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National Labour Force Projections: 2006 (base) - 2061

Highlights

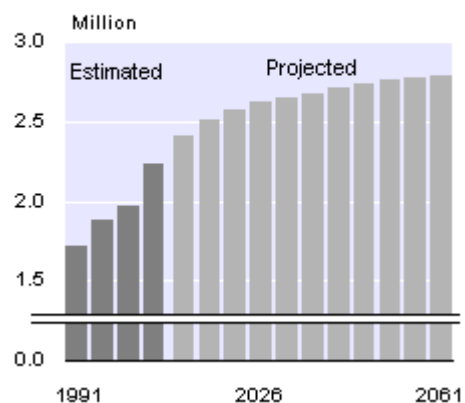
Under all projection series:

- New Zealand's labour force will continue to grow, at least until the late 2020s, but the growth rate will slow.
- The labour force will age, reflected by a rising median age and an increasing proportion of the labour force in the older ages.

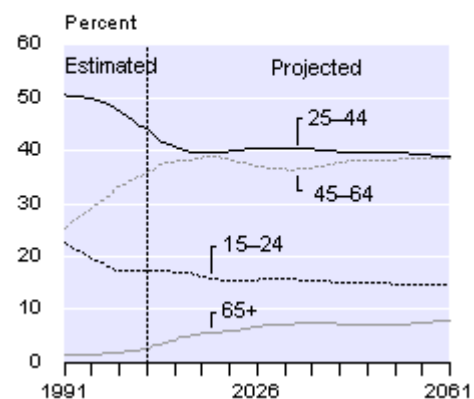
Under mid-range projection series 5M:

- New Zealand's labour force is projected to grow from an estimated 2.24 million at 30 June 2006 to 2.65 million in 2031 and 2.79 million in 2061.
- The labour force is ageing. Half of the labour force will be older than 42 years in 2011, compared with a median age of 40 years in 2006 and 36 years in 1991.
- The labour force aged 65 years and over is projected to rise from an estimated 62,000 in 2006, to 160,000 in 2021 and about 200,000 from the mid-2030s.

New Zealand Labour Force
1991–2061, series 5M



Age Distribution of Labour Force
1991–2061, series 5M



Commentary

Background

This release contains 2006-base labour force projections for New Zealand. These supersede the 2001-base update released in September 2005. The new projections have the estimated resident population in the labour force at 30 June 2006 as a base, and cover the period to 2061 at one-year intervals. Detailed projection results, including projections for individual years and by single-year of age and sex, are available from Statistics New Zealand (email demography@stats.govt.nz or phone toll-free 0508 525 525).

The labour force comprises people aged 15 years and over who regularly work for one or more hours per week for financial gain, or work without pay in a family business, or are unemployed and actively seeking part-time or full-time work.

The projections are neither predictions nor forecasts. They provide an indication of possible future changes in the size and composition of the labour force. While the projection 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.

What has changed from the previous 2001-base projections?

National labour force projections are updated every 2–3 years. These national labour force projections incorporate information from the latest 2006-base national population projections (released 24 October 2007). Compared with the previous 2004-base national population projections (released 16 December 2004), mid-range series 5 of the 2006-base national population projections assumes:

1. A base population at 30 June 2006 of 4.18 million. This is 58,000 or 1.4 percent higher than the 4.13 million projected from the 2004-base national population projections (series 5), mainly because observed net migration was higher than assumed. Net migration between 30 June 2001 and 2006 was an estimated 161,000, based on estimated population change less natural increase (births minus deaths), compared with the medium migration variant of 104,000 in the 2004-base projections.
2. An average total fertility rate of 2.09 births per woman during 2007–2011, dropping to 2.00 during 2012–2016, 1.94 during 2017–2021, 1.91 during 2022–2026, and 1.90 thereafter. By comparison, the previous 2004-base projections assumed the average total fertility rate dropped from 1.95 during 2007–2011 to 1.88 in 2012–2016 and 1.85 thereafter. These higher fertility levels incorporate the recent rise in the total fertility rate, from about 1.9 in the year ended June 2002, to 2.0 in the year ended June 2006, and to 2.1 in the year ended June 2007.
3. Net migration of 46,000 in the five years to 30 June 2011 and 50,000 in each subsequent five-year period. By comparison, the previous 2004-base projections assumed net migration of 38,000 in the five years to 30 June 2011, and 50,000 in each subsequent five-year period.
4. Life expectancy at birth will increase to 81.8 years for males and 85.5 years for females in 2026, and 84.3 years for males and 87.8 years for females in 2051. By comparison, the previous 2004-base projections assumed life expectancy at birth of 81.5 years for males and 85.4 years for females in 2026, and 83.5 years for males and 87.0 years for females in 2051.

