MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Medium-Long Term Employment Outlook
Looking ahead to 2024

December 2015

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Summary

This report presents the Ministry's employment forecasts to 2024.[1] We forecast employment growth to remain above the long-run average in the medium-term (to 2019) but decline slightly afterwards.

Growth will be strongest for highly-skilled occupations, such as managers and professionals. Business services will be a major driver of employment growth in the medium-term, but decline over the long-term. The hospitality sector will provide steady employment growth over the entire forecast period.

In the medium-term, strong employment growth is anticipated to be matched by increasing labour supply resulting from elevated net migration.

These forecasts[2] are used to inform Ministry's medium and long-term policy advice relating to immigration policy settings and priority setting for tertiary education and industry training.

Key points

- We project employment to increase by 226,200 over the 2014-19 period and by about 183,900 over the subsequent five years to 2024.

- This represents annual employment growth of about 1.9 per cent (or 45,200 on average) and about 1.5 per cent (or about 36,800 on average), respectively.

- This employment outlook is based on average annual GDP growth of about 2.9 per cent and 2.8 per cent over the 2014-19 and 2019-24 periods, respectively, based on latest available (September 2015) macroeconomic (Consensus) forecasts covering exports, imports and consumption growth.

- We forecast moderate to strong employment growth in retail trade and accommodation, business services, construction and utilities, and certain manufacturing industries such as machinery and equipment and metal products. Service industries, including health care and social assistance and arts, recreation and other personal services, are forecast to experience moderate employment growth.

- Over the forecast period, employment growth will be weakest in the primary sector. Weak to modest growth is projected for the public sector, including education and training, and public administration and safety.

[1] These forecasts are based on a Computable General Equilibrium model developed by Business and Economic Research Ltd (BERL) for use by the Ministry of Business, Innovation and Employment (MBIE). The method and underpinning assumptions are described in the methodology section at the end of the report.

[2] The forecast was completed in November 2015, and is broadly consistent with the New Zealand Institute of Economic Research's Consensus Forecasts released in September 2015. This covers export, import, private and public consumption growth along with GDP growth. It is extended further out using a "consensus" view on projected world and regional economic growth for trading partners likely to impact on economic growth in New Zealand.

- Employment growth will be strongest for highly-skilled occupations, including managers and professionals, which are projected to account for nearly 58 per cent of the total employment growth in the ten years to 2024.

- Opportunities for lower-skilled workers will be fewer, with annual growth of 1.3 per cent over the 2014-19 period, and 0.8 per cent during 2019-24. The construction and mining and quarrying industries will be a major source of employment for these workers in the medium-term, with manufacturing, transport and warehousing, and accommodation creating most of the remaining opportunities.

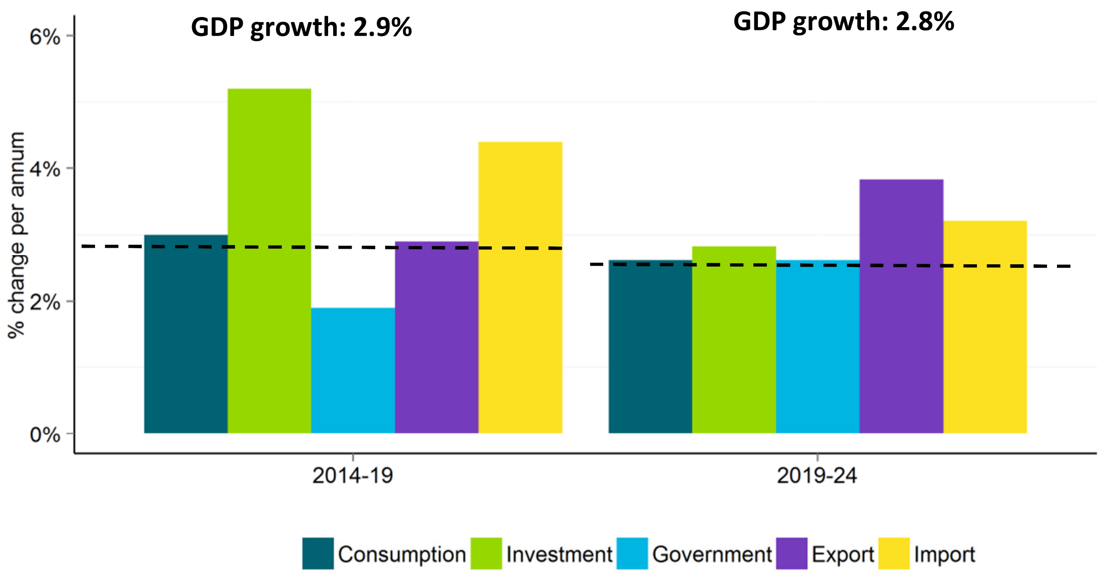
- Increasing labour supply constraints arising from an ageing population underpin this outlook. We anticipate labour supply constraints further out will push up labour costs and lead to increased capital investment by firms. This is likely to result in productivity growth rising to 1.3 per cent per year over the 2019 to 2024 period, compared to 1.0 per cent per year over the 2014-19 period.

