**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**

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Medium–Long Term
Employment Outlook
Looking ahead to 2023

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**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**

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Ministry of Business, Innovation and Employment (MBIE)

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Medium-long term employment outlook: 2013-23

Summary

This report presents MBIE's employment forecasts to 2023.[1] We forecast employment growth to remain above the long-run average in the medium-term (to 2018) but decline afterwards. Growth will be strongest for highly skilled occupations, such as managers and professionals. Construction will be a major driver of employment growth in the medium-term, but decline over the longer-term. Service industries will provide steady employment growth over the entire forecast period.

Elevated net migration has contributed to increasing labour supply, which we expect to absorb much of the strong employment growth in the medium-term. As a result, we forecast the unemployment rate to trend down slowly, to 4.6 per cent in 2018. After 2018, even with moderating employment growth the unemployment rate will decline further.

These forecasts[2] are used to inform MBIE's medium-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 240,300 over the 2013-18 period and by about 185,200 over the subsequent five years to 2023.

- This represents annual employment growth of about 2.1 per cent (or 48,000 on average) and about 1.5 per cent (or about 37,000 on average), respectively.

- This employment outlook is based on average annual GDP growth of 3.0 per cent and 2.6 per cent over the 2013-18 and 2018-23 periods, respectively, based on latest available macroeconomic forecasts of the Treasury covering exports, imports and consumption growth.

- We forecast strong employment growth in primary processing, certain manufacturing industries such as machinery and equipment, metal products and in construction-related activities. Service industries, including the health and cultural and personal services sectors, will also experience modest to strong employment growth.

- Employment growth will be strongest for highly-skilled occupations, including managers and professionals, and is projected to account for about 60 per cent.

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

[2] The forecast was completed in October 2014, and is consistent with latest macro-economic forecasts contained in the 2014 Treasury Pre-election economic and fiscal update (PREEFU) of August 2014 available to 2017-18 March year. 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

- Opportunities for lower-skilled workers will be fewer, with annual growth of 1.3 per cent over the 2013-18 period, and 0.7 per cent during 2018-23. The construction industry will be a major source of employment for these workers in the medium-term, with food processing, retailing, 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 to push up labour costs and lead to increased capital investment by firms. This is likely to result in productivity rising by about 20 per cent more over the 2018 to 2023 period (1.1 per cent per year) compared to 2013-18 (0.9 per cent per year).

- We project the unemployment rate to trend down slowly over the projection period to 4.6 per cent by 2018 and decline further by 2023. Strong growth in employment in the short-term is anticipated to be balanced by rising labour supply attributed mainly to strong net migration gain especially during the 2014-16 period. However, as employment growth moderates over the medium-long term, the rate of decline in the unemployment rate will also slow.

- The number of workers retiring is projected to rise from about 25,000 per year during 2006-13 to about 30,000 per year during 2013-20, 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 3.0 per cent on average between 2013-18 and by 2.8 per cent on average over the 10 year period covering 2013-23 (see Table 1). This indicates economic growth of about 2.6 per cent on average over the 2018-23 period.

Projected economic growth to 2023 may cover the next business cycle in its entirety as well as the end of the present cycle. The average growth rates over five and 10 year periods are projected by our modelling approach, and incorporate both the longer term drivers of economic growth and the additional stimulus brought about by the Canterbury rebuild.

Medium-long term economic forecasts look beyond the bounce back following the economic downturn. They also incorporate the likely balance between an export-led growth and growth driven by domestic household spending (See methodology notes at the end of the report). 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 Canterbury rebuild 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 2013-18 to average 2.1 per cent per year, which includes periods of strong growth in the 2014 and 2015 March years. Growth is projected to be somewhat lower over the entire 10 year period from 2013-23, averaging 1.8 per cent per year (see Table 1). This indicates a much lower 1.5 per cent per year employment growth over the 2018-23 period.