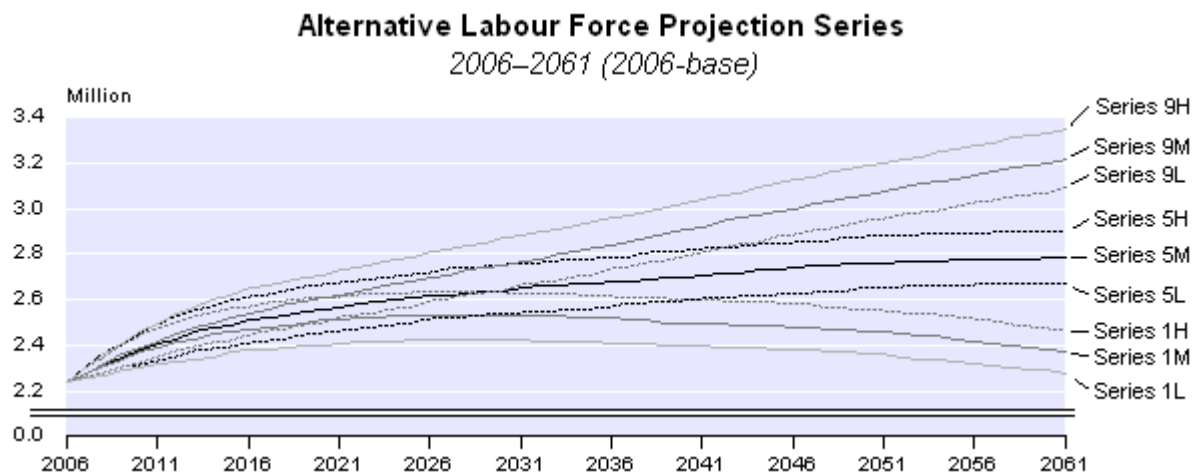
The combined effect of these changes is that the New Zealand labour force is expected to reach 2.41 million by 2011, 2.51 million by 2016, 2.61 million by 2025 and 2.70 million by 2040 (series 5M, 2006-base projections). By comparison, under series 5M of the previous projections the New Zealand labour force was expected to remain at just under 2.40 million from the 2020s.

Which projection series should I use?

Nine projection series have been produced to illustrate a range of possible scenarios using different combinations of fertility, mortality, migration and labour force participation rates. Users can make their own judgement as to which projection series is/are most suitable for their purposes. However, at the time of release, Statistics New Zealand considers mid-range projection series 5M to be the best indication of future labour force changes. Series 5M is consistent with mid-range series 5 of the national population projections (2006-base, released October 2007). The analysis in this release is based on series 5M unless otherwise stated. All projection data have a reference date of 30 June.

Alternative Projection Series				
Projection series	Fertility	Mortality	Migration	Labour force participation
1L	Low	High	Low	Low
1M	Low	High	Low	Medium
1H	Low	High	Low	High
5L	Medium	Medium	Medium	Low
5M	Medium	Medium	Medium	Medium
5H	Medium	Medium	Medium	High
9L	High	Low	High	Low
9M	High	Low	High	Medium
9H	High	Low	High	High

Among the projections, series 1L uses low labour force growth assumptions and projects the lowest labour force throughout the projection period. In contrast, series 9H uses high labour force growth assumptions and projects the highest labour force throughout the projection period.



Total labour force

The total labour force is projected to rise from an estimated 2.24 million at 30 June 2006 to 2.65 million in 2031 and 2.79 million in 2061 (series 5M, which assumes medium fertility, mortality, net migration and labour force participation). Series 9H, which assumes high fertility, low mortality, long-run annual net migration of 15,000 people and high labour force participation, projects the highest labour force of the nine alternative series. Under this projection, the labour force would reach 2.88 million in 2031 and 3.35 million in 2061. Series 1L, which assumes low fertility, high mortality, long-run annual net migration of 5,000 people and low labour force participation, yields the lowest labour force in 2031 (2.43 million) and 2061 (2.28 million).

Male and female labour force

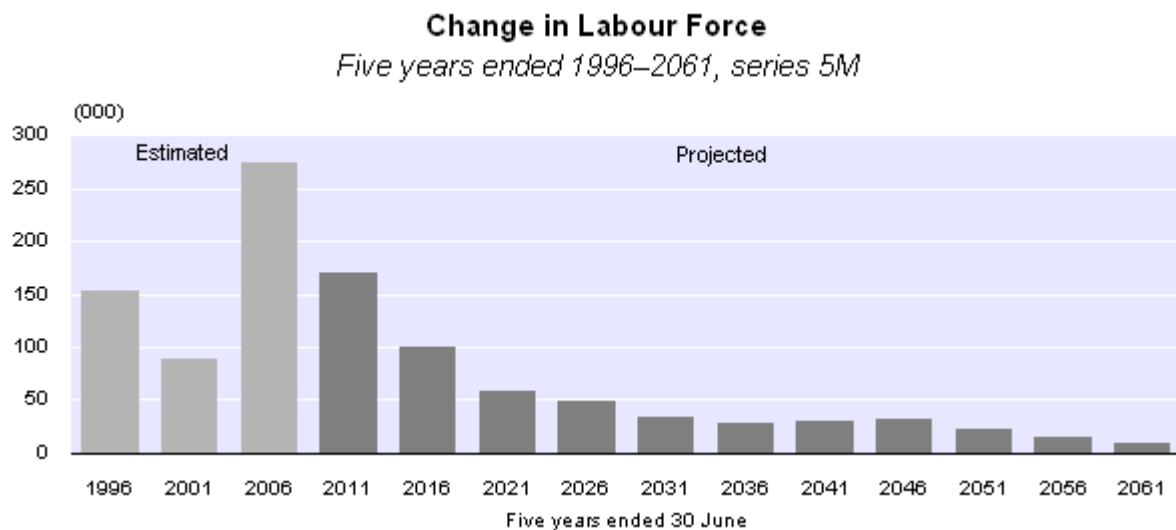
The male labour force is projected to increase from 1.20 million at 30 June 2006 to 1.30 million in 2012, 1.40 million in 2025 and 1.50 million in 2046. With labour force participation rates remaining constant (after 2016), the male labour force will grow at a slowing rate, reaching 1.53 million in 2061.