- The number of workers retiring is projected to rise from about 25,000 per year during 2006-13 to about 31,000 per year during 2014-24, even with participation by the older workers rising further as the workforce ages.

Medium-long term economic outlook

Our forecasts show the economy growing by 2.9 per cent on average between 2014-19 and by just under 2.9 per cent on average over the 10 year period covering 2014-24 (see Table 1). This indicates economic growth of about 2.8 per cent on average over the 2019-24 period.

Figure 1: Key drivers of economic growth for 2014-19 and 2019-24 periods



Projected economic growth to 2024 may cover the next business cycle in its entirety as well as the end of the present cycle. The average (trend) growth rates of GDP over five and 10 year periods are projected by our modelling approach, and incorporate both the long-term drivers of economic growth such as export growth and household consumption and the impact of the gradual easing of construction activities in the Canterbury region.

The medium-term economic forecasts for the 2014-19 period look beyond the softening of the economy in 2016 March year following the dairy price downturn in 2015 and the anticipated peak of the Canterbury residential build. They also incorporate likely balance between an export-led growth (2.9 per cent on average) and growth driven by domestic household consumption (3.0 per cent). More importantly, this period will experience strong import (4.4 per cent) and investment growth (5.2 per cent) related to the Canterbury rebuild and construction activity across New Zealand and lower Government consumption (1.9 per cent on average).

The long-term economic outlook over the 2019-24 period, which is expected to be only slightly weaker than in the medium-term, underpin much stronger export growth (about 4 per cent), but weaker import (3.5 per cent) and investment (3 per cent) growth due to the rebuild being past the peak. The long-term outlook is also likely to accompany slightly weaker private consumption but stronger government consumption.

The stronger export growth over the long-term arises from dairy-related export growth rising to about 3 per cent from below 2 per cent in the medium-term while export growth in meat and horticulture remains strong between 2.5 and 3 percent. Exports of wood and logs along with basic metal exports are forecast to remain even stronger at above 3 percent while the growth in export of tourism services will remain at around 5 per cent.

This has implications for labour market outcomes across various industries and the potential for productivity gains. Associated with this growth path is the size of import growth required to meet the investment needs for the on-going residential construction and anchor projects in Greater Christchurch and construction across the country as well as capital replacement in manufacturing and in the primary sector.

Medium-long term employment forecasts

We project employment growth over the five years from 2014-19 to average 1.9 per cent per year, which includes periods of strong growth in the 2014 and 2015 March years and weaker growth likely in 2016 March year. Growth is projected to be slower over the entire 10 year period from 2014-24, averaging 1.7 per cent per year (see Table 1). This indicates a much lower 1.5 per cent per year employment growth over the 2019-24 period.

