

# Labour Market Statistics: December 2015 quarter

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## Key facts

### Labour market at a glance

- Unemployment rate falls to 5.3 percent.
- Labour force participation rate falls for third consecutive quarter.
- Employment growth rises to 0.9 percent for the quarter.
- Annual wage inflation lowest since March 2010.

Employment at a glance (seasonally adjusted)		Dec 2015 quarter	Quarterly change	Annual change
		(000)	Percent	
Working-age population		3,656	+0.5	+2.3
Employed		2,369	+0.9	+1.3
Unemployed		133	-10.9	-6.7
Filled jobs		1,848	+1.0	+2.7
		Percent	Percentage points	
Employment rate		64.8	+0.3	-0.6
Unemployment rate		5.3	-0.7	-0.5
Labour force participation rate		68.4	-0.3	-1.0
Wages at a glance		Level	Percent	
Wage inflation (salary and wage rates, including overtime)	All sectors	1119	+0.4	+1.5
	Private sector	1124	+0.4	+1.6
	Public sector	1003	+0.5	+1.2
LCI analytical unadjusted		1212	+0.7	+2.7
Average ordinary time hourly earnings		\$29.38	+0.3	+2.1
Hours at a glance (figures seasonally adjusted)		Level	Percent	
Average weekly paid hours for FTEs (QES)	Ordinary time	37.88	+0.3	+1.0
	Total	38.66	+0.2	+0.8
Total weekly paid hours (QES)		57.1 (million)	+1.4	+3.8
Total actual weekly hours worked (HLFS)		79.1 (million)	+1.0	+2.1

Liz MacPherson, Government Statistician  
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## Commentary

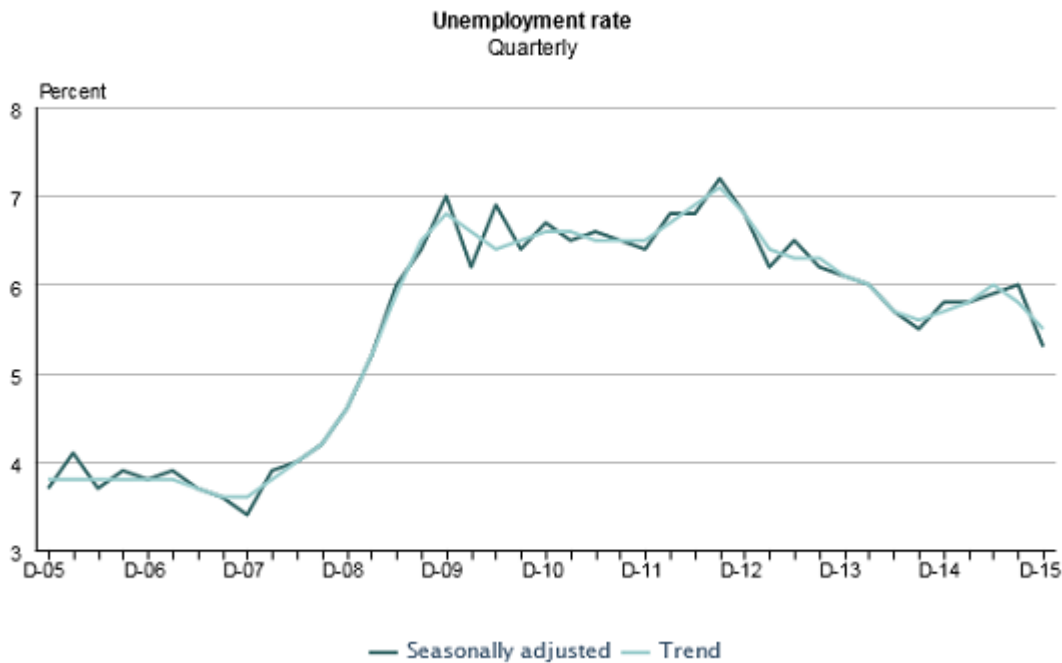
- Unemployment rate falls to 5.3 percent
- Falling participation contributes to lower unemployment
- Employment growth rises to 0.9 percent
- NEET rate at lowest level since September 2008
- Annual wage inflation lowest since March 2010

### Unemployment rate falls to 5.3 percent

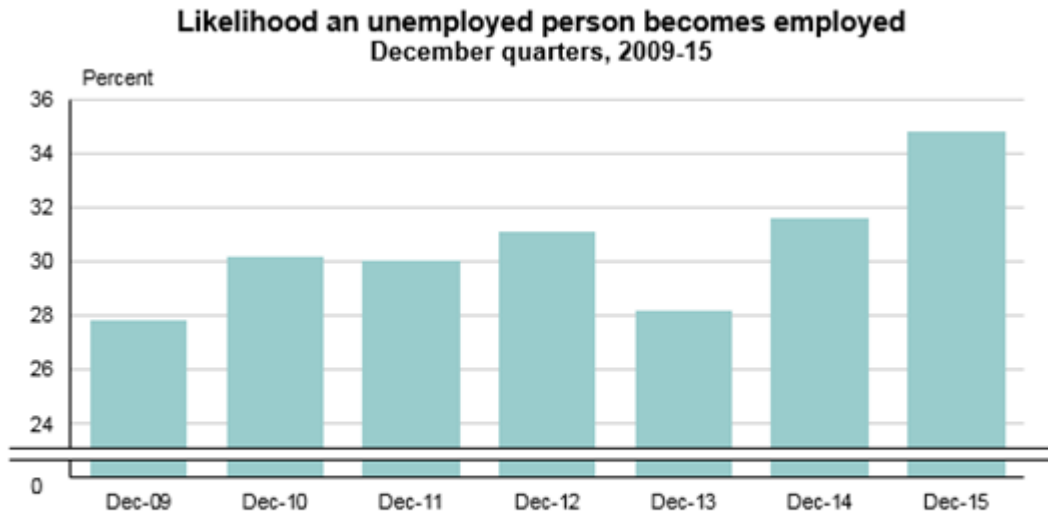
The unemployment rate fell 0.7 percentage points, to 5.3 percent, in the December 2015 quarter. This is the lowest unemployment rate since March 2009 (when it was 5.2 percent). This fall reflected 16,000 fewer people being unemployed over the quarter.

Compared with the December 2014 quarter, there were 10,000 fewer unemployed people – the unemployment rate fell 0.5 percentage points (from 5.8 percent).

The trend series shows the unemployment rate decreased from 5.8 percent to 5.5 percent in the December 2015 quarter. The trend series removes both the seasonal and irregular component of the series and reveals the underlying direction of movement.



The likelihood that an unemployed person would enter into employment, from one quarter to the next, increased in the December 2015 quarter compared with the same time in 2014.



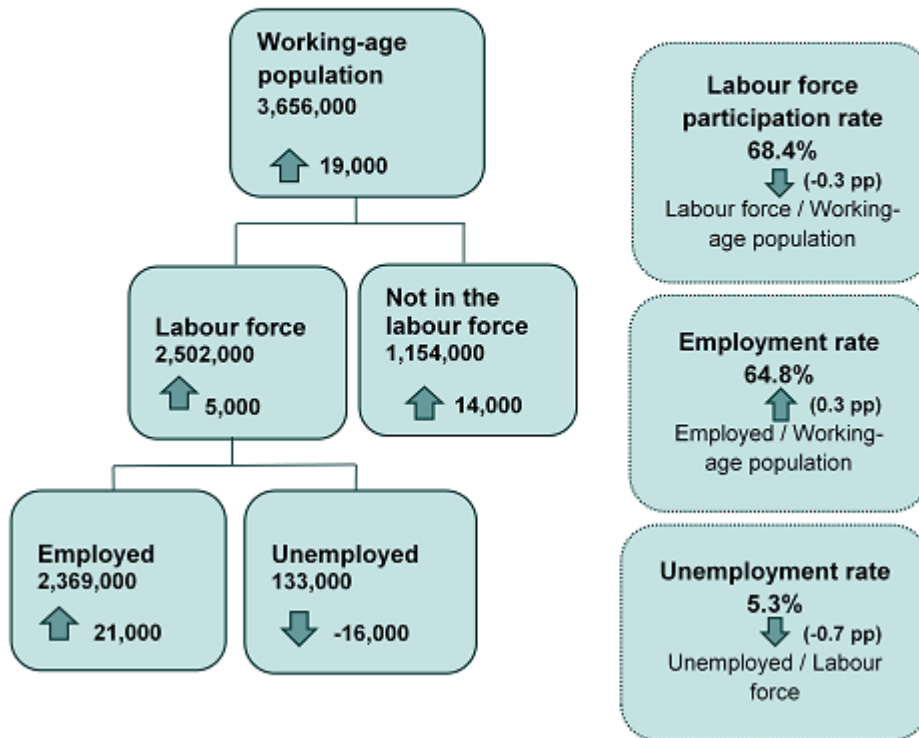
Source: Statistics New Zealand

## Falling participation contributes to lower unemployment

The labour force participation rate fell 0.3 percentage points over the latest quarter (to 68.4 percent), and 1.0 percentage point over the 2015 year – down from a record high in the March 2015 quarter. This is the third quarter in a row in which labour force participation has fallen.