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

Annual average percentage change	2013-18 (%)	*2018-23 (%)*	2013-23 (%)
GDP growth	3.0%	*2.6%*	2.8%
Labour productivity growth	0.9%	*1.1%*	1.0%
Employment growth	2.1%	*1.5%*	1.8%

Source: MBIE CGE model runs for 2013-18 and 2013-23 periods; R*esults for the 2018-23 period derived from the 2013-18 and 2013-23 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-long term, from 0.9 per cent to 1.1 per cent.

Employment is projected to increase from 2,230,760 in the March 2013 year to 2,471,060 in the March 2018 year, with 240,300 new jobs expected to be created during this five year period. This includes strong recovery in the labour market in the 2014 and 2015 March years followed by moderating employment growth over the 2016 to 2018 March years.

Over the 10 year period to 2023, employment is projected to increase by 425,500 to 2,656,260, implying a 185,200 increase between 2018 and 2023. This equates to average annual employment growth of 48,000 between 2013 and 2018, and 37,000 between 2018 and 2023.

Strong growth in employment in the short-term will be balanced by rising labour supply attributed mainly to strong net migration gain during the 2014-16 period. However, as employment growth moderates and more importantly stabilises over the medium-longer term, the unemployment rate is projected to drop further, the level of decline depending on the rate of growth in labour supply during 2018-23.

Medium-long term labour productivity forecasts

Between 2006 and 2013, Statistics New Zealand estimates that the labour force grew by more than 1.2 per cent. With historically unprecedented high levels of net migration gain over the past year expected to remain well above long term average levels, the labour force is projected to grow at about 1.4 per cent and 1.3 per cent per year, respectively, between 2013-18 and 2018-2023.[4] Even with relatively high rates of labour supply growth, economic growth further out at long-term average levels can only be sustained from labour productivity gains.

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 medium-longer term greater reliance will need to be placed on rising productivity for economic growth.[5]

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[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.

[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 are being updated by Statistics New Zealand taking into account the 2013 Census along with 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

Reduction in labour supply will push up labour costs and lead to increased capital investment by firms. This is likely to result in annual productivity growth rising by 20 per cent more during 2018-23 (1.1 per cent) compared to 2013-18 average (0.9 per cent). The implied overall productivity growth during 2014 March year was 0.8 per cent and anticipated for the 2015 March year is also 0.8 per cent (PREEFU, August 2014).
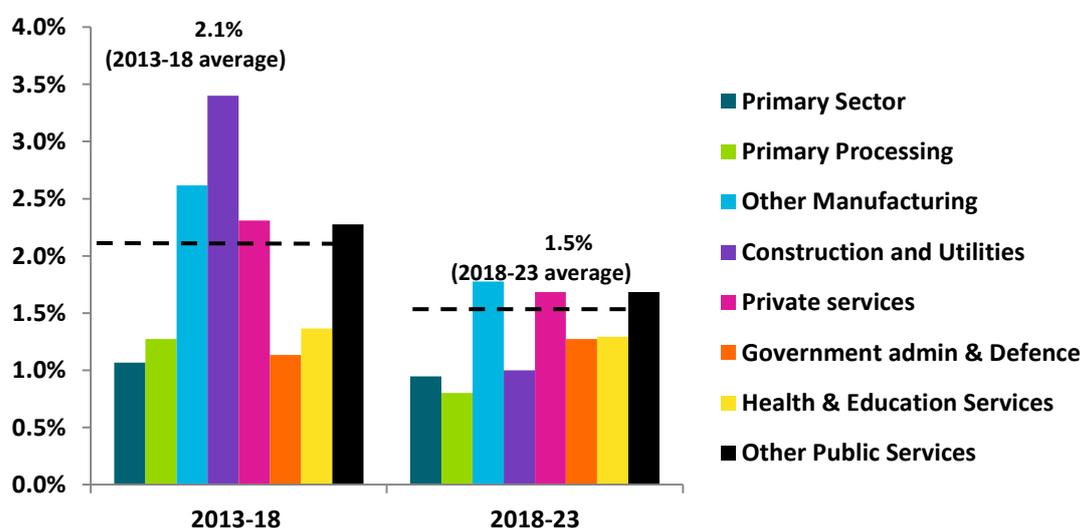
Employment forecasts by industry