Table 1: GDP forecast, employment and productivity changes (March years[3])

Annual average percentage change	**2014-19 (%)**	***2019-24 (%)***	**2014-24 (%)**
GDP growth	2.9%	2.8%	2.9%
Labour productivity growth	1.0%	1.3%	1.2%
Employment growth	1.9%	1.5%	1.7%

Source: MBIE CGE model runs for 2014-19 and 2014-24 periods; Results for the 2019-24 period derived from the 2014-19 and 2014-24 model runs.

Note: This employment growth is associated with the expected rise in GDP growth along with a steady but moderate increase in productivity over the medium to long term, from 1.0 per cent to 1.3 per cent.

[3] All forecasts in this report are presented on a year to 31 March basis which is an average for the entire period (i.e. Annual Average Percentage Change) and not a point-to-point change which compares the March quarter result with the March quarter of the previous year. This is done to be consistent with the Treasury's GDP growth forecasts which are on a year to 31 March basis.

Employment is projected to increase by 226,200 between March 2014 year and March 2019 year. This includes strong growth in the hospitality/tourism, construction and business services sectors.

Over the 10 year period to 2024, employment is projected to increase by 410,100, implying a 183,900 increase between 2019 and 2024. This equates to average annual employment growth of 45,200 between 2014 and 2019, and 36,800 between 2019 and 2024.

Medium-long term labour productivity forecasts

Between 2011 and 2015, Statistics New Zealand estimates that the labour force grew by more than 1.4 per cent per annum. This includes a historically unprecedented high level of net migration gain over the past two years which is expected to remain well above long-term average levels in the medium-term. The labour force is projected to grow at about 1.6 per cent and 1.4 per cent per year, respectively, between 2014-19 and 2019-24.[4] Even with relatively high rates of labour supply growth, long-term economic growth can only be sustained from labour productivity gains.

During the 2019-24 period, already high overall participation levels may not be sustainable as more baby boomers enter retirement age, with some working fewer hours, while others leave the labour force completely. This will constrain New Zealand's ability to raise employment and participation levels on an on-going basis, and thus in the long-term greater reliance will need to be placed on rising productivity for economic growth.[5]

Reduction in labour supply will push up labour costs and lead to increased capital investment by firms. This is forecast to result in annual productivity growth rising by 30 per cent more during 2019-24 (1.3 per cent) compared to 2014-19 average (1.0 per cent).

Employment forecasts by industry

We project moderate to strong employment growth in the hospitality sector, including retail trade and accommodation, business services and certain manufacturing industries such as machinery and equipment and metal products (see table 2). Residential construction and other infrastructure projects across New Zealand will increase construction-related employment by about 3.3 per cent on average over the 2014-19 March year period, slowing to 0.8 per cent over the 2019-24 March year period.

In the public sector, moderate growth is forecasts for the health care and social assistance industry in the ten years to 2024, while weaker employment growth is projected for the education and training industry due to demographic effects. The public administration and safety industry is also forecast to experience weak growth between 2014 and 2024.

[4] These are projections made in 2012 using the 2006 Census base combining the median (50th percentile) projections with the high net migration scenario to reflect the strengthening net migration. These projections will be updated by Statistics New Zealand early next year, taking into account the 2013 Census along with the strong net migration gain.