The drop in labour force participation (coupled with a rise in employment) has contributed to the fall in unemployment over the December 2015 quarter.

**Labour market summary**  
**Seasonally adjusted**  
**December 2015 quarter**



The drop in labour force participation was a result of the labour force growing at a slower rate than the working-age population. This gives rise to an increasing number of people not participating in the labour force; 14,000 more in the December 2015 quarter, and 61,000 over the year. This annual increase was partly from there being more people who were retired (up 31,500), and more people at home but not looking after children (up 15,400).

**Unemployment rate improves for both men and women**

The unemployment rate fall came from both fewer men (down 7,000) and women (down 9,000) being unemployed over the December 2015 quarter. This resulted in the unemployment rate for men falling 0.5 percentage points (to 5.0 percent) and that for women falling 0.8 percentage points (to 5.7 percent).



Over the 2015 year, the number of unemployed men was unchanged, while the number of unemployed women was down 10,000.

The fall for women came from both short- and long-term unemployment. Short-term unemployment is defined as being unemployed for 26 weeks or less, and long-term unemployment is 27 or more weeks.

There were 6,000 fewer women in short-term unemployment in the year to December 2015. Within short-term unemployment, there were 2,700 fewer who were unemployed for up to 13 weeks and 3,300 fewer who were unemployed for 14 to 26 weeks. Long-term unemployment fell by 3,900 women.

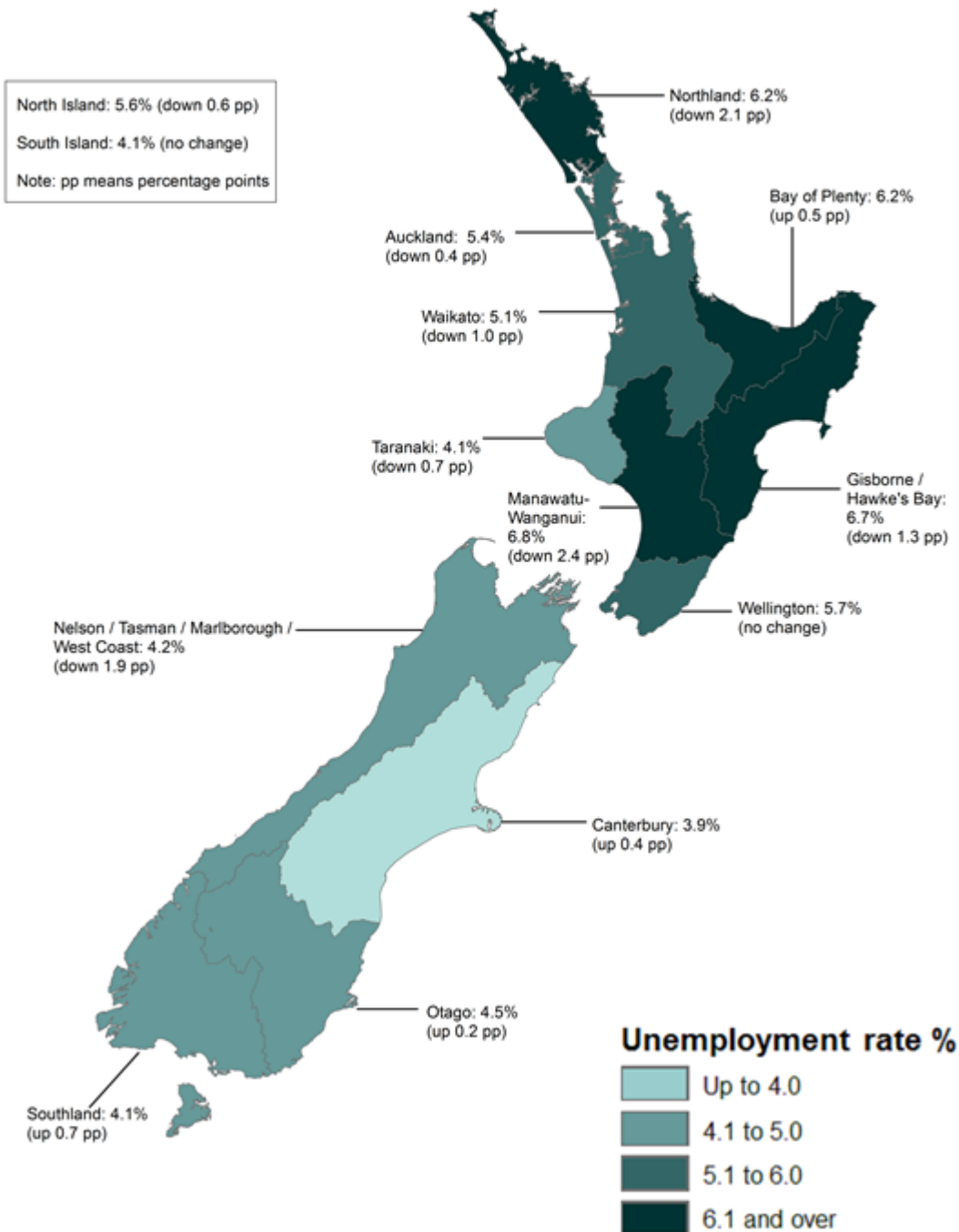
### **Unemployment rate down in North Island, and unchanged in South Island**

In the year to December 2015, the unemployment rate for the North Island fell 0.6 percentage points, to 5.6 percent, while that for the South Island was unchanged, at 4.1 percent.

The gap between the North and South Island unemployment rates has been closing over the last three quarters, and is now the smallest since June 2012.

# Unemployment rates by regional council area

## December 2015 quarter (compared with December 2014 quarter)



## **Unemployment rates fall for Pacific peoples and Māori**

The unemployment rate for Pacific peoples dropped over the 2015 year to 9.7 percent (from 11.4 percent a year earlier). This is the lowest rate since December 2008 when the unemployment rate was 7.7 percent. The number of Pacific peoples employed increased by 14,500 over the year, resulting in a 1.6 percentage point increase in the employment rate for Pacific peoples.

The unemployment rate for Māori fell 1.6 percentage points to 10.6 percent in the year ended December 2015. However, the employment rate for Māori fell 1.4 percentage points and labour force participation rate fell 2.8 percentage points, meaning that the number of Māori in the labour force has not kept up with growth of the working-age population.

## **Employment growth rises to 0.9 percent for quarter**

The number of people employed grew 0.9 percent in the December 2015 quarter, with 21,000 more people employed than in the previous quarter. Employment growth was similar for men and women; 1.0 percent more women and 0.9 percent more men were employed over the quarter. Over the year, the number of people employed increased 1.3 percent (up 31,000).

The employment rate increased 0.3 percentage points (to 64.8 percent) in the December 2015 quarter, but compared with a year earlier it fell 0.6 percentage points.

The number of filled jobs reported by businesses from the Quarterly Employment Survey (QES) increased 1.0 percent over the December 2015 quarter, and 2.7 percent over the year.

## **Employment growth strong for 20- to 29-year-olds**

Over the year to December 2015, the working-age population grew by 82,200 people (2.3 percent). Just over 40 percent of this population growth (34,100) was in the 20- to 29-year age group.

Employment growth was also strong for this age group, particularly for 25- to 29-year-olds. There were 8,000 more 20- to 24-year-olds, and 18,700 more 25- to 29-year-olds employed over the year to December 2015.

Annual employment growth was strong for both men and women aged 20 to 29 years – 16,900 more men and 9,900 more women in this age group were employed over 2015.

Employment growth for 45- to 49-year-olds was also significant, with 7,000 more being employed over the year.

## **Full-time and part-time employment both rise for men and women**

Full-time employment grew 0.6 percent (11,000 people) in the December 2015 quarter. Full-time employment increased 0.5 percent for women and 0.6 percent for men.

Part-time employment grew 2.5 percent (13,000 people) over the latest quarter, recovering from a decline in the previous quarter. There was a 3.0 percent increase in part-time employment for women and a 2.1 percent increase for men.

The number of people who were underemployed decreased by 20,200 over 2015 – 13,900 for women and 6,300 for men. Underemployment refers to part-time workers who are willing and available to work more hours than they usually do.

