** | | | | | | | | | | |
| 2011 (base) | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 |
| 2016 | 33 | 33 | 34 | 34 | 34 | 33 | 34 | 33 | 34 | 34 |
| 2021 | 33 | 33 | 34 | 34 | 34 | 33 | 33 | 32 | 34 | 34 |
| 2026 | 32 | 33 | 33 | 34 | 34 | 32 | 33 | 32 | 33 | 34 |
| 2031 | 31 | 32 | 32 | 33 | 33 | 31 | 32 | 31 | 32 | 33 |
| 2036 | 30 | 31 | 31 | 31 | 32 | 31 | 31 | 30 | 31 | 32 |
| 2041 | 30 | 30 | 31 | 31 | 32 | 31 | 30 | 29 | 31 | 31 |
| 2046 | 29 | 30 | 30 | 31 | 32 | 31 | 30 | 29 | 30 | 31 |
| 2051 | 28 | 29 | 30 | 31 | 32 | 32 | 29 | 28 | 30 | 31 |
| 2056 | 27 | 28 | 29 | 30 | 32 | 32 | 28 | 28 | 29 | 30 |
| 2061 | 26 | 28 | 29 | 30 | 31 | 32 | 28 | 27 | 29 | 30 |
| **Population aged 40–64 years (percent)** | | | | | | | | | | |
| 2011 (base) | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| 2016 | 31 | 31 | 32 | 32 | 32 | 31 | 32 | 32 | 32 | 31 |
| 2021 | 30 | 30 | 30 | 30 | 31 | 30 | 30 | 31 | 30 | 30 |
| 2026 | 28 | 29 | 29 | 29 | 30 | 28 | 29 | 30 | 29 | 29 |
| 2031 | 28 | 28 | 29 | 29 | 30 | 27 | 28 | 30 | 29 | 29 |
| 2036 | 27 | 28 | 29 | 29 | 30 | 27 | 28 | 29 | 29 | 29 |
| 2041 | 27 | 28 | 29 | 30 | 31 | 27 | 29 | 29 | 29 | 30 |
| 2046 | 27 | 29 | 30 | 31 | 32 | 27 | 29 | 29 | 30 | 30 |
| 2051 | 27 | 29 | 30 | 31 | 33 | 27 | 29 | 29 | 30 | 30 |
| 2056 | 26 | 28 | 30 | 31 | 33 | 26 | 29 | 29 | 30 | 30 |
| 2061 | 26 | 28 | 29 | 31 | 33 | 25 | 28 | 29 | 29 | 29 |
| **Population aged 65+ years (percent)** | | | | | | | | | | |
| 2011 (base) | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| 2016 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 2021 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| 2026 | 19 | 19 | 19 | 20 | 20 | 19 | 20 | 20 | 19 | 19 |
| 2031 | 20 | 21 | 21 | 22 | 22 | 20 | 22 | 22 | 21 | 20 |
| 2036 | 21 | 22 | 23 | 23 | 24 | 21 | 23 | 24 | 23 | 21 |
| 2041 | 22 | 23 | 23 | 24 | 25 | 22 | 24 | 25 | 23 | 22 |
| 2046 | 21 | 22 | 23 | 24 | 25 | 21 | 25 | 26 | 23 | 22 |
| 2051 | 21 | 23 | 24 | 25 | 26 | 21 | 26 | 26 | 24 | 22 |
| 2056 | 22 | 23 | 25 | 26 | 28 | 21 | 27 | 27 | 25 | 23 |
| 2061 | 22 | 24 | 26 | 28 | 30 | 22 | 29 | 28 | 26 | 24 |