We project employment growth in primary processing industries and manufacturing industries such as machinery and equipment and metal products to remain strong. Employment in service industries such as health and education sectors is also projected to remain stable over this period (see table 2). The Canterbury rebuild and other infrastructure projects across New Zealand will increase construction-related employment by about 3.4 per cent on average over the 2013-18 March year period, slowing to 1.0 per cent over the 2018-23 March year period.

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

Industry Groups	2013-18 (5 years)		*2018-23 (5 years)*		2013-23 (10 years)	
	(000)	(ann. %)	*(000)*	*(ann. %)*	(000)	(ann. %)
Primary sector	8.8	1.1%	*8.3*	*0.9%*	17.1	1.0%
Primary processing	6.6	1.3%	*4.4*	*0.8%*	11.0	1.0%
Other manufacturing	19.7	2.6%	*14.9*	*1.8%*	34.6	2.2%
Construction and utilities	33.9	3.4%	*11.2*	*1.0%*	45.1	2.2%
Private services sector	123.6	2.3%	*99.8*	*1.7%*	223.4	2.0%
Govt. admin & defence	6.4	1.1%	*7.7*	*1.3%*	14.1	1.2%
Heath and education	27.3	1.4%	*27.6*	*1.3%*	54.8	1.3%
Other public services	14.0	2.3%	*11.4*	*1.7%*	25.4	2.0%
Total	**240.3**	**2.1%**	***185.2***	***1.5%***	**425.5**	**1.8%**

Source: MBIE CGE model runs for 2013-18 and 2013-23 periods; *results for the 2018-23 period derived*.

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 0.9 per cent to 0.7 per cent higher per annum compared to overall employment growth of 2.1 per cent (2013-18) and 1.5 per cent (2018-23) per annum. We also project annual employment growth through this period to weaken sharply for skilled workers from 2.0 per cent (2013-18) to 1.1 per cent (2018-23). The demand for semi-skilled and elementary skilled workers is also projected to weaken over time and is expected to be lower than for skilled workers in the 2018-23 period.

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

Skill-levels	2013-18		*2018-23*		2013-23	
	(000)	**(ann. %)**	*(000)*	*(ann. %)*	**(000)**	**(ann. %)**
Highly skilled	144.2	3.0%	*123.4*	*2.2%*	267.6	2.6%
Skilled	27.7	2.0%	*16.0*	*1.1%*	43.7	1.5%
Semi-skilled	42.7	1.3%	*30.9*	*0.9%*	73.6	1.1%
Elementary skilled	25.7	1.3%	*14.9*	*0.7%*	40.6	1.0%
Total	**240.3**	**2.1%**	***185.2***	***1.5%***	**425.5**	**1.8%**