### Employment growth picks up in Auckland

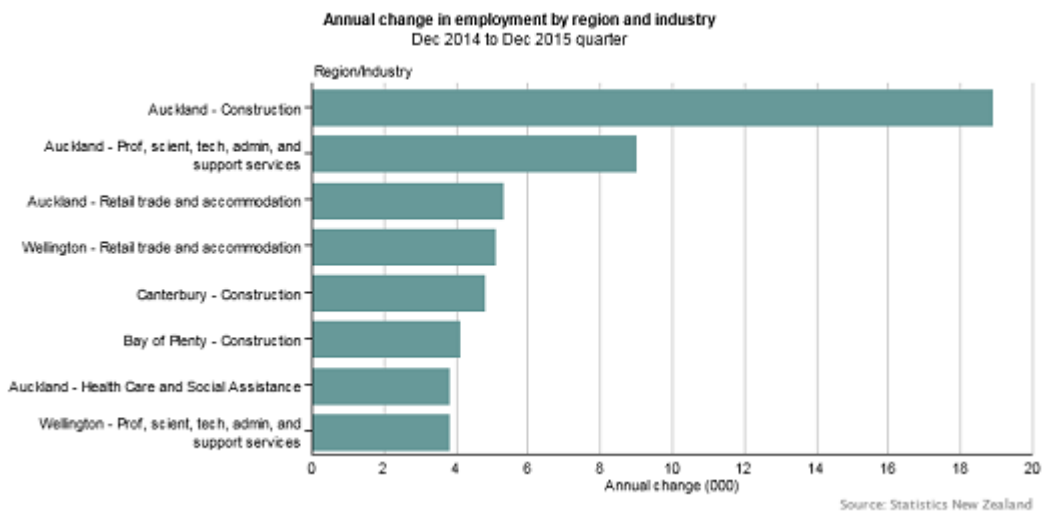
Annual employment growth in Auckland increased 2.9 percent in the December 2015 quarter, after dropping to 1.5 percent last quarter. This came from 23,100 more people being employed in Auckland over the year. Manawatu-Wanganui and Wellington also had employment growth over the year (up 8,600 and 6,800, respectively).

### Construction still leads employment growth

The construction industry was the largest contributor to annual employment growth, with 27,500 more people employed over the year to December 2015. This is up from the September quarter’s annual growth of 20,500, but still down from a peak of 31,200 in the year to September 2014.

The majority of construction employment growth was in Auckland, with 18,900 more people employed over 2015. Canterbury and Bay of Plenty also contributed to employment growth in the construction industry (up 4,800 and 4,100, respectively).

Technicians and trade workers also had a large employment growth, with 20,800 more people employed in this occupation group over the year. More than half these workers were employed within the construction industry.



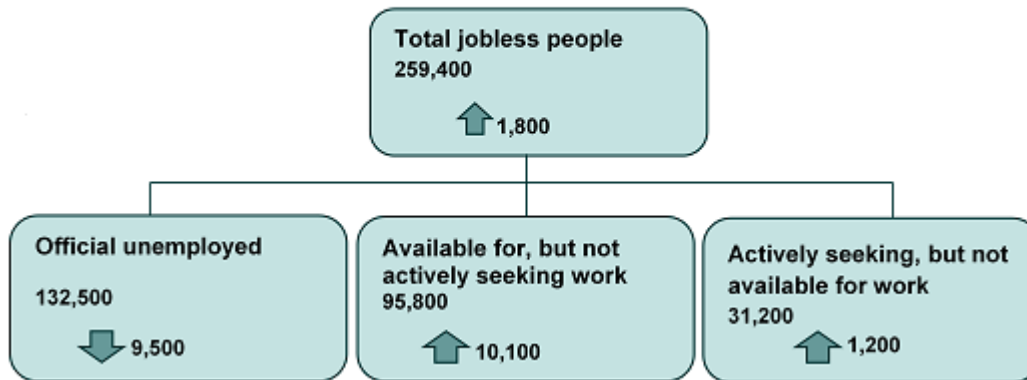
The largest contributions to the rise in filled jobs over 2015 (reported by business from the QES) came from construction (up 19,800), health care and social assistance (up 8,600), and accommodation and food services (up 7,500).

### Number of jobless still rising

Despite the drop in the number of unemployed people, the number of jobless increased 1,800 (to 259,400) over 2015. The jobless include those officially unemployed, those available for but not actively seeking work, and people seeking but not available for work. This is a useful indicator of how many people are on the fringe of the labour market. The group of jobless people who are not officially unemployed made up 11.2 percent of those not in the labour force.



**Jobless people summary**  
**Annual change – December 2015 quarter**



### **NEET rate at lowest level since September 2008**

The proportion of youth (15–24 years) not in employment, education, or training (NEET) fell 0.1 percentage points (to 10.9 percent) over the latest quarter. This was the lowest level since September 2008.

The NEET rate for 15- to 19-year-olds fell 0.2 percentage points to 6.5 percent – the lowest since the series began in March 2004. However, the NEET rate for 20- to 24-year-olds increased 0.1 percentage points (to 15 percent).

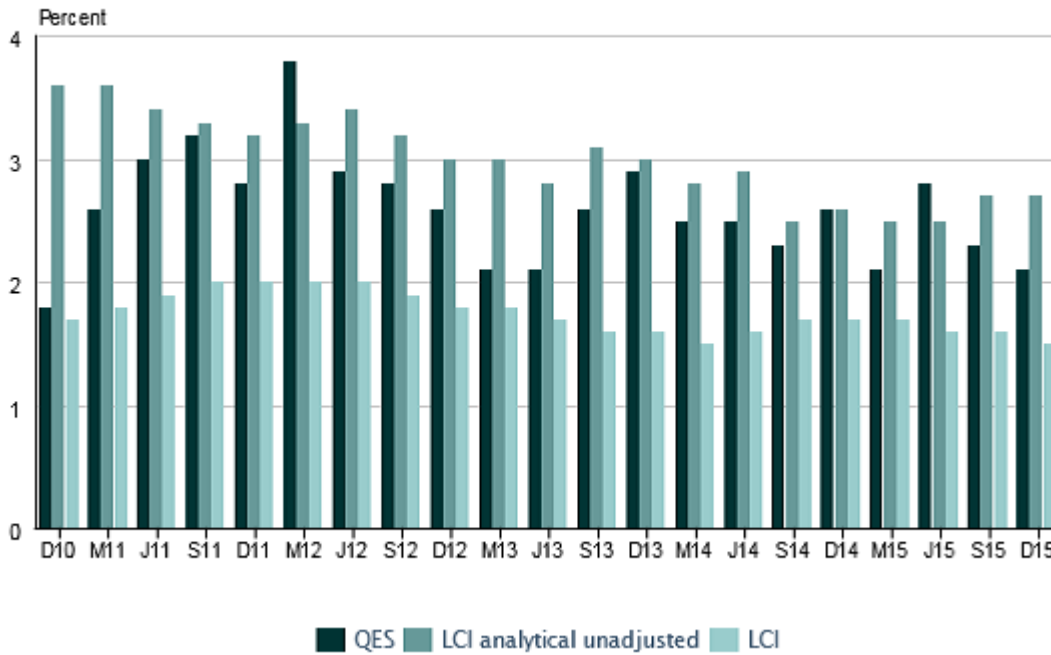
The NEET rate for women moved up 0.3 percentage points (to 12.6 percent), up from its record low of 12.3 percent in the September quarter, while the NEET rate for men dropped 0.5 percentage points (to 9.3 percent).

### **Annual wage inflation lowest since March 2010**

QES hourly earnings and labour cost index (LCI) figures are not seasonally adjusted. In the year to December 2015 quarter:

- The LCI (including overtime) increased 1.5 percent – the lowest annual increase since the year to the March 2010 quarter. (This measure of wage inflation reflects changes in the rates that employers pay to have the same job done to the same standard).
- The unadjusted LCI increased 2.7 percent. (This allows for quality changes within occupations as well as wage inflation.)
- Average ordinary-time hourly earnings increased 2.1 percent, down from 2.3 percent in the year to September 2015. (This measures the average hourly wage bill across all jobs in surveyed industries.)
- Private sector annual wage growth was 1.6 percent – the lowest since September 2010. Public sector annual wage growth was unchanged, at 1.2 percent for the fifth consecutive quarter.