The female labour force is projected to exceed 1.2 million in the mid-2020s, compared with 1.04 million in 2006. Assuming labour force participation rates remain at 2016 levels, the female labour force would grow only slightly from the 2020s, reaching 1.25 million in 2061.

Labour force growth

All projection series show a slowing of growth over the projection period. In 2011, the oldest baby boomers will reach 65 years and will begin to retire from the labour force in significant numbers. The youngest baby boomers will reach 65 years in the year 2030. From the early 2020s, only small increases in the size of the labour force are expected as the number of people retiring from the labour force approximates the number of new entrants.

Future growth in the labour force is expected to be lower than the relatively large increase of 270,000 between 2001 and 2006, partly due to the increasing proportion of older people who are less likely to participate in employment, and partly due to lower levels of net migration. The labour force is projected to increase by 170,000 from 2.24 million in 2006 to 2.41 million in 2011. Further growth of 100,000 is projected between 2011 and 2016. However, subsequent growth is expected to average less than 15,000 a year.



Age structure

The labour force is projected to continue to age. Half of the labour force was aged over 36 years in 1991. The median age (half of the labour force is older, and half younger, than this age) is projected to increase from 40 years in 2006 to 42 years in 2011. After 2011, the median age is likely to remain about 42–43 years. The gradual increase in the median age reflects the general ageing of the population and the labour force, and the movement of the large number of people born during the 1950s to early 1970s into the older ages.

Age group under 25 years

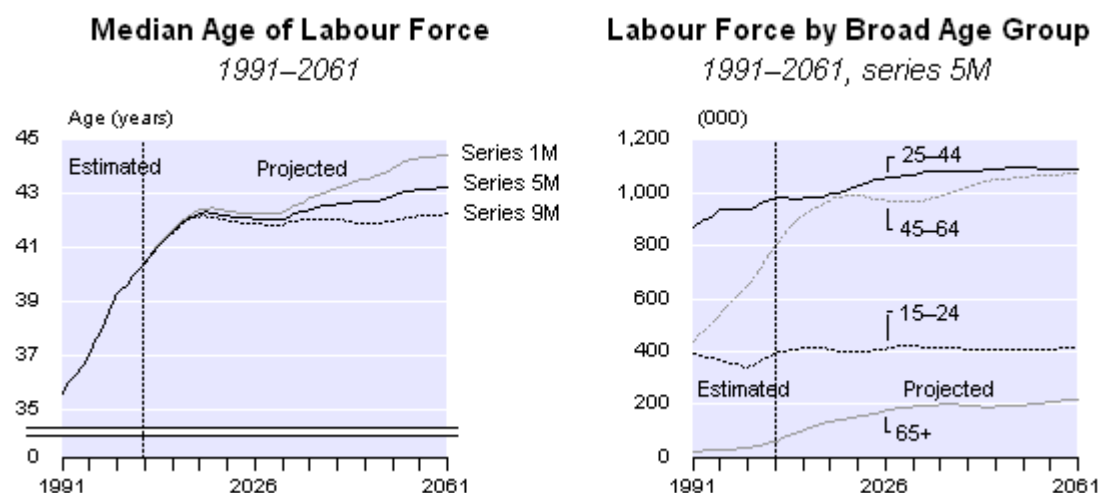
The labour force aged under 25 years is projected to increase from 390,000 in 2006 to nearly 420,000 in the mid-2010s, and average about 410,000 over the remainder of the projection period. Under series 9H, the labour force under 25 years will increase significantly to 470,000 in 2031 and to 530,000 in 2061. In contrast, under series 1L, the labour force in this age group is projected to decrease to 370,000 in 2031 and 320,000 in 2061.

Age group 25–64 years

A comparison of labour force numbers in age groups 25–44 years and 45–64 years shows the impact of population ageing. In 1991, the labour force aged 25–44 years (870,000) was double the labour force aged 45–64 years (440,000). Between 1991 and 2006, the labour force aged 25–44 years increased by 13 percent to 990,000, while the labour force aged 45–64 years increased significantly by 84 percent to 800,000 over the same period. The gap will continue to narrow so that by 2018 the labour force will be about one million in each age group. Subsequently, the numbers will vary but remain within 110,000 of each other.