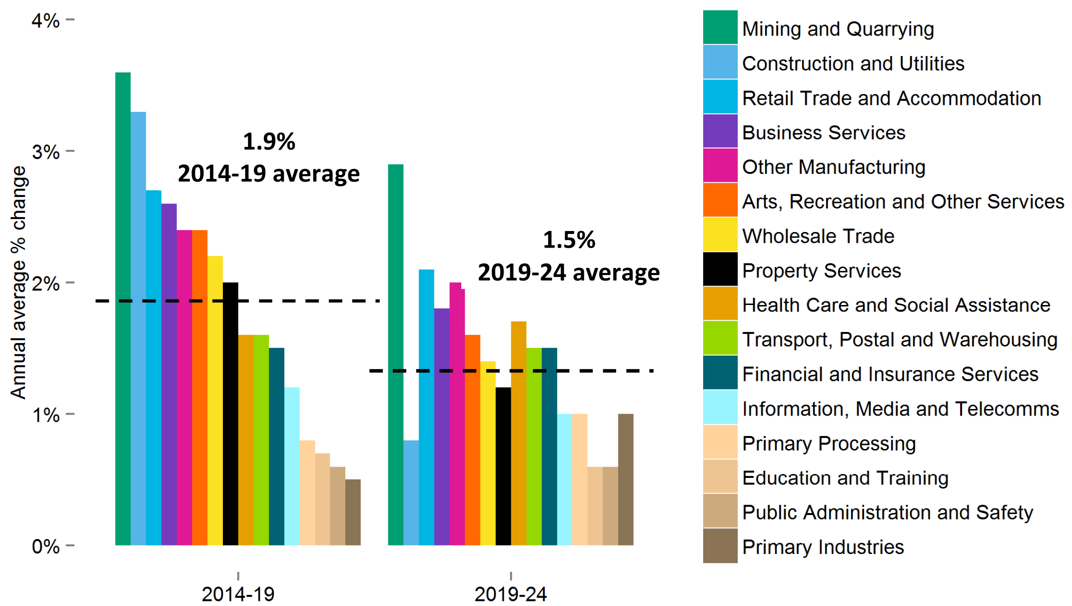
[5] The Conference Board, a global, independent business membership and research association undertakes medium-long-term outlook http://www.conference-board.org/data/globaloutlook.cfm using growth accounting; https://www.conference-board.org/attach/GEO_Methodology_Oct20151.pdf

Table 2: Employment growth for industry groups for 5 & 10 years and average annual percentage changes

Industry Groups	2014-19 (5 years) (000)	(%)	*2019-24 (5 years) (000)*	*(%)*	2014-24 (10 years) (000)	(%)
Agriculture, Forestry and Fishing	4.5	0.5	8.3	1.0	12.8	0.8
Mining and quarrying	1.5	3.6	1.5	2.9	3.0	3.2
Primary processing	4.0	0.8	5.6	1.0	9.5	0.9
Other manufacturing	16.0	2.4	15.3	2.0	31.4	2.2
Construction and Utilities	33.8	3.3	9.5	0.8	43.3	2.0
Wholesale Trade	12.8	2.2	9.2	1.4	21.9	1.8
Retail Trade and Accommodation	50.7	2.7	45.0	2.1	95.7	2.4
Transport, Postal and Warehousing	7.9	1.6	7.7	1.5	15.6	1.6
Information Media and Telecoms	2.9	1.2	2.5	1.0	5.4	1.1
Financial and Insurance Services	5.0	1.5	5.2	1.5	10.2	1.5
Property services	5.0	2.0	3.4	1.2	8.5	1.6
Business services	38.8	2.6	30.1	1.8	68.9	2.2
Public Administration and Safety	4.2	0.6	4.2	0.6	8.4	0.6
Education and Training	6.0	0.7	5.2	0.6	11.3	0.6
Health Care and Social Assistance	16.5	1.6	18.5	1.7	35.0	1.7
Arts, Recreation and Other Services	16.5	2.4	12.7	1.6	29.2	2.0
Total	**226.2**	**1.9**	**183.9**	**1.5**	**410.1**	**1.7**

Source: MBIE CGE model runs for 2014-19and 2014-24 periods; results for the 2019-24 period derived.

Figure 2: Fast to slow growing industry groups, 2014-19 and 2019-24 periods



Note: Retail trade and accommodation includes food services; primary industries includes agriculture, forestry and fishing; primary processing covers food & beverage and wood product manufacturing.