**Annual percentage change in salary and ordinary time wage rates**  
December 2010 quarter to December 2015 quarter



Source: Statistics New Zealand

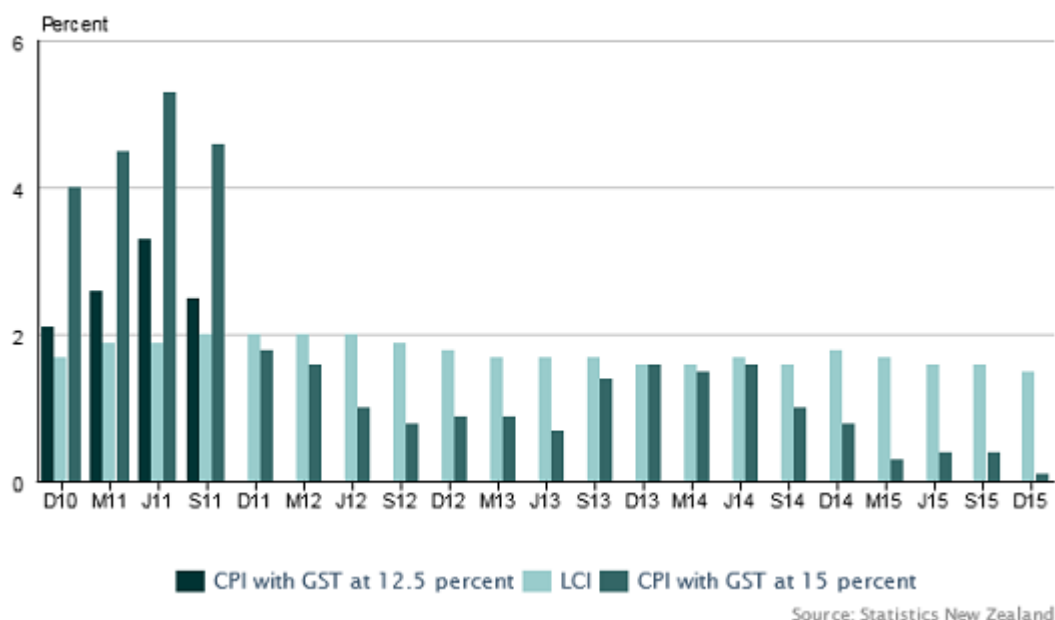
### LCI continues to outpace inflation

In the year to December 2015, prices of goods and services bought by households, as measured by the consumers price index (CPI) increased 0.1 percent – the lowest annual increase since 1999.

See [Consumer Price Index: December 2015 quarter](#).

The LCI salary and wage rates (including overtime) increased 1.5 percent over the same period. Wage inflation has now been higher or equal to the CPI for more than four years.

**Annual percentage change in CPI and LCI**  
December 2010 quarter to December 2015 quarter



### Quarterly mean increase of 2.5 percent is lowest in 22 years

Of all salary and ordinary time wage rates in the LCI sample, 54 percent rose in the year to December 2015, down from 55 percent last quarter and the lowest since March 2014. Over the quarter, 18 percent of all salary and ordinary time wage rates increased – this increase is similar when compared to previous December quarters.

Of the 54 percent that increased over the latest year, there was:

- a median (middle) increase of 2.4 percent (the lowest since the year to the June 2014 quarter).
- a mean increase of 3.0 percent (the lowest since the year to the March 2000 quarter).

Of the 18 percent that increased over the latest quarter, there was:

- a median (middle) increase of 2.0 percent (the lowest since the March 2000 quarter).
- a mean increase of 2.5 percent (the lowest since the December 1993 quarter).

### Wage growth in Canterbury construction eases more than for rest of New Zealand

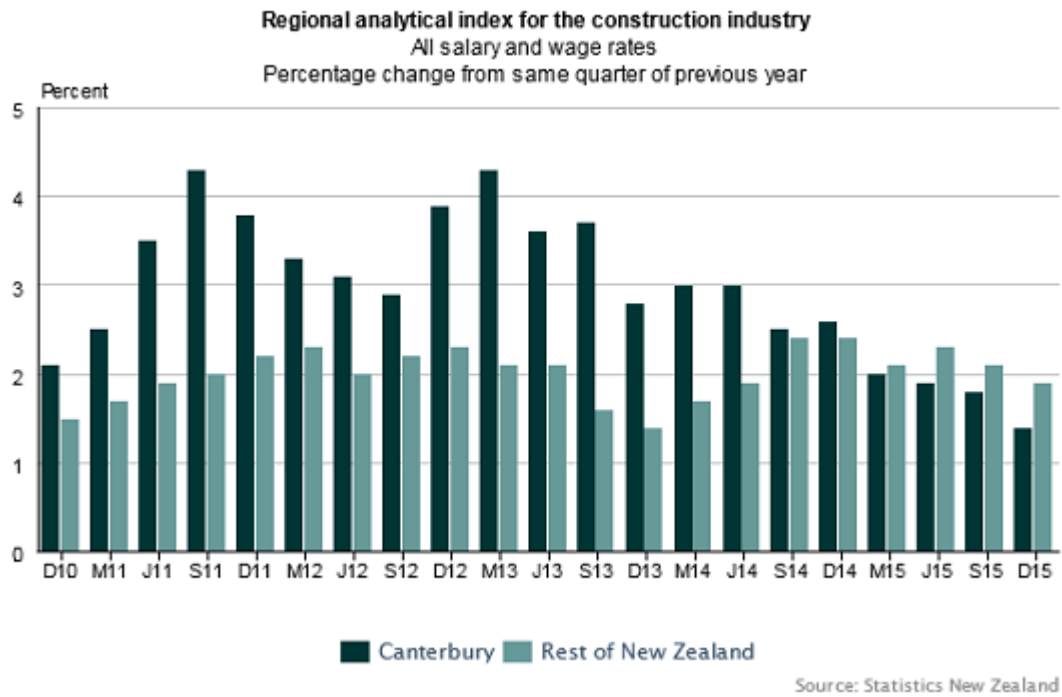
In the year to the December 2015 quarter, salary and wage rate growth (including overtime) in the Canterbury construction industry continued to ease, down to 1.4 percent. This compares with 2.6 percent at the same time in 2014.

For the rest of New Zealand, wage rate growth in the construction industry also eased, down to 1.9 percent from 2.4 percent at the same time in 2014.

In the year to the December 2015 quarter, the mean increase for surveyed salary and ordinary time wage rates that rose, in the Canterbury construction industry, fell below the rest of New Zealand for the first time since the series began in the September 2010 quarter.

The annual mean increases of the rates that rose for the December 2015 quarter were:

- 3.6 percent for the Canterbury region
- 4.0 percent for the rest of New Zealand.



For more detailed data about labour market statistics, see the Excel tables in the 'Downloads' box.

# Definitions

## About labour market statistics

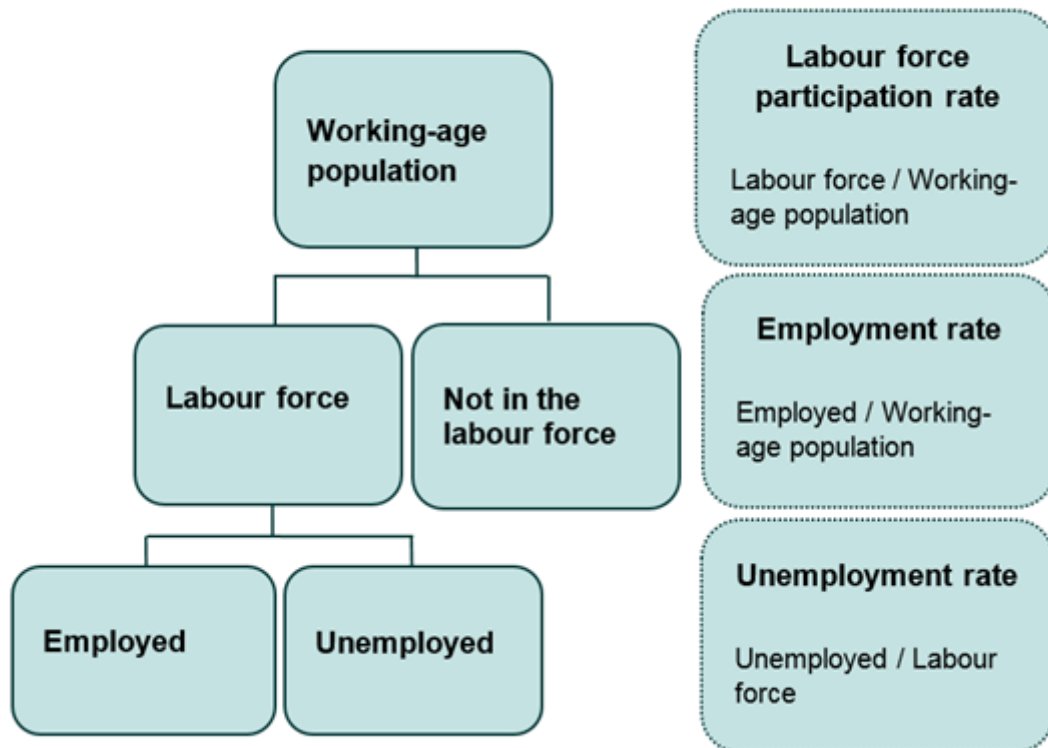
The labour market statistics information release combines data from three surveys to present a broad picture of the labour market.

From the **Household Labour Force Survey (HLFS)** we provide a picture of New Zealand's labour force – these statistics relate to employment, unemployment, and people not in the labour force.