Age group 65 years and over

The labour force population aged 65 years and over increased from 6 percent in 1991 to 12 percent in 2006 and is assumed to increase to 20 percent in 2016. This rise in labour force participation, coupled with more older people and further ageing of the population, means that the labour force aged 65 years and over increased from 25,000 in 1991 to 62,000 in 2006 and is projected to increase to 160,000 in 2021. With labour force participation rates remaining constant after 2016, the labour force aged 65 years and over will total about 200,000 from the mid-2030s (series 5M). Series 9H yields the highest number of people in the labour force in this age group of 210,000 in 2031, and increases to 250,000 in 2061. In contrast, under series 1L, the number of people in the labour force in this age group is projected to increase to 170,000 in 2031 and 190,000 in 2061.



People not in the labour force

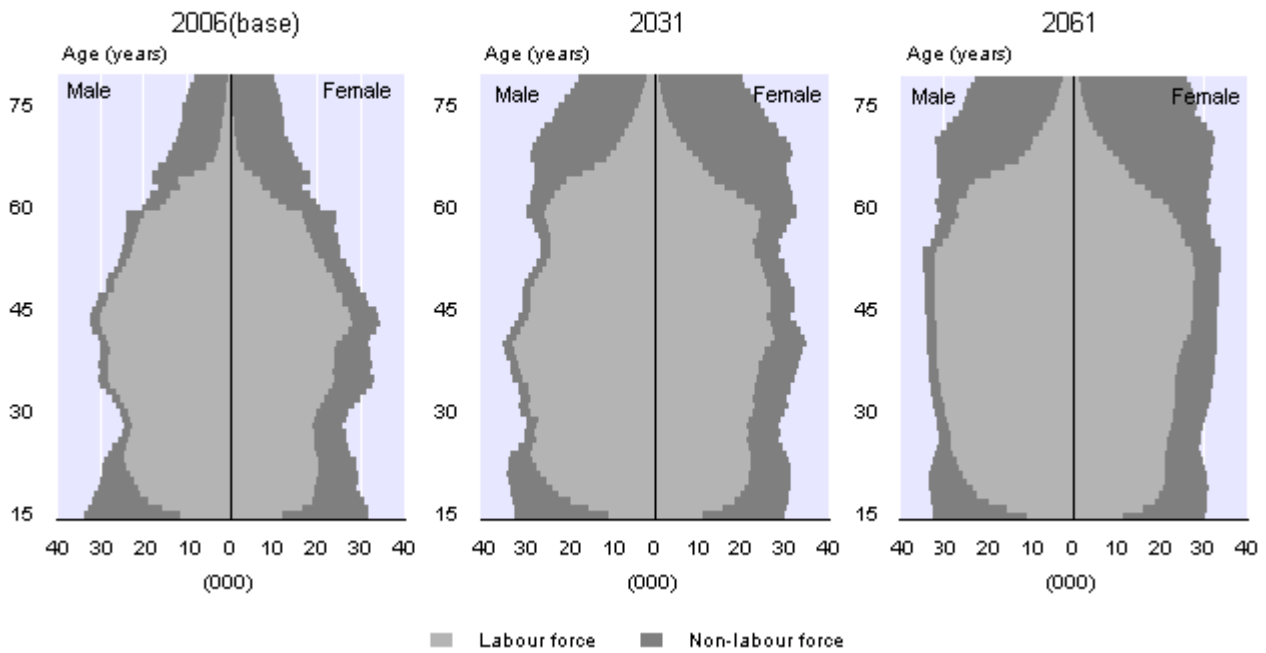
At ages 17–62 years, most males and females are in the labour force. People not in the labour force, as defined for these projections, include people under 15 years of age, students who do not work for pay, people who are unemployed and not actively seeking work, people with childrearing responsibilities, people who work without pay (but not in a family business), and people who have retired.

In 2006, the number of people not in the labour force totalled 1.95 million, compared with 2.24 million in the labour force. The labour force is expected to grow faster than the non-labour force until 2013, when the respective totals will be 2.46 million and 2.02 million. After 2013, the non-labour force will grow faster than the labour force as the baby boomers reach 65 years of age. By 2061, people not in the labour force and people in the labour force are projected to be 2.78 million and 2.79 million, respectively.

The majority of people aged 65 years and over have retired from the labour force. The number of people aged 65 years and over who are not in the labour force will double from 450,000 in 2006 to 900,000 in 2031, and then increase to 1.22 million in 2061 (series 5M). Series 9H yields the highest number of people not in the labour force in this age group, at 930,000 in 2031, and increasing to 1.37 million in 2061. The number of people not in the labour force in this age group is projected to increase substantially even under the series 1L to 870,000 in 2031, and to 1.08 million in 2061.