Employment forecasts by occupations and skill groups

Employment growth is projected to be the strongest in Highly-Skilled jobs (see Table 3), growing steadily at about 2.5 per cent (2014-19) and 2.1 per cent (2019-24) per annum which is higher compared to overall employment growth of 1.9 per cent (2014-19) and 1.5 per cent (2019-24) per annum.

Of the 237,800 increase in employment amongst Highly-Skilled workers (managers and professionals) over the 10 years to 2024, nearly 10 per cent is forecast for business administration managers (27,500), about eight per cent for chief executives, general managers and legislators (22,600), seven per cent both for business and systems analysts and programmers (19,300) and for advertising, public relations and sales managers (19,300) and five per cent for school teachers (12,700).

We also project annual employment growth through this period to weaken sharply for Skilled (technicians and trades) workers from 2.2 per cent (2014-19) to 1.3 per cent (2019-24). About a third of the 50,400 increase in employment of skilled workers between 2014 and 2024 is for food trade workers (16,600). Growth in building and engineering technicians (5,200) and electricians (6,300) is expected to account over 10 per cent.

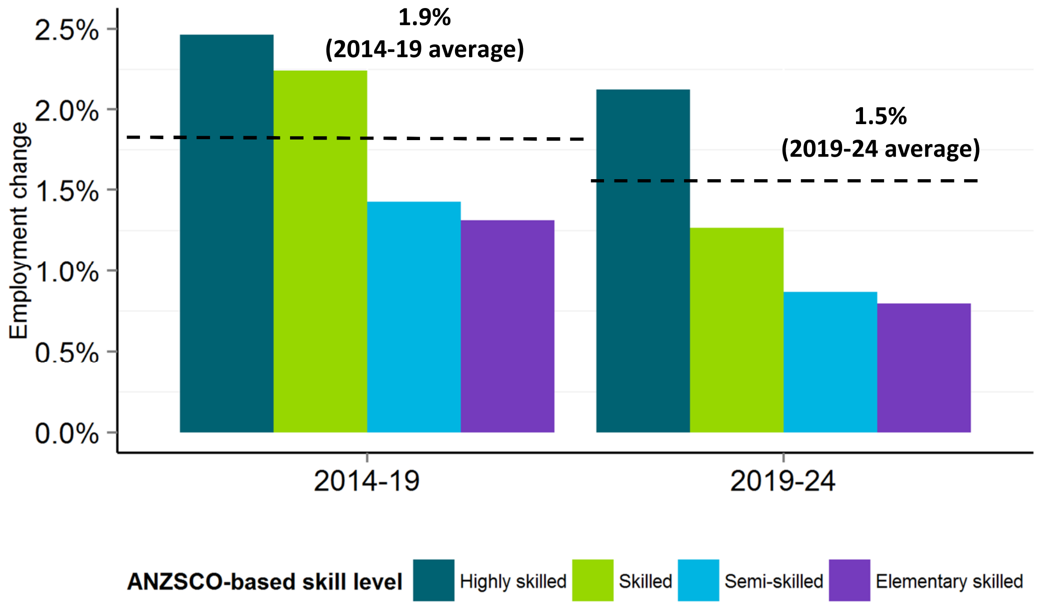
The demand for Semi-Skilled (sales, support and office workers) and Elementary Skilled (machinery and plant operators and other labourers) workers is also projected to weaken over time and is expected to be lower than for skilled workers in the 2019-24 period. The fastest growing occupations within the Semi-Skilled group are office and practice managers, contract program and project administrators and sports and fitness workers. For the Elementary Skilled group, the fastest growing occupations are drivers, construction and mining labourers and other labourers. These occupations make up over 60 per cent of the 41,200 increase for this group.