Table 1

## Summary of New Zealand population projections

2011(base)–2061

| Year at 30 June | Projected probability distribution (percentiles)[1] | | | | | Scenario | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5th | 25th | 50th (Median) | 75th | 95th | Very high fertility[2] | Very low mortality[3] | No migration [4][5] | Cyclic migration [4][6] | Very high migration [4][7] |
| **Population aged 85+ years (percent)** | | | | | | | | | | |
| 2011 (base) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 2016 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 2021 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 2026 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 |
| 2031 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 2036 | 3 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 |
| 2041 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 4 |
| 2046 | 4 | 5 | 5 | 5 | 6 | 5 | 6 | 5 | 5 | 5 |
| 2051 | 5 | 5 | 6 | 6 | 7 | 5 | 8 | 6 | 6 | 5 |
| 2056 | 5 | 6 | 6 | 7 | 7 | 5 | 8 | 7 | 6 | 5 |
| 2061 | 5 | 5 | 6 | 7 | 8 | 5 | 9 | 7 | 6 | 5 |
| **Median age[9] (years)** | | | | | | | | | | |
| 2011 (base) | 36.8 | 36.8 | 36.8 | 36.8 | 36.8 | 36.8 | 36.8 | 36.8 | 36.8 | 36.8 |
| 2016 | 37.0 | 37.2 | 37.3 | 37.4 | 37.6 | 37.1 | 37.3 | 37.7 | 37.4 | 36.9 |
| 2021 | 37.3 | 37.6 | 37.9 | 38.1 | 38.4 | 37.3 | 37.9 | 38.7 | 37.9 | 37.2 |
| 2026 | 37.8 | 38.4 | 38.7 | 39.1 | 39.6 | 37.7 | 38.8 | 39.9 | 38.7 | 38.0 |
| 2031 | 38.6 | 39.4 | 39.9 | 40.5 | 41.2 | 38.3 | 40.1 | 41.3 | 39.9 | 39.2 |
| 2036 | 39.2 | 40.3 | 41.1 | 41.8 | 42.8 | 38.7 | 41.4 | 42.7 | 41.1 | 40.3 |
| 2041 | 39.4 | 40.9 | 41.9 | 43.0 | 44.3 | 38.6 | 42.5 | 43.7 | 41.8 | 41.0 |
| 2046 | 39.2 | 41.1 | 42.4 | 43.8 | 45.6 | 38.4 | 43.3 | 44.2 | 42.4 | 41.5 |
| 2051 | 38.9 | 41.4 | 43.0 | 44.6 | 46.8 | 38.0 | 44.0 | 44.7 | 42.9 | 42.0 |
| 2056 | 38.7 | 41.5 | 43.5 | 45.6 | 48.2 | 37.7 | 44.9 | 45.4 | 43.5 | 42.5 |
| 2061 | 38.5 | 41.7 | 44.0 | 46.4 | 49.9 | 37.7 | 45.7 | 46.1 | 44.0 | 43.0 |
| **0–14 dependency ratio[10]** | | | | | | | | | | |
| 2011 (base) | 30 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 |
| 2016 | 29 | 30 | 30 | 30 | 31 | 31 | 30 | 30 | 30 | 30 |
| 2021 | 28 | 29 | 30 | 31 | 32 | 32 | 30 | 31 | 30 | 30 |
| 2026 | 26 | 28 | 30 | 31 | 33 | 34 | 30 | 30 | 30 | 30 |
| 2031 | 25 | 27 | 30 | 32 | 35 | 36 | 30 | 29 | 30 | 30 |
| 2036 | 23 | 27 | 29 | 32 | 35 | 37 | 29 | 29 | 29 | 29 |
| 2041 | 22 | 26 | 28 | 31 | 35 | 36 | 28 | 28 | 28 | 28 |
| 2046 | 21 | 25 | 28 | 30 | 35 | 35 | 28 | 28 | 28 | 28 |
| 2051 | 19 | 24 | 27 | 31 | 35 | 36 | 27 | 28 | 27 | 28 |
| 2056 | 19 | 24 | 28 | 31 | 36 | 36 | 28 | 28 | 28 | 28 |
| 2061 | 18 | 24 | 28 | 32 | 37 | 37 | 28 | 28 | 28 | 28 |
| **65+ dependency ratio[11]** | | | | | | | | | | |
| 2011 (base) | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 2016 | 23 | 23 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 23 |
| 2021 | 26 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 26 |
| 2026 | 30 | 31 | 31 | 31 | 32 | 31 | 32 | 32 | 31 | 30 |
| 2031 | 34 | 35 | 35 | 35 | 36 | 35 | 36 | 37 | 35 | 33 |
| 2036 | 36 | 37 | 38 | 38 | 39 | 37 | 40 | 41 | 38 | 35 |
| 2041 | 37 | 38 | 39 | 40 | 41 | 37 | 41 | 43 | 39 | 36 |
| 2046 | 36 | 38 | 39 | 40 | 42 | 36 | 42 | 44 | 39 | 36 |
| 2051 | 36 | 38 | 40 | 41 | 43 | 36 | 44 | 46 | 40 | 36 |
| 2056 | 37 | 40 | 42 | 44 | 47 | 37 | 47 | 48 | 42 | 39 |
| 2061 | 39 | 42 | 44 | 47 | 51 | 38 | 51 | 51 | 44 | 41 |