Projected Population by Labour Force Status, Age and Sex

Series 5M



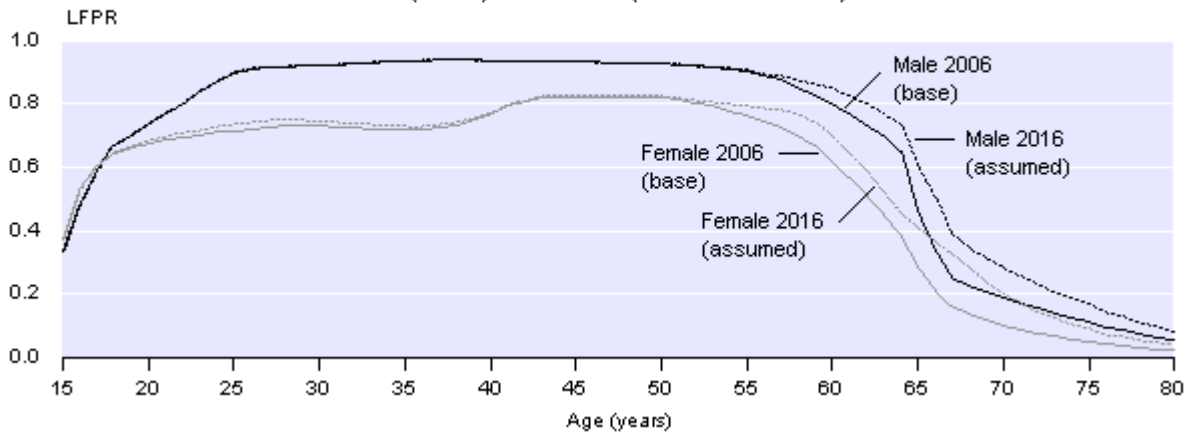
Labour force participation

Labour force participation rates (LFPRs) measure the proportion of the population in the labour force, either part-time or full-time. In 2006, about 93 percent of males aged 25–54 years were in the labour force. Between 2006 and 2016, LFPRs are assumed to increase significantly among males aged 55 years and over, reflecting increased flexibility in the age of retirement (with no compulsory age of retirement), changing attitudes to retirement, and increasing life expectancy and well-being in the older ages.

For females in 2006, LFPRs were at their highest at ages 40–55 years. At younger ages, female LFPRs are affected by childrearing commitments. Similar to males, LFPRs for females aged 55 years and over are projected to increase substantially between 2006 and 2016.

Overall, 75 percent of males aged 15 years and over, and 61 percent of females aged 15 years and over were in the labour force in 2006. These proportions are projected to drop to 70 and 57 percent, respectively, in 2031, and to 67 and 53 percent, respectively, in 2061. The proportion of males and females in the labour force is projected to decline despite static or increasing LFPRs at most ages. This apparent contradiction is caused by the changing age structure of the population, with an increasing proportion of the population and labour force at older ages.

Labour Force Participation Rates (LFPR) by Age and Sex
2006(base) and 2016 (medium variant)



For technical information contact:
Kim Dunstan or Simon Pang
Christchurch 03 964 8700
Email: demography@stats.govt.nz

Technical notes

Latest projections

This release contains 2006-base projections of the labour force usually living in New Zealand. The projections supersede the 2001-base updated series released in September 2005. The new projections cover the period 2007–2061 at one-year intervals by sex and single year of age (to 80+ years). The labour force projections are derived from the latest National Population Projections, 2006 (base) – 2061, (released 24 October 2007) by multiplying the projected population by the assumed labour force participation rates (LFPRs), by single year of age and sex.

The labour force projections indicate the future supply of people, usually living in New Zealand, available for work. However, they do not indicate the extent to which people are available (eg number of hours per week). The labour force comprises people aged 15 years and over who regularly work for one or more hours per week for financial gain, or work without pay in a family business, or are unemployed and actively seeking part-time or full-time work. The LFPR is defined as the proportion of the population in the labour force. These definitions are used in the Household Labour Force Survey (HLFS) and the Census of Population and Dwellings, and conform closely to the international standard definitions specified by the International Labour Organization.

More detailed projection results, including projections for individual years or projections by age and sex, are available on request. Special projections can also be produced for clients, using different combinations of assumptions or their own assumptions. For more information and quotes, email demography@stats.govt.nz or phone toll-free 0508 525 525.

Base population

These labour force projections have as a base the estimated resident population of New Zealand in the labour force at 30 June 2006. The estimated resident population (4.185 million) was derived from the census usually resident population count (4.028 million) at 7 March 2006 with adjustments for:

1. net census undercount (+80,000)
2. residents temporarily overseas on census night (+64,000)
3. births, deaths and net migration between census night (7 March 2006) and 30 June 2006 (+9,000)
4. reconciliation with demographic estimates at ages 0–4 years (+3,000).

The estimated and projected population and labour force are not directly comparable with census counts because of these adjustments. For more information about the base population, refer to Information about the population estimates on the Statistics New Zealand website (www.stats.govt.nz).