Table 3: Employment growth for skill groups for 5 & 10 years and annual changes

Skill-levels	**2014-19**		***2019-24***		**2014-24**	
	(000)	**(ann. %)**	***(000)***	***(ann. %)***	**(000)**	**(ann. %)**
Highly-skilled	120.9	2.5	116.9	2.1	237.8	2.3
Skilled	31.1	2.2	19.3	1.3	50.4	1.8
Semi-skilled	49.0	1.4	31.7	0.9	80.7	1.1
Elementary skilled	25.1	1.3	16.1	0.8	41.2	1.1
Total	**226.2**	**1.9**	**183.9**	**1.5**	**410.1**	**1.7**

Source: MBIE CGE model runs for 2014-19 and 2014-24 periods; results for the 2019-24 period derived.

Figure 3: Annual average percentage change, skill group, 2014-19 and 2019-24 periods



The stronger demand for skilled (trades workers in particular) and elementary skilled workers (such as building labourers) will contribute about 25 per cent of employment growth during the 2014-19 March year period. This is due to the Canterbury rebuild and other construction activity spread across New Zealand.

Table 4 lists the 25 occupational groups with the fastest growth during the 2014-24 period. These suggest that amongst the top 25, 14 of them are Highly-Skilled, six Skilled and five Semi-Skilled. There is a much higher representation of the higher skilled (Highly-Skilled and Skilled) occupational groups (20 out of 25) than the Semi-Skilled (5 out of 25) according to projected percentage growth in the 2014-24 period.

There will be strong demand for labourers along with demand for construction related managers, involved in building and construction activity especially during the 2014-19 period, even if these occupational groups are not amongst those ranked as in the top 25 for the 2014-24 period.

Table 4: Top 25 occupation groups[6] ranked by 2014-24 employment % changes

Occupation Groups	2014-19	(%)	2019-24	(%)	2014-24	(%)
1 Office and Practice Managers	11.4	5.2	12.9	4.6	24.3	4.9
2 Business and Systems Analysts, and Programmers	9.0	4.6	10.3	4.2	19.3	4.4
3 ICT Managers	1.9	4.4	2.2	4.1	4.1	4.3
4 Advertising, Public Relations and Sales Managers	9.3	4.4	10.0	3.9	19.3	4.2
5 Glaziers, Plasterers and Tilers	2.9	5.2	2.0	2.9	4.8	4.0
6 Legal Professionals	3.8	4.2	4.2	3.7	8.0	4.0
7 Animal Attendants and Trainers, and Shearers	1.4	3.8	1.7	3.8	3.1	3.8
8 ICT Network and Support Professionals	1.5	4.1	1.6	3.5	3.1	3.8
9 Architects, Designers, Planners and Surveyors	5.1	4.0	5.5	3.6	10.7	3.8
10 Contract, Program and Project Administrators	4.8	3.9	5.1	3.4	9.9	3.7
11 Food Trades Workers	7.5	3.6	9.1	3.7	16.6	3.6
12 Health Diagnostic and Promotion Professionals	2.2	3.7	2.5	3.5	4.7	3.6
13 Business Administration Managers	13.4	3.7	14.1	3.3	27.5	3.5
14 Miscellaneous Hospitality, Retail and Service Manager	4.0	3.8	4.1	3.2	8.1	3.5
15 Miscellaneous Specialist Managers	2.0	3.6	2.3	3.4	4.3	3.5
16 Electricians	3.7	4.2	2.6	2.5	6.3	3.3
17 Fabrication Engineering Trades Workers	2.5	3.7	2.4	3.0	4.9	3.3
18 Engineering Professionals	4.9	3.5	5.1	3.1	10.1	3.3
19 Plumbers	2.3	4.4	1.4	2.2	3.7	3.3
20 Sports and Fitness Workers	3.4	3.5	3.5	3.0	6.9	3.3
21 Natural and Physical Science Professionals	2.9	3.4	3.0	3.1	5.9	3.2
22 Sales, Marketing and Public Relations Professionals	3.9	3.4	4.0	3.0	7.9	3.2
23 Accountants, Auditors and Company Secretaries	6.2	3.4	6.3	3.0	12.5	3.2
24 Real Estate Sales Agents	2.7	3.4	2.7	2.9	5.5	3.2
25 Prison and Security Officers	2.5	3.3	2.7	3.0	5.2	3.1
Total (for all 97 occupation groups)	**226.2**	**1.9**	**183.9**	**1.5**	**410.1**	**1.7**

Source: MBIE CGE model runs for 2014-19 and 2014-24 periods; *2019-24 period results derived*.