Table 1

## Summary of New Zealand population projections

2011(base)–2061

| Year at 30 June | Projected probability distribution (percentiles)[1] | | | | | Scenario | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5th | 25th | 50th (Median) | 75th | 95th | Very high fertility[2] | Very low mortality[3] | No migration [4][5] | Cyclic migration [4][6] | Very high migration [4][7] |
| **Total (0–14 + 65+) dependency ratio[12]** | | | | | | | | | | |
| 2011 (base) | 50 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| 2016 | 53 | 53 | 53 | 54 | 54 | 54 | 54 | 54 | 54 | 53 |
| 2021 | 55 | 56 | 57 | 58 | 59 | 59 | 57 | 58 | 57 | 56 |
| 2026 | 57 | 59 | 61 | 62 | 64 | 65 | 61 | 61 | 61 | 59 |
| 2031 | 60 | 63 | 65 | 67 | 70 | 71 | 66 | 66 | 65 | 63 |
| 2036 | 61 | 65 | 67 | 69 | 73 | 74 | 69 | 70 | 67 | 65 |
| 2041 | 61 | 65 | 67 | 69 | 73 | 73 | 70 | 71 | 67 | 64 |
| 2046 | 60 | 64 | 66 | 69 | 72 | 72 | 70 | 72 | 67 | 63 |
| 2051 | 61 | 65 | 67 | 70 | 73 | 72 | 71 | 74 | 67 | 64 |
| 2056 | 63 | 67 | 69 | 72 | 76 | 74 | 75 | 77 | 69 | 67 |
| 2061 | 66 | 70 | 72 | 75 | 79 | 75 | 79 | 79 | 72 | 69 |
| **Births (000)[8]** | | | | | | | | | | |
| 2012 | 58 | 60 | 61 | 62 | 64 | 62 | 61 | 61 | 61 | 61 |
| 2016 | 54 | 59 | 61 | 65 | 69 | 68 | 61 | 60 | 61 | 64 |
| 2021 | 53 | 59 | 63 | 68 | 74 | 75 | 63 | 59 | 63 | 67 |
| 2026 | 51 | 58 | 64 | 69 | 77 | 80 | 64 | 58 | 64 | 69 |
| 2031 | 48 | 57 | 63 | 70 | 79 | 82 | 63 | 56 | 63 | 69 |
| 2036 | 45 | 55 | 63 | 70 | 81 | 84 | 63 | 55 | 63 | 70 |
| 2041 | 44 | 55 | 64 | 72 | 85 | 87 | 64 | 55 | 63 | 72 |
| 2046 | 42 | 55 | 64 | 74 | 89 | 92 | 64 | 55 | 64 | 74 |
| 2051 | 39 | 54 | 65 | 76 | 95 | 98 | 65 | 54 | 65 | 76 |
| 2056 | 36 | 53 | 65 | 78 | 98 | 104 | 65 | 53 | 65 | 77 |
| 2061 | 34 | 52 | 66 | 80 | 104 | 108 | 66 | 52 | 65 | 78 |
| **Deaths (000)[8]** | | | | | | | | | | |
| 2012 | 29 | 29 | 30 | 30 | 31 | 30 | 30 | 30 | 30 | 30 |
| 2016 | 30 | 31 | 31 | 32 | 33 | 31 | 30 | 31 | 31 | 31 |
| 2021 | 31 | 32 | 33 | 34 | 35 | 33 | 31 | 33 | 33 | 33 |
| 2026 | 33 | 35 | 35 | 36 | 38 | 35 | 33 | 35 | 35 | 36 |
| 2031 | 36 | 38 | 39 | 40 | 42 | 39 | 35 | 38 | 39 | 39 |
| 2036 | 40 | 42 | 43 | 44 | 47 | 43 | 38 | 42 | 43 | 44 |
| 2041 | 43 | 46 | 47 | 49 | 51 | 47 | 40 | 46 | 47 | 48 |
| 2046 | 47 | 49 | 51 | 52 | 55 | 51 | 43 | 49 | 51 | 52 |
| 2051 | 50 | 52 | 53 | 55 | 58 | 54 | 45 | 52 | 53 | 55 |
| 2056 | 51 | 53 | 55 | 57 | 59 | 55 | 46 | 54 | 55 | 57 |
| 2061 | 51 | 53 | 55 | 57 | 59 | 55 | 46 | 54 | 55 | 58 |
| **Natural increase (000)[8][13]** | | | | | | | | | | |
| 2012 | 28 | 30 | 31 | 33 | 34 | 33 | 31 | 31 | 31 | 32 |
| 2016 | 23 | 27 | 30 | 33 | 38 | 37 | 31 | 29 | 30 | 33 |
| 2021 | 19 | 26 | 30 | 35 | 41 | 42 | 32 | 26 | 30 | 34 |
| 2026 | 15 | 23 | 28 | 34 | 42 | 45 | 31 | 23 | 28 | 33 |
| 2031 | 9 | 18 | 24 | 30 | 40 | 43 | 28 | 18 | 24 | 30 |
| 2036 | 2 | 12 | 20 | 27 | 38 | 41 | 25 | 13 | 20 | 26 |
| 2041 | -4 | 8 | 17 | 25 | 38 | 40 | 23 | 10 | 16 | 23 |
| 2046 | -9 | 4 | 14 | 23 | 38 | 41 | 22 | 6 | 14 | 22 |
| 2051 | -15 | 0 | 11 | 22 | 41 | 45 | 20 | 2 | 11 | 20 |
| 2056 | -19 | -2 | 11 | 23 | 44 | 49 | 19 | -1 | 11 | 20 |
| 2061 | -21 | -3 | 11 | 25 | 48 | 53 | 19 | -2 | 11 | 21 |