The estimated resident population in the labour force at 30 June 2006 was derived by applying the estimated LFPRs to the estimated resident population, by single year of age and sex. The estimated LFPRs at 30 June 2006 were derived from an assessment of both HLFS and 2006 Census data. The projections use the same labour force definition as these two data sources, although there are important differences between the two data sources:

1. The HLFS provides the official measure of the labour force using an interviewer-administered survey of about 15,000 households and 30,000 people each quarter. By comparison, the census provides a snapshot of the labour force every five years.
2. The HLFS measures labour force status over each quarter, while the census question refers to labour force status in the week before the census date.
3. Unlike the HLFS, the census is not subject to sample error (although both data sources may contain non-sampling errors). As a result, the census can provide information at a more detailed demographic level (eg single year of age) than the HLFS.
4. Non-response in the HLFS is minimised through the use of best survey practices. Because the census is self-administered, higher rates of non-response occur.
5. The HLFS generally excludes people in the armed forces and non-private dwellings (eg retirement homes, hospitals, prisons), while the census includes everyone who is in New Zealand on census night.

Compared with the HLFS, the 2006 Census generally indicated higher male LFPRs under 25 years and over 60 years, and higher female LFPRs at most ages. The 2006 Census also generally indicated lower male LFPRs in the main working ages (25–59 years).

Alternative series

Nine alternative projection series have been produced by combining different assumptions on the future fertility, mortality, migration and labour force participation of the population. At the time of release, projection series 5M is considered the most suitable for assessing future labour force changes. The other projection series allow users to assess the impact on the labour force size and structure resulting from different population and/or labour force participation scenarios. For example, series 1M, 5M and 9M can be used for assessing the effect of different population outcomes combined with the medium variant LFPRs; and series 5L, 5M and 5H illustrate the effect of different LFPR assumptions combined with the mid-range population scenario.

Method

The cohort component method was used to derive the population projections. By this method, the base population is projected forward by calculating the effects of deaths and migration within each age-sex group according to specified mortality and migration assumptions. New birth cohorts are generated by applying specified fertility assumptions to the female population of childbearing age.

The labour force projections were subsequently derived by multiplying the projected population by the assumed labour force participation rates, by single year of age and sex.

Projection assumptions

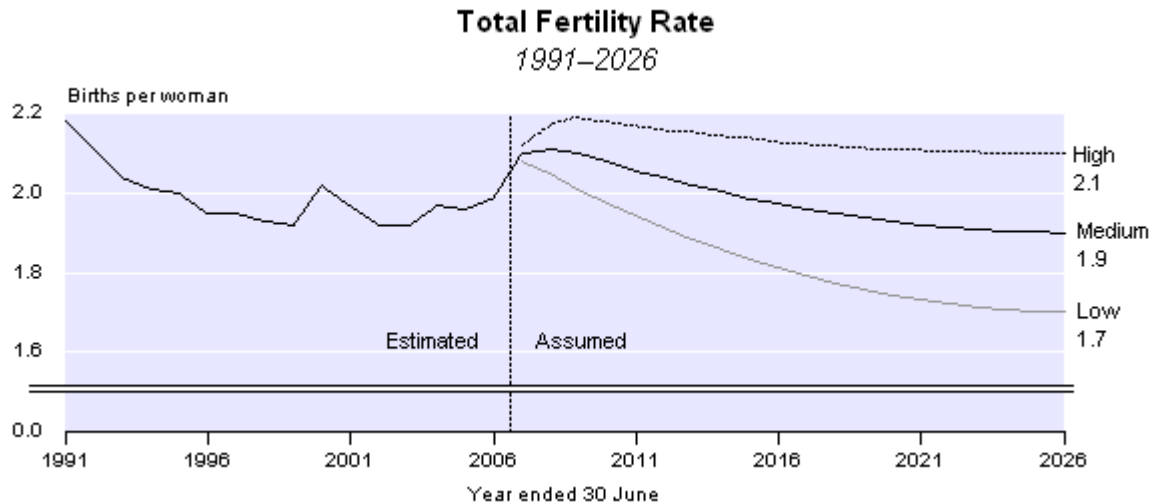
Projection assumptions are formulated after analysis of short-term and long-term historical trends, recent trends and patterns observed in other countries, government policy, and any other relevant information.

Fertility

There are three alternative fertility variants – designated low, medium and high – which assume that fertility rates will vary until the year 2026 when the total fertility rate will reach 1.70, 1.90 and 2.10 births per woman, respectively. After 2026, fertility rates are assumed to stay constant. The base total fertility rate in 2006 was 1.99 births per woman (based on estimated births by date of occurrence).

The medium fertility variant assumes fertility rates of women aged under 32 years will decline between 2006 and 2026, while rates for women aged 32 years and over will increase. By comparison, the low fertility variant assumes fertility rates will decrease between 2006 and 2026 for most ages. The high fertility variant assumes that fertility rates will drop between 2006 and 2026 for women aged under 31 years and increase for women aged 31 years and over.