Source: MBIE CGE model runs for 2013-18 and 2013-23 periods; *results for the 2018-23 period derived.*
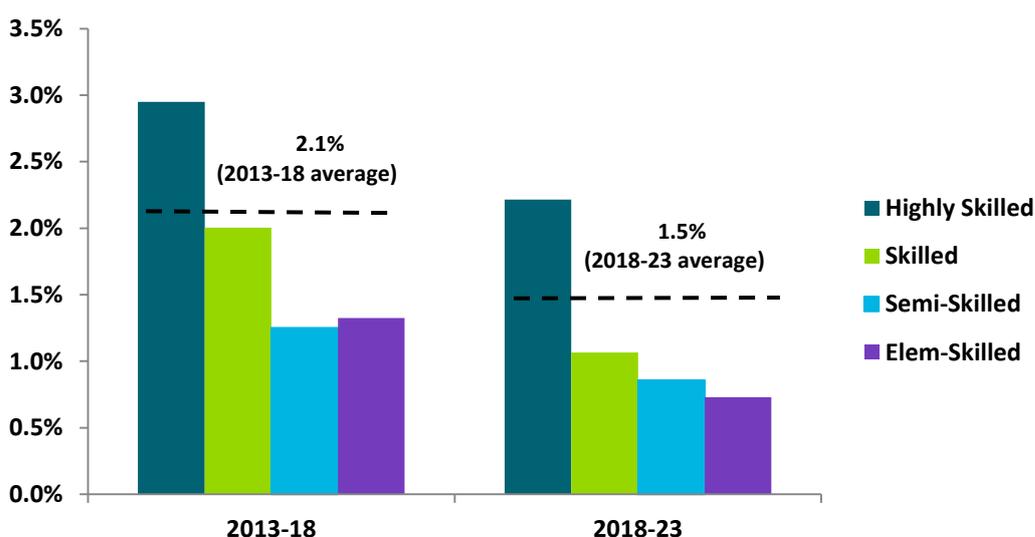
The stronger demand for skilled (trades workers in particular) and elementary skilled workers (such as building labourers) will contribute about 22 per cent of employment growth during the 2013-18 March year period. This is attributed to the Canterbury rebuild and other construction activity across New Zealand.

Table 4: Top 25 occupation groups[6] ranked by 2018-23 employment % changes

Occupation Groups	2013-18 (000)	(%)	2018-23 (000)	(%)
1 Office and Practice Managers	11.6	5.3%	13.2	4.7%
2 Business and Systems Analysts, and Programmers	9.8	4.8%	11.0	4.3%
3 ICT Managers	2.2	5.3%	2.3	4.3%
4 Advertising, Public Relations and Sales Managers	11.6	5.6%	10.5	4.0%
5 Legal Professionals	3.9	4.1%	4.4	3.8%
6 Animal Attendants and Trainers, and Shearers	1.3	3.7%	1.7	3.8%
7 Architects, Designers, Planners and Surveyors	6.5	4.8%	6.2	3.7%
8 Miscellaneous Specialist Managers	2.5	4.7%	2.4	3.7%
9 ICT Network and Support Professionals	1.8	5.0%	1.6	3.7%
10 Contract, Program and Project Administrators	6.0	5.1%	5.4	3.7%
11 Health Diagnostic and Promotion Professionals	3.0	5.0%	2.7	3.7%
12 Prison and Security Officers	2.6	4.1%	2.7	3.5%
13 Business Administration Managers	17.1	4.9%	14.6	3.4%
14 Media Professionals	2.3	3.8%	2.5	3.4%
15 Sports and Fitness Workers	3.8	4.5%	3.4	3.3%
16 Miscellaneous Hospitality, Retail and Service Managers	5.0	4.9%	4.0	3.3%
17 Automobile, Bus and Rail Drivers	3.1	4.1%	2.9	3.2%
18 Engineering Professionals	5.6	3.8%	5.5	3.2%
19 Natural and Physical Science Professionals	3.4	4.0%	3.2	3.2%
20 Education, Health and Welfare Services Managers	3.1	4.4%	2.7	3.2%
21 Sales, Marketing and Public Relations Professionals	4.4	3.9%	4.2	3.1%
23 Health and Welfare Support Workers	3.5	3.3%	3.9	3.1%
24 Accountants, Auditors and Company Secretaries	6.7	3.5%	6.9	3.1%
25 Glaziers, Plasterers and Tilers	2.9	5.4%	2.0	3.0%
26 Defence Force Members, Fire Fighters and Police	2.8	2.8%	3.4	3.0%
Total (for all 97 occupation groups)	**240.3**	**2.1%**	**185.2**	**1.5%**

Source: MBIE CGE model runs for 2013-18 and 2013-23 periods; 2018-23 period results derived.
Note: Occupational decomposition results to the industry employment projections.