The **Quarterly Employment Survey (QES)** estimates the demand for labour by New Zealand businesses – the levels and changes in employment, total weekly gross earnings, total weekly paid hours, average hourly and average weekly earnings, and average weekly paid hours in the industries we survey.

The **Labour Cost Index (LCI)** measures changes in salary and wage rates for a fixed quantity and quality of labour input. It is a measure of wage inflation, reflecting changes in the rates that employers pay to have the same job done to the same standard.

### Overview of the labour market



[Labour force categories used in the Household Labour Force Survey](#) has more information.

## More definitions

**Business Register:** the list of all economically significant enterprises in New Zealand, which is maintained by Statistics NZ.

**Employed:** people in the working-age population who, during the reference week, did one of the following:

- worked for one hour or more for pay or profit in the context of an employee/employer relationship or self-employment
- worked without pay for one hour or more in work which contributed directly to the operation of a farm, business, or professional practice owned or operated by a relative
- had a job but were not at work due to: own illness or injury, personal or family responsibilities, bad weather or mechanical breakdown, direct involvement in an industrial dispute, or leave or holiday.

**Employment rate:** the number of employed people expressed as a percentage of the working-age population. The employment rate is closely linked to the working-age population definition.

**Enterprise:** a business or service entity operating in New Zealand.

**Filled jobs:** the total number of full-time jobs, part-time jobs, and working proprietors.

**Full-time equivalent (FTE) jobs:** the total number of full-time jobs plus half the number of part-time jobs. Does not include working proprietors.

**Full-time jobs:** jobs where the employee works for 30 hours or more per week.

**Full-time/part-time status:** full-time workers usually work 30 hours or more per week, even if they did not do so in the survey reference week because of sickness, holidays, or other reasons. Part-time workers usually work fewer than 30 hours per week.

**Hours worked:** actual hours are the number of hours a person worked in the reference week (including overtime). Usual hours refers to the number of hours a person normally works in a week (including overtime).

**Index reference period:** the benchmark with which prices in other periods are compared (eg if the index number in a later period is 1150, prices have increased by 15.0 percent since the index reference period). Prices for later periods can also be compared in the same fashion. The LCI has an index reference period of the June 2009 quarter (=1000).

**Industry:** determined from the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006. Businesses in QES are classified using ANZSIC06 industries. See ANZSIC 2006 – industry classification for more information about ANZSIC06 and its implementation into the QES and other Statistics NZ collections.

**Jobless:** people who are either officially unemployed, available but not seeking work, or actively seeking but not available for work. The 'available but not seeking work' category is made up of the 'seeking through newspaper only', 'discouraged', and 'other' categories.

**Labour force:** members of the working-age population, who during the survey reference week, were classified as 'employed' or 'unemployed'.

**Labour force participation rate:** the total labour force expressed as a percentage of the working-age population. Labour force participation is closely linked to how the working-age population is defined.

**NEET (not in employment, education, or training):** young people aged 15–24 years who are unemployed (part of the labour force) and not engaged in education or training, and those not in the labour force and not engaged in education or training for many reasons.

**NEET rate:** the total number of youth (aged 15–24 years) who are not in education, employment, or training (NEET), as a proportion of the total youth working-age population.

**Not in the labour force:** any person in the working-age population who is neither employed nor unemployed. For example, this residual category includes people who:

- are retired
- have personal or family responsibilities such as unpaid housework and childcare
- attend educational institutions
- are permanently unable to work due to physical or mental disabilities,
- were temporarily unavailable for work in the survey reference week
- are not actively seeking work.

**Part-time jobs:** jobs where the employee works for less than 30 hours per week.

**Price index:** measures the change in price between time periods for a given set of goods and services. It summarises a set of prices for a variety of goods and services collected from a number of outlets.

**Seasonally adjusted series:** removes the seasonal component present when dealing with quarterly data. Seasonal patterns obscure the underlying behaviour of the series.

**Statistically significant:** statistical assessment of whether a change in the series is systematic or simply due to chance. Systematic movements occur when the change is greater than its respective sampling error.

**Trend series:** removes both the seasonal and irregular component of the series and reveals the underlying direction of movement in a series.

**Unemployed:** all people in the working-age population who, during the reference week, were without a paid job, available for work, and had either actively sought work in the past four weeks ending with the reference week, or had a new job to start within the next four weeks.

**Unemployment rate:** the number of unemployed people expressed as a percentage of the labour force.

**Working proprietors:** includes sole proprietors, partners, or shareholders in a limited liability company who actively engage in the business or its management. Please note that working proprietors in businesses with no employees are outside the scope of the QES and are not included in the estimate of filled jobs.

**Working-age population:** the usually resident, non-institutionalised, civilian population of New Zealand aged 15 years and over.

## **Related links**

### **Next release**

*Labour Market Statistics: March 2016 quarter* will be released on 4 May 2016.

[Subscribe to information releases](#), including this one, by completing the online subscription form.

[The release calendar](#) lists information releases by date of release.

### **Past releases**

[Labour Market Statistics](#) has links to past releases (from December 2014 quarter).

[Household Labour Force Survey](#) has links to past releases.

[Quarterly Employment Survey](#) has links to past releases.

[Labour Cost Index \(Salary and Wage Rates\)](#) has links to past releases.

## **Related information**

[Household Labour Force Survey population rebase from 2013 Census: Includes regional benchmarks](#) for the revised HLFS results, which provides information on the recent population rebase.

[A guide to unemployment statistics \(second edition\)](#) (published 2014) provides guidance to data users on the different features of four unemployment measures.

[User guide for wage and income measures](#) (published 2013) has more information on the various Statistics NZ income and wage measures.

[Extended region and age series now available](#) (published 2014) introduces two key classifications in response to our users' needs.

[Future of the Household Labour Force Survey](#) (published 2014) outlines changes to the HLFS and how these changes will affect the survey from mid-2016 onwards.

[See Employment and unemployment](#) for more reports and articles about New Zealand's labour market.



## Data quality

### Period-specific information

This section is for information that changes between periods.

- [Response rates](#)
- [Rounding in LCI](#)

### General information

This section has information about data that does not change between releases.

- [Comparison between HLFS and QES](#)
- [Comparison between LCI and QES](#)
- [Data sources](#)
- [Survey samples](#)
- [Weights](#)
- [Outliers](#)
- [Sampling errors](#)
- [Classifications](#)
- [Imputation](#)
- [Seasonal adjustment](#)
- [Rounding](#)
- [LCI-specific information](#)
- [More information](#)

## Period-specific information

### Response rates

Survey	Reference period	Response rate
HLFS	Each week during the quarter (4 October 2015 – 2 January 2016)	Target: 90 percent Achieved: 86.2 percent
QES	The pay week ending on, or before, 20 November 2015	Target: 89 percent Achieved: 88.6 percent
LCI	Pay rates at 15 November 2015	Target: 94 percent Achieved: 94.2 percent

See [New quality measures for the Household Labour Force Survey](#) for more information on the sample rate and response rates.

### Rounding in LCI

We round index numbers to the nearest index point, which affected some percentage increases in the December 2015 quarter. Below is a table of percentage changes calculated on unrounded index numbers.

<b>Percentage changes calculated from rounded and unrounded index numbers, December 2015 quarter</b>				
	<b>Quarter percentage change</b>		<b>Annual percentage change</b>	
	rounded	unrounded	rounded	unrounded
<b>All salary and wage rates</b>				
Public sector	0.5	0.5	1.2	1.3
<b>Ordinary time wage rates</b>				
Local government	0.5	0.6	1.8	1.8

## **General information**

### **Comparison between HLFS and QES**

#### **Use**

HLFS – measures the number of people employed from an individual perspective. Measures the number of hours people usually and actually work. Regional estimates are more robust due to how they are weighted.

QES – use when wanting to measure the number of filled jobs from a business's perspective, or when wanting to measure the number of hours businesses pay for.

#### **Coverage**

HLFS – includes agricultural workers, self-employed workers, unpaid family workers, and those on unpaid leave among the employed. Limited to the working-age population, aged 15 years and older.

QES – jobs filled by overseas workers resident in New Zealand for less than 12 months are included. Filled jobs are not limited by age.

#### **Reference period**

HLFS – surveys all weeks of the quarter.

QES – based on a reference week in the middle of the quarter.

### **Comparison between LCI and QES**

#### **Use**

LCI – measures changes in wage inflation.

QES – measures the change in hourly earnings a business has to pay on average across all jobs.

#### **Coverage**

LCI – jobs filled by paid employees in all occupations and in all industries except private households employing staff.

QES – does not include the earnings of those working in agriculture, fisheries, or earnings from self-employment.

## Measures

### LCI

- Adjusted LCI measures the rates employers pay to have the same job completed to the same standard.
- Controls for changes in sector, industry, and occupation by assigning fixed weights. Weights reflect relative importance of job descriptions for different combinations of sectors of ownership, occupation, and industry.
- Unadjusted LCI measures the rates employers pay to have the same job completed to a differing standard (allowing the quality of labour within occupations to improve).