Table 1

## Summary of New Zealand population projections

2011(base)–2061

| Year at 30 June | Projected probability distribution (percentiles)[1] | | | | | Scenario | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5th | 25th | 50th (Median) | 75th | 95th | Very high fertility[2] | Very low mortality[3] | No migration [4][5] | Cyclic migration [4][6] | Very high migration [4][7] |
| **Net migration (000)[8][14]** | | | | | | | | | | |
| 2012 | -4.6 | -3.7 | -3.0 | -2.3 | -1.4 | -3.0 | -3.0 | 0.0 | -3.0 | 25.0 |
| 2016 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | 2.0 | 25.0 |
| 2021 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | 30.0 | 25.0 |
| 2026 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | -10.0 | 25.0 |
| 2031 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | 30.0 | 25.0 |
| 2036 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | -10.0 | 25.0 |
| 2041 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | 30.0 | 25.0 |
| 2046 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | -10.0 | 25.0 |
| 2051 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | 30.0 | 25.0 |
| 2056 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | -10.0 | 25.0 |
| 2061 | -7.7 | 3.9 | 12.0 | 20.1 | 31.7 | 12.0 | 12.0 | 0.0 | 30.0 | 25.0 |
| **Total fertility rate[8][15]** | | | | | | | | | | |
| 2012 | 1.94 | 2.01 | 2.05 | 2.09 | 2.15 | 2.09 | 2.05 | 2.05 | 2.05 | 2.05 |
| 2016 | 1.77 | 1.91 | 2.00 | 2.10 | 2.23 | 2.22 | 2.00 | 2.00 | 2.00 | 2.00 |
| 2021 | 1.63 | 1.83 | 1.96 | 2.09 | 2.28 | 2.34 | 1.96 | 1.96 | 1.96 | 1.96 |
| 2026 | 1.53 | 1.76 | 1.93 | 2.09 | 2.33 | 2.43 | 1.93 | 1.93 | 1.93 | 1.93 |
| 2031 | 1.45 | 1.72 | 1.91 | 2.10 | 2.37 | 2.48 | 1.91 | 1.91 | 1.91 | 1.91 |
| 2036 | 1.39 | 1.69 | 1.90 | 2.11 | 2.41 | 2.50 | 1.90 | 1.90 | 1.90 | 1.90 |
| 2041 | 1.34 | 1.67 | 1.90 | 2.13 | 2.46 | 2.50 | 1.90 | 1.90 | 1.90 | 1.90 |
| 2046 | 1.29 | 1.65 | 1.90 | 2.15 | 2.51 | 2.50 | 1.90 | 1.90 | 1.90 | 1.90 |
| 2051 | 1.25 | 1.63 | 1.90 | 2.17 | 2.55 | 2.50 | 1.90 | 1.90 | 1.90 | 1.90 |