Table 4 lists the 25 occupational groups with the fastest growth during the 2018-23 period. These suggest that amongst the top 25, 16 of them are Highly Skilled (Occupational groups at 100 and 200 ANZSCO levels), six Semi-skilled (at 400, 500 and 600 levels) and only two and one amongst the Skilled (300 level) and Elementary Skilled (at 700 and 800 levels), respectively. There is a much higher representation of the higher skilled (Highly Skilled and Skilled) occupational groups (18 out of 25) than the medium to lower skilled occupational groups (7 out of 25) amongst these top 25 occupational groups according to projected growth in the 2018-23 period.

While these top 25 occupational groups are ranked according to growth rate during the 2018-23 period, these growth levels and rates are generally lower than during the 2013-18 period as overall employment growth for the 2018-23 period is lower than for the 2013-18 period.

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

In building and construction activity, there is strong demand for construction related managers, support workers and labourers along with demand for architects, designers, planners and surveyors, in the 2013-18 period, even if not in the top 25 for the 2018-23 period.

There will be strong demand for managers in ICT, advertising, public relations and sales, business administration, miscellaneous hospitality, retail and service, as well as those in education, health and welfare services. Those in office and practice management along with contract, program and project administration will also be in demand in the next level of management.

The professionals in business and systems analysis and programming, legal, ICT network and support, health diagnostic and promotion, media, engineering, natural and physical science information, sales, marketing and public relations as well as architects and accountants are projected to be demand in both periods. Amongst the semi-skilled workers projected to be in demand are those in different worker categories (covering health and welfare and sports and fitness), prison and security officers and defence force members.

Employment of lower-skilled workers

Opportunities for lower-skilled workers (that is, semi-skilled and elementary workers in total) will be fewer than for the highly skilled workers and project to account for about 29 per cent (or 68,000 workers) of total employment growth to 2018, and about 25 per cent (or 46,000 workers) during the subsequent five years to 2023.

The main industries employing lower-skilled workers include food processing, retailing, accommodation and construction. These industries also have particular importance for younger workers (15-24 year olds). In 2013, approximately 19 per cent of younger workers were employed in retail trade, 16 per cent in accommodation and food services, 8 per cent in manufacturing and 7 per cent in agriculture, forestry and fishing.

Retirement effects

The employment growth described so far due to expanding industries and occupations exclude 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 past seven years. This means that while 48,000 new jobs could be created on average per year during the 2013-18 period, another 25,000 people are likely to be required to replace those retiring from the labour force. Over the subsequent five year period, 2018-23, retirement demand rises to 30,000, when new job growth slows down towards 37,000.

Overall retirement demand is projected to rise from 1.2 per cent in the 2006-13 seven year inter-census period to 1.3% during the next seven year period, 2013-20. Demand for workers arising from retirement will be spread across all skill levels but will see higher percentage growth among skilled and elementary skilled workers in both periods but the growth in numbers will be highest amongst the highly skilled (see Table 6).

Table 6: Retirement demand by skill-level, averages 2006-13 and 2013-20

Skill-levels	2006-13		2013-20	
	(000)	(%)	(000)	(%)
Highly-skilled	10	1.17%	12	1.20%
Skilled	4	1.24%	5	1.45%
Semi-skilled	6	1.10%	8	1.23%
Elementary skilled	5	1.22%	5	1.31%
Total	**25**	**1.2%**	**30**	**1.3%**

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 generally consistent with the average growth suggested by the 2014 PREEFU forecasts of the Treasury for the 2013-18 period. They include household or private consumption growth of 3.1 per cent, export growth of 2.5 per cent import growth of 4.0 per cent and Government or public consumption growth of 1.8 per cent on average for the 2013-18 period. The settings are modified for the longer 2013-23 period where slightly higher export and lower import growth are considered along with somewhat lower household consumption growth.

The modelling is focused on medium-longer term overall economic growth and growth across industries at the national account level of disaggregation. 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 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 2013 Census and for the 2006 Census year available earlier this year.