### QES

- Reflects changes in composition of paid workforce, and changes to earnings paid by surveyed businesses within industries, and between industries.
- Compositional effects between industries can affect the QES when industries with higher or lower earnings than the average total hourly earnings for all industries change in relative importance (eg make up a bigger share of the total hours).
- Compositional changes within industries can affect the QES, as the composition of the paid workforce is reflected (eg the occupations that firms hire).

## Data sources

### HLFS

We source HLFS data through surveying and interviewing across a period of 13 weeks. The information obtained relates to the week before the interview. We first interview respondents face-to-face at their home. Subsequent interviews are by telephone wherever possible. Respondents can also file self-completed questionnaires.

Where practicable, we obtain information directly from each household member. Otherwise, a proxy interview is conducted, in which we obtain details from another adult in the household.

### QES

Data source is quarterly electronic and postal surveys. We collect quarterly data from businesses for the middle month of the respective quarter.

### LCI

A quarterly postal survey of employers provides data for a fixed set of job descriptions. Each quarter, we survey salary and wage rates for what employers pay at the 15th of the middle month of the quarter.

## Survey samples

### HLFS

The sample contains about 15,000 private households and about 30,000 individuals each quarter. We sample households on a statistically representative basis from areas throughout

New Zealand. The HLFS is sampled so that is representative of geographic region, urban and rural areas, ethnic density, and socio-economic characteristics of the population.

Households stay in the survey for two years. Each quarter, one-eighth of the households in the sample is rotated out and replaced by a new set of households.

Following every census we review the HLFS sample. After the 2013 Census, we implemented an improved sample design.

The new sample will be rolled in over eight quarters. Each quarter, one-eighth of the households in the old sample is rotated out and replaced by a set of households in the new sample. By changing the sampling units one rotation group at a time, we reduce the risk of affecting the labour force outcomes. The first set of respondents in the improved design was rotated in for the December 2014 quarter.

Every quarter we monitor the quality of the sample. We did not find any evidence to suggest the new rotation group was driving unexpected movements in labour force outcomes.

## **QES**

Sample of approximately 18,000 business locations selected from a population of economically significant enterprises in surveyed industries.

## **LCI**

We collect salary and ordinary time wage rates for about 6,000 job descriptions each quarter (and nearly 1,000 overtime descriptions).

Approximately 2,000 businesses provide information.

## **Coverage**

### **HLFS**

The target population for the HLFS is the civilian, usually resident, non-institutionalised population aged 15 years and over. The statistics in this release do not cover:

- long-term residents of homes for older people, hospitals, and psychiatric institutions
- inmates of penal institutions
- members of the permanent armed forces
- members of the non-New Zealand armed forces
- overseas diplomats
- overseas visitors who expect to be a resident in New Zealand for less than 12 months.

## **QES**

The QES samples economically significant enterprises in surveyed industries. An economically significant enterprise is one that meets at least one of the following criteria:

- has greater than \$30,000 annual GST expenses or sales
- has at least three employees for its rolling mean employment (the average employee count over the previous 12 months)

- recorded over \$40,000 of income in the IR10 annual tax return
- is part of a group of enterprises
- is a new GST registration that is compulsory, special, or forced
- is registered for GST.

The QES does not include data from the agriculture, fisheries, and several smaller industries.

## **LCI**

Jobs filled by paid employees in all occupations and in all industries except private households employing staff. We extended coverage to include jobs filled by paid employees aged under 15 years when the index was reweighted and re-expressed on a base of the June 2001 quarter (=1000).

## **Weights**

### **HLFS**

Obtaining a sample that represents the population is essential when it comes to producing reliable labour force estimates. The HLFS goes through three stages of weighting to achieve this.

First, we give every household in the HLFS sample an initial weight. This is based on the probability of the household being selected for the survey. Currently the HLFS is in a period of sample transition, where we are replacing existing sampling units with units drawn using a different design and frame. The sample transition will occur between the December 2014 and September 2016 quarters. This will affect the probabilities of a given household being selected into the survey. We apply an adjustment to the initial weights during the transition period to use data collected from both new and existing sampling units.

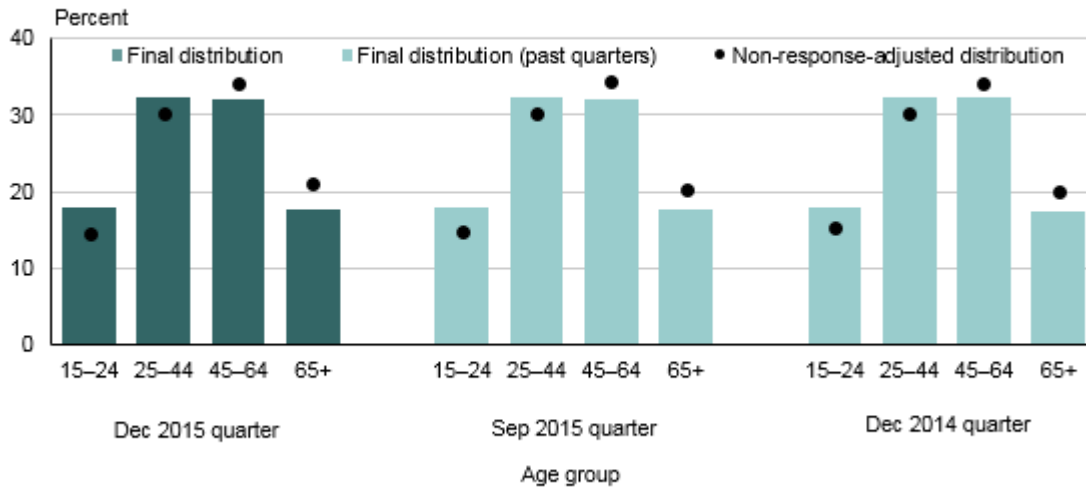
Second, this weight is adjusted, by month and region, for households that did not respond. This results in a 'non-response-adjusted' weight.

Third, we adjust the sample weights to known population benchmark totals (calibration process). The HLFS benchmarks are: overall sex by five-year age groups, Māori by sex by age group, and the 12 regions. This process results in a final weight for each household.

### **Pre- and post-calibration weight**

The following figure shows that while the distribution of the pre- and post-calibration weights differs within a quarter, the difference between the weights typically does not change from quarter to quarter.

## Age distribution in the HLFs By age group



Source: Statistics New Zealand

The undercoverage rate indicates how representative the pre-calibrated sample is. The higher the undercoverage rate, the less representative the pre-calibrated sample.

Usually the undercoverage rate in the HLFs is around 20 percent. The overall undercoverage rate for the HLFs in the December 2015 quarter was 19.8 percent. This compares with 18.8 percent in the September 2015 quarter and 16.1 percent in the December 2014 quarter.

### QES

We allocate weights to each of the selected business locations. These represent the population weights based on employee counts sourced from the Business Register.

### LCI

Each job description used in calculating the index is assigned a weight that reflects the relative importance of the job description within its sector of ownership, industry, and occupation group.

Weights were calculated using: 2013 Census of Population and Dwellings information on the relative importance of occupations within each sector by industry group, Business Register (previously known as Business Frame) information on the relative importance of industry groups within each sector, and pay rates surveyed in the June 2014 quarter.

### Outliers

During the seasonal adjustment process, X-13-ARIMA-SEATS can give less weight to the irregular component. Specifically, if the estimated irregular component at a point in time is sufficiently large compared with the standard deviation of the irregular component as a whole, then the irregular component at that point can be downweighted or removed completely and re-estimated. We refer to such observations as partial- and zero-outliers, respectively. In practice, the downweighting of outliers does little to seasonally adjusted data, but the impact of the outliers on the trend series will generally be reduced. However, if an outlier ceases to be an outlier as more data becomes available, then significant revisions to the trend series become possible.

The table below shows any partial (P) and zero (Z) outliers for the last year of each time series.

Outliers						
Quarters	Male employed	Female employed	Male unemployed	Female unemployed	Male not in the labour force	Female not in the labour force
Dec 2014						P
Mar 2015						
Jun 2015	P					
Sep 2015						

### Sampling errors

Survey data is subject to two types of possible error: sampling error and non-sampling error.

**Sampling error** is a measure of variability that occurs by chance because we survey a sample of eligible businesses, rather than the entire population. The magnitude of the sampling error is controlled by the size of the sample and sound sample selection practice.

**Non-sampling error** includes errors arising from biases in the patterns of response and non-response, inaccuracies in reporting by respondents, errors introduced by modelled data, and errors in the recording and coding of data. Non-sampling error is, by definition, difficult to measure. The magnitude of non-sampling error is not measured.

If a movement is larger than its corresponding sampling error, it is statistically significant.