| 2056 | 1.21 | 1.62 | 1.90 | 2.18 | 2.59 | 2.50 | 1.90 | 1.90 | 1.90 | 1.90 |
| 2061 | 1.17 | 1.60 | 1.90 | 2.20 | 2.63 | 2.50 | 1.90 | 1.90 | 1.90 | 1.90 |
| **Male life expectancy at birth[8][16]** | | | | | | | | | | |
| 2012 | 79.3 | 79.5 | 79.7 | 79.9 | 80.1 | 79.7 | 79.7 | 79.7 | 79.7 | 79.7 |
| 2016 | 79.8 | 80.2 | 80.5 | 80.7 | 81.0 | 80.5 | 80.9 | 80.5 | 80.5 | 80.5 |
| 2021 | 80.6 | 81.1 | 81.5 | 81.8 | 82.3 | 81.5 | 82.5 | 81.5 | 81.5 | 81.5 |
| 2026 | 81.4 | 82.0 | 82.5 | 82.9 | 83.5 | 82.5 | 84.1 | 82.5 | 82.5 | 82.5 |
| 2031 | 82.1 | 82.9 | 83.4 | 83.9 | 84.7 | 83.4 | 85.6 | 83.4 | 83.4 | 83.4 |
| 2036 | 82.7 | 83.7 | 84.3 | 84.9 | 85.8 | 84.3 | 87.2 | 84.3 | 84.3 | 84.3 |
| 2041 | 83.3 | 84.4 | 85.2 | 85.8 | 86.8 | 85.2 | 88.8 | 85.2 | 85.2 | 85.2 |
| 2046 | 83.8 | 85.1 | 85.9 | 86.7 | 87.8 | 85.9 | 90.3 | 85.9 | 85.9 | 85.9 |
| 2051 | 84.3 | 85.8 | 86.7 | 87.5 | 88.7 | 86.7 | 91.9 | 86.7 | 86.7 | 86.7 |
| 2056 | 84.8 | 86.4 | 87.4 | 88.3 | 89.6 | 87.4 | 93.4 | 87.4 | 87.4 | 87.4 |
| 2061 | 85.2 | 87.0 | 88.1 | 89.0 | 90.5 | 88.1 | 95.0 | 88.1 | 88.1 | 88.1 |
| **Female life expectancy at birth[8][16]** | | | | | | | | | | |
| 2012 | 82.6 | 82.8 | 83.0 | 83.1 | 83.3 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 |
| 2016 | 83.3 | 83.6 | 83.9 | 84.0 | 84.3 | 83.9 | 84.0 | 83.9 | 83.9 | 83.9 |
| 2021 | 84.1 | 84.5 | 84.8 | 85.1 | 85.5 | 84.8 | 85.2 | 84.8 | 84.8 | 84.8 |
| 2026 | 84.8 | 85.4 | 85.7 | 86.0 | 86.5 | 85.7 | 86.4 | 85.7 | 85.7 | 85.7 |
| 2031 | 85.5 | 86.1 | 86.5 | 86.9 | 87.5 | 86.5 | 87.6 | 86.5 | 86.5 | 86.5 |
| 2036 | 86.0 | 86.8 | 87.3 | 87.8 | 88.4 | 87.3 | 88.9 | 87.3 | 87.3 | 87.3 |
| 2041 | 86.5 | 87.5 | 88.0 | 88.6 | 89.3 | 88.0 | 90.1 | 88.0 | 88.0 | 88.0 |
| 2046 | 87.0 | 88.1 | 88.7 | 89.3 | 90.2 | 88.7 | 91.3 | 88.7 | 88.7 | 88.7 |
| 2051 | 87.5 | 88.6 | 89.4 | 90.0 | 91.0 | 89.4 | 92.5 | 89.4 | 89.4 | 89.4 |
| 2056 | 87.9 | 89.2 | 90.0 | 90.7 | 91.7 | 90.0 | 93.8 | 90.0 | 90.0 | 90.0 |
| 2061 | 88.2 | 89.7 | 90.5 | 91.3 | 92.4 | 90.5 | 95.0 | 90.5 | 90.5 | 90.5 |