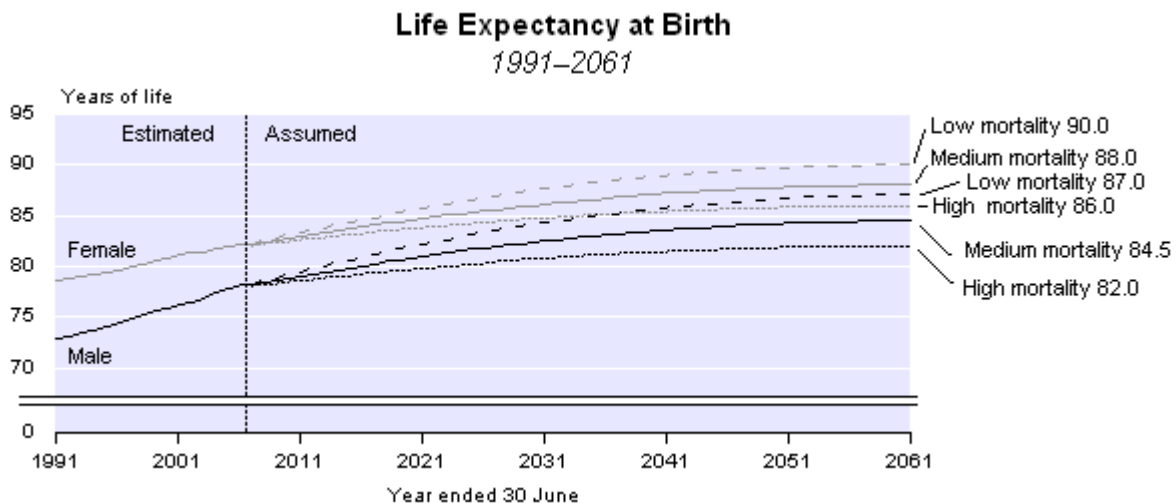
A sex ratio at birth of 105.5 males per 100 females is assumed, based on the historical annual average.



Mortality

There are three alternative mortality variants – designated low, medium and high – which assume that mortality rates will continue to drop so that life expectancy at birth will increase to 87.0, 84.5 and 82.0 years for males, respectively, by 2061. The corresponding life expectancies for females in 2061 will be 90.0, 88.0 and 86.0 years. The base life expectancy at birth in 2005–2007 was 78.2 years for males and 82.2 years for females.

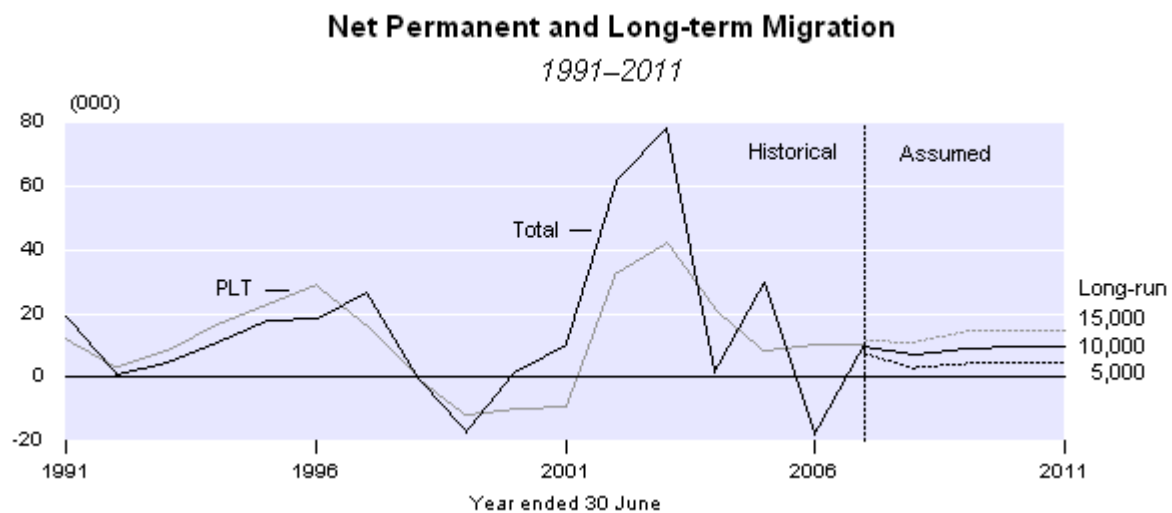
Mortality rates are assumed to decrease at the same rate at all ages. Between 2006 and 2061, male mortality rates are assumed to decrease by about 55, 44 and 29 percent for the low, medium and high mortality variants, respectively. By comparison, female mortality rates are assumed to decrease by about 53, 44 and 31 percent for the low, medium and high mortality variants, respectively.



Migration

There are three alternative migration variants – designated low, medium and high – which assume long-run annual net migration levels of 5,000, 10,000 and 15,000, respectively. Short-run migration levels converging to the long-run levels are assumed for 2007–2009. These short-run levels are based on an analysis of immigration permits, residence applications and approvals, overseas student numbers, and arrivals and departures analysed by characteristics such as citizenship, country of last/next permanent residence and age.

Consistent with historical and recent trends, the age-sex patterns of net migration assume the main net outflow at ages 21–25 years, mainly due to young New Zealanders embarking on overseas travel and the departure of students from overseas after studying in New Zealand. Net inflows are assumed for most other ages, with the highest net inflows at ages 15–19 and 27–38 years.