### HLFS

Sampling errors are calculated using the jackknife method. It is based on the variation between estimates of different subsamples taken from the whole sample.

When we conduct a proxy interview, more than 90 percent of related people answer correctly for key variables. A typical proxy rate in the HLFS is around 30–35 percent. This excludes quarters when a supplement was attached to the HLFS.

### QES

Sampling errors are calculated using the Horvitz Thompson method.

### LCI

Based on a purposive sample (ie based on judgement); sampling errors are difficult to estimate.

### Classifications

The labour market statistics release includes specific statistics about industry, occupation, study, ethnicity, and region. This section lists the classifications we use for these statistics.

- Industry statistics (NZSIOC, based on ANZSIC06): see [Industrial classification](#) for more information
- Occupation statistics (ANZSCO): see [occupation](#) for more information
- Skill level (ANZSCO): see [skill levels of New Zealand jobs](#) for more information
- Māori benchmarks see [Household Labour Force Survey Population Rebase: December 2008 quarter](#) for more information
- Region: see [regional council](#) for more information
- Total response ethnicity: see [Statistical Standard for Ethnicity – 2005](#) for more information

Email [info@stats.govt.nz](mailto:info@stats.govt.nz) for further information about the classifications we use.

## Imputation

Imputation is the process of estimating data for surveyed respondents or businesses that do not respond.

### HLFS

We impute for people who have missing values for their sex, age, or full-time employment variables (ie whether the respondent is in or seeking full-time or part-time employment).

### -QES

Ratio imputation – used for businesses entering the sample in the current quarter. We use employee count from the Business Register to impute.

Historical imputation – used for ongoing businesses. Data is imputed by multiplying the previous quarter's data by the average movement of responding businesses of similar characteristics.

### LCI

We carry forward the previous price for the relevant position that did not reply.

Email [info@stats.govt.nz](mailto:info@stats.govt.nz) for further information about the imputation methods, or the effects of imputation on the final dataset.

## Seasonal adjustment

For any series, we can break the estimates down into three components:

- trend (direction of the series) – for example, women increasing their labour force participation over time
- seasonal (typical calendar events) – for example, a large pool of students looking for work in the summertime
- irregular (random movements) – for example, increase in employment for a one-off event.

Seasonally adjusted series have the seasonal component removed. Trend series have both the seasonal and irregular components removed, and reveal the underlying direction of movement in a series.



We revise seasonally adjusted figures each quarter. This enables the seasonal component to be better estimated and then removed from the series.

See [Seasonal adjustment in Statistics New Zealand](#) for more information.

## **Rounding**

### **HLFS**

We round seasonally adjusted and trend series to the nearest thousand. Unadjusted series are rounded to the nearest hundred. We calculate quarterly and annual changes for figures on unrounded numbers. The one exception is percentage-point changes – which are based on rounded figures.

### **QES**

Filled jobs, FTEs, total hours, and total earnings are rounded to the nearest hundred. Average hours, average earnings, and hourly earnings are rounded to two decimal places.

### **LCI**

Index numbers are rounded to the nearest whole number. We calculate percentage changes on rounded numbers. For this reason, total percentage changes for an index may not appear consistent with the percentage changes for its components.

## **LCI-specific information**

### **Index calculation formula and base**

We calculate the LCI using the price-relatives form of the base-weighted Laspeyres formula, and express it on a base of the June 2009 quarter (=1000). The index's calculation base is periodically updated to reflect changes in the sector of ownership of organisations.

### **Quality control**

The LCI is a quality-controlled measure. Only changes in salary and wage rates for the same quality and quantity of work are reflected in the index. We achieve this by asking respondents to provide reasons for movements in salary and wage rates. If a movement is due to more than one reason, we also ask the respondents to indicate how much of the movement is due to each reason.

In theory, these job descriptions should remain fixed between index revisions. In practice, many descriptions change over time, usually as a result of changes to contractual arrangements or because specific employees are being tracked through time. If a newly negotiated contract involves an increase in the number of ordinary time hours worked per week, then we amend the description and an adjustment is made to ensure that the pay rate movement used in the index relates to the same quantity of work as specified in the new contract.

Similarly, rates being paid for job descriptions in the survey may change partly or wholly because employees undertaking these jobs have become more experienced, more (or less) proficient or productive, better qualified, have taken on additional responsibilities, or have been promoted. Components of salary and wage rate movements that are due to changes of this type in the

quality of work are not reflected in index movements. The policy of excluding increases due to service increments and merit promotions is consistent with this approach.

We also exclude one-off payments in lieu of pay rises, as they do not result in changes to pay rates, as such.

Regular fixed allowances and regular fixed bonuses are included in surveyed pay rates. Where included, these are specified in job descriptions. However, we exclude payments such as commissions and irregular bonuses, as these payments are usually performance related.

In instances where allowances, penal rates, and other payments (eg commissions), which have not previously been included in surveyed rates, are incorporated into base rates, only the overall effect of such changes is reflected in the index.

### **Contract indexation**

Parties that engage in commercial contracts use a range of price indexes produced by Statistics NZ in their indexation clauses (also known as contract escalation clauses). An indexation clause provides both parties to a contract with an agreed procedure for adjusting an originally contracted price, to reflect changes in costs or prices during the life of the contract.

Contract indexation: A Guide for Businesses (published 2009) provides information on the price indexes we produce and issues relating to their use in indexation clauses. The guide also outlines some points to consider when preparing an indexation clause, and includes an example of the mechanics of a simple indexation formula.

### **Analytical unadjusted series**

An analytical unadjusted index series, based on ordinary time pay rates collected in the LCI sample, is available in the tables of this release (see the 'Downloads' box). The analytical unadjusted series is an additional measure intended to complement the official LCI and QES indicators and provide customers with a fuller picture on the wages front. The analytical unadjusted series is not affected by relative employment shifts between industries and between occupations, but, in addition to price change, it does reflect quality change within occupations.

In simple terms, the approaches we take in compiling the published and analytical unadjusted series are summarised as:

Published index:

- often tracks employees, but does not show performance-related increases or service increments
- commonly links in new employees (without showing change).

Analytical unadjusted index:

- often tracks employees, and shows performance-related increases and service increments
- shows any change when new employees replace incumbents.

The LCI is a price index that measures change in pay rates for a fixed quality and quantity of labour input. We show price-related change in rates reported by respondents, such as those to reflect the cost of living, to match market rates, to retain staff, and to attract staff. We don't show

changes in reported rates that are the result of service increments, merit promotions, increases (and decreases) relating to the performance of individual employees, and change in hours worked are not shown in the index, as they are considered to represent quality or quantity change.

The analytical unadjusted index retains fixed weights for occupations within industries, within sectors of ownership, but is based on a matched sample of reported rates for the previous and current quarters before quality control. In addition to price change, it reflects quality change within occupations, such as change in the performance of individual employees, change in the qualifications, responsibility or experience of employees filling surveyed positions, and the effect of different employees replacing incumbent employees in surveyed positions at lower or higher rates.

Rates for which the pay periods reported by respondents (eg per year, week, or hour) differ from those for the previous period, and rates where change is wholly or partly due to change in hours worked, are excluded from the matched sample. Typically, we exclude between 1 and 2 percent of surveyed rates from the unadjusted index each quarter for these reasons.

We calculate the analytical unadjusted index using a matched sample of reported rates for the previous and current quarters. Expenditure weights are used to weight movements in reported rates from the previous quarter to the current quarter. To derive the expenditure weights, we use the price changes (after quality control) of job positions in the sample (from the base period to the previous quarter) to scale base-period expenditure weights (which are then assigned to job positions in the sample).

Note: the LCI is designed to measure change in pay rates for a fixed quality and quantity of labour input. The sample of surveyed pay rates is not particularly suitable for preparing a measure that includes quality change. This is due in part to the fact that some positions in the survey follow individual employees (with corresponding pay rates subject to both quality and price change) and some positions specify particular points on pay scales (which are usually subject only to price change). In general, we track individual employees for positions surveyed in the private sector, and for positions surveyed in the public sector there is a mix of points on pay scales and individual employees being tracked.

The analytical unadjusted index reflects quality change within occupations. How well this is measured partly depends on how well the sample represents entrances and exits of employees, and on whether the sample replacement practice is unbiased in this regard (eg in some cases, replacement employees are incumbent employees filling other positions rather than new employees filling the existing positions – this can happen when there is a delay filling vacancies in surveyed positions). In addition, the analytical unadjusted index tends to reflect the effect of turnover in, and the cessation of, existing positions, but not the price and/or quality effect associated with employees being hired to fill new positions. An unadjusted measure designed from scratch might use the average pay rate, within each surveyed firm, of all employees filling jobs in each surveyed occupation.

The published LCI is a fixed-weight price index that measures changes in pay rates for a fixed quality and quantity of labour input. The index is not affected by relative shifts in the occupational and industrial composition of the pool of paid employees. It is useful in the context of the extent to which changes in businesses' input labour costs might put pressure on the output prices they charge for goods and services.