Table 1

## Summary of New Zealand population projections

2011(base)–2061

| Year at 30 June | Projected probability distribution (percentiles)[1] | | | | | Scenario | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5th | 25th | 50th (Median) | 75th | 95th | Very high fertility[2] | Very low mortality[3] | No migration (4)(5) | Cyclic migration (4)(6) | Very high migration (4)(7) |

1. Percentiles indicate the probability that the actual result is lower than this percentile. For example, the 25th percentile indicates a 25 percent probability that the actual result for a given year is lower than this percentile.
2. Assumes a total fertility rate of 2.5 births per woman in the long term. The mortality and migration assumptions are consistent with the 50th percentile of the projected probability distribution.
3. Assumes life expectancy at birth increases at a similar annual rate as between the 1975–77 and 2005–07 complete period life tables (ie by 0.31 and 0.23 years of life for males and females, respectively) reaching 95.0 years for both males and females in 2061. Fertility and migration assumptions are consistent with the 50th percentile of the projected probability distribution.
4. The fertility and mortality assumptions are consistent with the 50th percentile of the projected probability distribution.
5. Assumes no external migration (ie a 'closed' population).
6. Assumes annual net migration fluctuates between -10,000 and 30,000 over a 10-year cycle, with an average of 12,000. Net migration over the projection period ending in 2021, 2031, 2041, 2051 and 2061 is the same as the 50th percentile of the assumed net migration.
7. Assumes annual net migration of 25,000.
8. Year ended 30 June.
9. Half the population is younger, and half older, than this age.
10. The number of people aged 0–14 years per 100 people aged 15–64 years.
11. The number of people aged 65+ years per 100 people aged 15–64 years.
12. The number of people aged 0–14 and 65+ years per 100 people aged 15–64 years.
13. Births minus deaths. Negative values denote natural decrease.
14. Arrivals minus departures.
15. The average number of live births that women would have during their life if they experienced the age-specific fertility rates of that year.
16. The average length of life of a newborn baby assuming they experience the age-specific mortality rates of that year throughout their life.

**Note:** Owing to rounding, individual figures may not sum to give the stated totals.

Percentiles are non-additive except the 50th percentile (median). For example, percentiles for the population aged 15–39 and 40–64 years cannot be added together to give the equivalent percentile for the population aged 15–64 years.

**Source:** Statistics New Zealand