Labour force participation

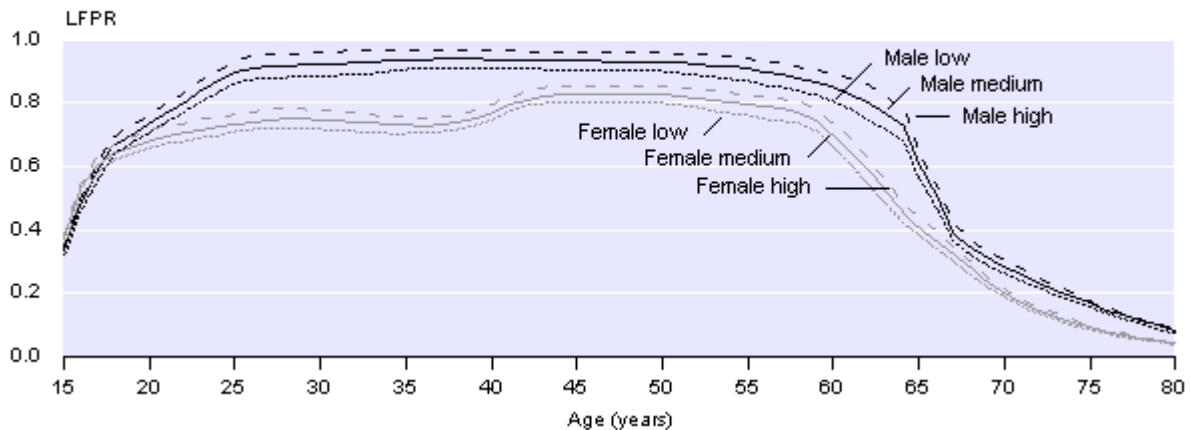
There are three alternative labour force participation variants – designated low, medium and high – which assume that LFPRs will vary until 2016, when the average working life (to age 80 years) for males will be 45.1, 47.0 and 49.0 years, respectively. The corresponding average working life (to age 80 years) for females will be 37.6, 39.2 and 40.8 years. The base average working life (to age 80 years) in 2006 was 45.3 years for males and 36.9 years for females.

Labour force participation assumptions are based on an assessment of recent trends in HLFS and census data. LFPRs are assumed to change annually at a decreasing rate between 2006 and 2016. Most change occurs between 2006 and 2011, with the change between 2011 and 2016 being about one-quarter of that assumed for 2006–2016. After 2016, LFPRs are assumed to stay constant.

For the medium variant, the main change assumed between 2006 and 2016 is for LFPRs to increase significantly for males and females aged 55 years and over. This reflects increasing flexibility in the age of retirement, with no compulsory age of retirement, and increasing life expectancy. For males, LFPRs are assumed to have no changes under 50 years. For females, LFPRs are assumed to have no changes for those aged 15–19 years, but increase slightly for those aged 20–54 years.

The low and high variants assume LFPRs that are lower and higher, respectively, than the medium variant at all ages.

Assumed Labour Force Participation Rates (LFPR) by Age and Sex 2016



Nature of projections

Demographic 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. Although the assumptions are carefully formulated to represent future trends, they are subject to uncertainty. Therefore, the projections should be used as guidelines and an indication of the overall trend, rather than as exact forecasts.

The projections do not take into account non-demographic factors (eg war, catastrophes, major government and business decisions) which may invalidate the projections. Demographic trends are monitored regularly and, when it is necessary, the projections are revised to reflect new trends and to maintain their relevance and usefulness.

For more information about the projections, refer to Information about the demographic projections on the Statistics New Zealand website (www.stats.govt.nz).

Definitions

Average working life (to age 80 years): the average number of years that a person would spend in the labour force if they experienced the labour force participation rates of a given period, assuming they lived to age 80 years.

Baby boomer: usually someone born in the years 1946–1965, although the definition of the baby boom period varies between sources and between countries.

Estimated resident population of New Zealand: 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), and an adjustment for residents missed or counted more than once by the census (net census undercount). Visitors from overseas are excluded.

Labour force: the population aged 15 years and over who regularly work for one or more hours per week for financial gain, or work without pay in a family business, or are unemployed and actively seeking part-time or full-time work.

Labour force participation rate (LFPR): the proportion of the population in the labour force.

Life expectancy: the average length of life remaining at a given age. As derived from a period life table, it assumes that a person experiences the age-specific mortality rates of a given period from the given age onwards. It represents the average longevity of the whole population and does not necessarily reflect the longevity of an individual.

Total fertility rate: the average number of live births that a woman would have during her life if she experienced the age-specific fertility rates of a given period (usually a year).

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Tables

The following tables are printed with this Hot Off The Press and can also be downloaded from the Statistics New Zealand in Excel format. 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.

List of tables

1. Projected labour force of New Zealand, 1991–2061 (2006-base)
2. Projected labour force by age group and sex, 1991–2061 (2006-base)