The analytical unadjusted LCI series has fixed weights for occupations within industries, within sectors of ownership, so is not affected by relative employment shifts between industries and

occupations. However, it does reflect quality shifts within occupations. The index uses weights based on the mix of employment in occupations and industries evident in 2013.

It does not take account of the effect of any subsequent shifts in the mix of employment in occupations and industries. In addition, it will not reflect:

- the effect of very new or emerging occupations and industries
- the effect of employers mitigating the effect of skill shortages by substituting away from occupations showing high relative price change to occupations showing lower relative price change (eg from carpenter to builder's labourer, or from registered nurse to nurse aide).

### **Timing of published data**

Labour market statistics are published within six weeks after the end of the quarter's reference period.

### **Confidentiality**

Only people authorised by the Statistics Act 1975 are allowed to see your individual information, and they must use it only for statistical purposes. Your information is combined with similar information from other people, households or businesses to prepare summary statistics.

### **More information**

[See more information about the Household Labour Force Survey](#)  
[See Quarterly Employment Survey](#) for more information.

Statistics in this release have been produced in accordance with the [Official Statistics System principles and protocols for producers of Tier 1 statistics](#) for quality. They conform to the Statistics NZ Methodological Standard for Reporting of Data Quality.

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## Revisions

### Revisions to Household Labour Force Survey

Each quarter, we apply the seasonal adjustment process to the latest quarter and all previous quarters. Every estimate is subject to revision each quarter as new data is added, which means that seasonally adjusted estimates for previous quarters may change slightly. In practice, estimates more than two years from the end-point will change little.

The September 2015 quarter unemployment rate remained unchanged at 6.0 percent after we applied seasonal adjustment.

This table lists the changes in estimates between the current and previous quarters for the seasonally adjusted data.

Percent revision from last estimate, seasonally adjusted						
Quarter	Male employed	Female employed	Male unemployed	Female unemployed	Male not in labour force	Female not in labour force
Dec 2014	0.01	-0.11	0.65	0.51	-0.07	0.24
Mar 2015	0.00	-0.01	-0.16	0.10	0.02	-0.07
Jun 2015	0.01	0.07	0.27	0.19	0.04	-0.07
Sep 2015	-0.00	0.06	-0.77	-0.84	0.02	-0.11

This table presents revisions for the trend estimates. Trend revisions are generally larger than those of the seasonally adjusted data.

Percent revision from last estimate, trend						
Quarter	Male employed	Female employed	Male unemployed	Female unemployed	Male not in labour force	Female not in labour force
Dec 2014	0.00	-0.03	0.09	0.07	-0.04	-0.46
Mar 2015	-0.02	-0.02	0.28	0.38	-0.00	-0.26
Jun 2015	0.08	-0.01	0.81	0.88	-0.08	-0.04
Sep 2015	0.32	0.34	-2.82	-3.72	-0.09	-0.25

The table below shows the average of all such absolute revisions, expressed relatively, and gives some indication to what extent the current estimates might be revised when the revised data for the next quarter becomes available.

Mean absolute percent revisions				
	Seasonally adjusted		Trend	
	1-step	4-step	1-step	4-step
Male employed	0.04	0.08	0.16	0.17
Female employed	0.06	0.11	0.24	0.24
Male unemployed	0.49	0.80	1.79	1.85
Female unemployed	0.50	0.86	1.81	1.83
Male not in labour force	0.10	0.16	0.37	0.37
Female not in labour force	0.09	0.15	0.35	0.37

In the table above, a '1-step ahead' revision is one we make to an estimate one quarter later. For example, if in the March 2010 quarter the seasonally adjusted estimate of females employed was first published as 1,020,000, and then in the June 2010 quarter this same estimate was revised to 1,022,000, this would be an upward revision of 0.20 percent.

A '4-step ahead' revision is one we make to an estimate four quarters later. For example, if in the March 2010 quarter release the trend estimate of females not in the labour force was first published as 665,000 and then in the March 2011 release, one year later, the trend estimate of females not in the labour force for the March 2010 quarter was revised to 664,000, this would be a decrease of 1,000, or a downward revision of 0.15 percent.

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## Tables

See the Excel tables in the 'Downloads' box on this page. If you have problems viewing the files, see [opening files and PDFs](#).

### Household labour force survey tables

1. People employed, unemployed, and not in labour force, by sex, seasonally adjusted series
2. People employed, unemployed, and not in labour force, by sex, trend series
3. People employed, unemployed, and not in labour force, by sex
4. People employed, unemployed, and not in labour force, by age group
5. People employed, unemployed, and not in labour force, by ethnic group
6. People employed, unemployed, and not in labour force, by regional council
7. People employed, by industry and sex
8. The jobless: those without a job and wanting a job, by sex
9. Total actual hours worked
10. People employed, by employment status and sex
11. People underemployed, by sex
12. People employed, unemployed, not in the labour force, and total actual hours worked, seasonally adjusted series
13. Harmonised unemployment rates in OECD countries, latest available
14. People employed, unemployed, and not in labour force, by sex and formal study status
15. Labour force and education status of those aged 15–24 years, by age group, seasonally adjusted series.
16. People employed

### Quarterly employment survey tables

1. Full-time equivalent employees (FTEs), actual, seasonally adjusted, and trend series
2. Filled jobs, actual, seasonally adjusted, and trend series
3. Full-time equivalent employees (FTEs), by ANZSIC06 industry
4. Total weekly paid hours, actual, seasonally adjusted, and trend series
5. Total weekly gross earnings, actual, seasonally adjusted, and trend series
6. Average weekly paid hours for FTEs, actual, seasonally adjusted, and trend series
7. Average weekly earnings for FTEs, by sector
8. Average hourly earnings, by sector
9. Average hourly earnings, by sex

### Labour cost index tables

1. Salary and wage rates by sector, all industries/occupations combined
  - 2.1 Salary and wage rates by industry and by occupation, public sector
  - 2.2 Salary and wage rates by industry and by occupation, public sector, percentage change from previous quarter
  - 2.3 Salary and wage rates by industry and by occupation, public sector, percentage change from same quarter of previous year
  - 3.1 Salary and wage rates by industry and by occupation, private sector
  - 3.2 Salary and wage rates by industry and by occupation, private sector, percentage change from previous quarter
  - 3.3 Salary and wage rates by industry and by occupation, private sector, percentage change

- from same quarter of previous year
- 4.1 Salary and wage rates by industry, all sectors combined
- 4.2 Salary and wage rates by industry, all sectors combined, percentage change from previous quarter
- 4.3 Salary and wage rates by industry, all sectors combined, percentage change from same quarter of previous year
- 5.1 Salary and wage rates by occupation, all sectors combined
- 5.2 Salary and wage rates by occupation, all sectors combined, percentage change from previous quarter
- 5.3 Salary and wage rates by occupation, all sectors combined, percentage change from same quarter of previous year
- 6.1 Distribution of annual movements, all sectors combined
- 6.2 Proportions of salary and wage rates increasing, private sector and all sectors combined
- 6.3 Distribution of annual increases by reason, all sectors combined
- 7.1 Median and mean increases, all sectors combined
- 7.2 Median and mean increases by sector
- 8.1 Published and analytical unadjusted indexes for the private sector
- 8.2 Published and analytical unadjusted indexes for all sectors combined
- 9.1 Labour cost index, base expenditure weights by sector, cost, occupation, and skill level
- 9.2 Labour cost index, base expenditure weights by industry

## Supplementary tables

### Household labour force survey supplementary tables

The following tables provide unadjusted statistics for the Canterbury region. They are similar to tables 3, 4, 7, 8, 9, 11, and 14 above.

1. People employed, unemployed, and not in labour force in Canterbury, by sex
2. People employed, unemployed, and not in labour force in Canterbury, by age group
3. People employed in Canterbury, by industry and sex
4. The jobless: those without a job and wanting a job in Canterbury, by sex
5. Total actual and usual hours worked in Canterbury
6. Underemployment in Canterbury, by sex
7. People employed, unemployed, and not in labour force in Canterbury, by sex and formal study status

A longer time series of the supplementary tables is available on request.

### Labour cost index supplementary tables

The following supplementary tables relate to the construction industry for Canterbury and the rest of New Zealand.

1. Regional analytical index for the construction industry, all salary and wage rates
2. Regional analytical index for the construction industry, salary and ordinary time wage rates
3. Regional analytical mean increases for the construction industry, all sectors combined

## Access more data on Infoshare

Infoshare allows you to organise data in a way that best meets your needs. You can view the resulting tables onscreen or download them.

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For this release, select the following categories from the Infoshare homepage:

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### **Next release**

*Labour Market Statistics: March 2016 quarter* will be released on 4 May 2016