Employment of lower-skilled workers

Lower-skilled workers (that is, Semi-Skilled and Elementary workers) will experience lower employment growth than higher-skilled workers, but are projected to account for nearly a third (or 74,100 workers) of total employment growth to 2019, and more than a quarter (or 47,800 workers) during the subsequent five years to 2024.

The main industries employing lower-skilled workers are food processing, retailing, accommodation and construction. These industries also have particular importance for younger workers (15-24 year olds). In 2015, approximately 20 per cent of younger workers were employed in retail trade, 15 per cent in accommodation and food services, 10 per cent in manufacturing and 6 per cent in agriculture, forestry and fishing[7].

Retirement effects

The employment growth described so far due to expanding industries and occupations excludes job opportunities that will arise as older workers retire. The Ministry estimates that this 'retirement demand' is likely to have been about 25,000 jobs per year over the recent seven year inter-census period. This means that while 45,000 new jobs could be created on

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[6] Based on the 3-digit level of the Australia-New Zealand Standard Classification of Occupations (ANZSCO).

[7] This information is sourced from the Household Labour Force Survey (HLFS) unit record data on employment in industries by age groups.

average per year during the 2014-19 period, additional workers are likely to be required to replace those retiring from the labour force. Over the subsequent five year period, 2019-24, retirement demand rises to 31,000, when new job growth slows down towards 37,000.

Over the projection period (2014-24), overall retirement demand is projected to rise to 1.3 per cent per year from 1.2 per cent in the 2006-13 seven year inter-census period. Demand for workers arising from retirement in the projection period will be spread across all skill levels. The highest percentage growth will be amongst skilled workers and the highest number growth will be amongst highly skilled workers (see Table 6).

Table 6: Retirement demand by skill-level, averages 2006-13 and 2014-24

Skill-levels	2006-13		2014-24	
	(000)	(%)	(000)	(%)
Highly-skilled	10	1.17	12	1.20
Skilled	4	1.24	5	1.45
Semi-skilled	6	1.10	9	1.23
Elementary skilled	5	1.22	5	1.31
Total	**25**	**1.20**	**31**	**1.30**

Source: MBIE Cohort component model using 7-yearly Census age cohorts; updated & extended

Methodology

These forecasts are based on a Computable General Equilibrium (CGE) model developed by Business and Economic Research Limited (BERL) for use by the Ministry of Business Innovation and Employment.

The macro-economic setting underpinning these forecasts are informed by the latest available NZIER Consensus forecasts for the 2016-19 period combined with actual data for the 2014 and 2015 March years. They include household or private consumption growth of 3.0 per cent, export growth of 2.9 per cent, import growth of 4.4 per cent and Government or public consumption growth of 1.9 per cent on average for the 2014-19 period. The settings are modified for the 2014-24 period where slightly higher export (3.4 per cent) and lower import (3.8 per cent) growth are considered along with somewhat lower household consumption growth (2.8 per cent).

The modelling is focused on the long-term overall (trend) economic growth and growth across industries disaggregated at the national accounts level. Employment growth across industries and occupational groups (also summarised as broad skill groups) for this timeframe are analysed for inclusion in this report. Regional forecasts for this extended outlook period are unavailable due to the lack of historical regional GDP data by industries for sufficient period, including for more recent years.

The retirement levels and forecasts across the different skill groups are from a separate analysis. This has been updated using the relevant (ANZSCO 3-digit) occupational data by age groups from the 2006 and 2013 Censuses.