

Household Labour Force Survey: September 2014 quarter

Embargoed until 10:45am – 05 November 2014

Key facts

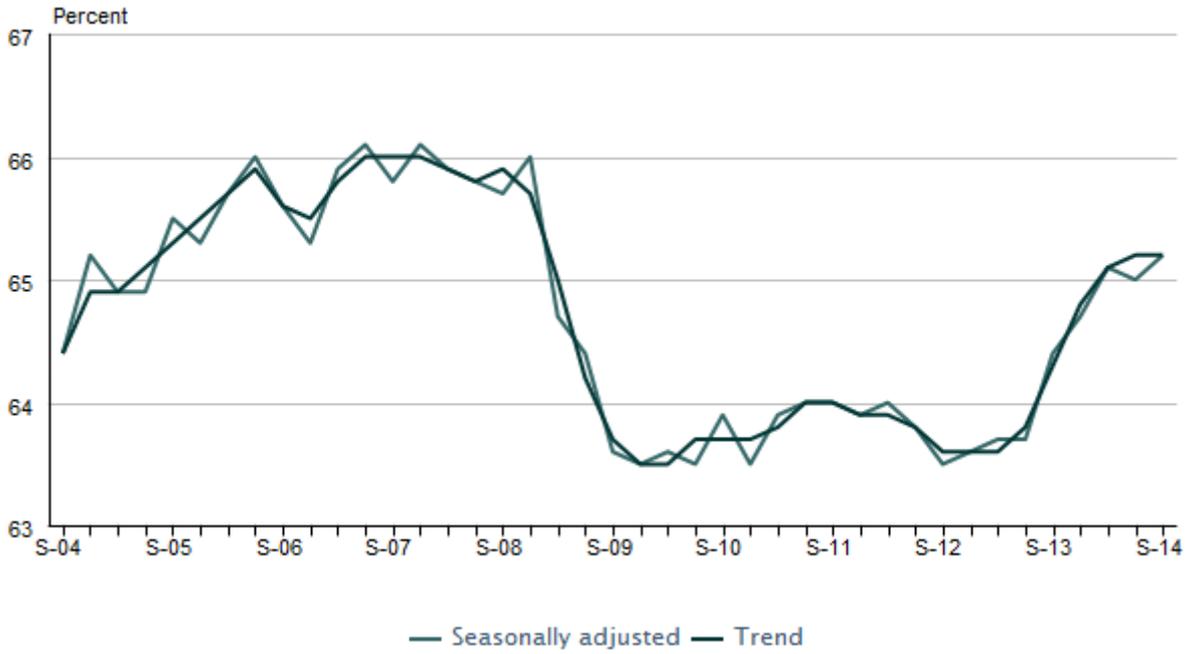
In the September 2014 quarter compared with the June 2014 quarter:

- The number of people employed increased by 18,000.
- The employment rate increased 0.2 percentage points, to 65.2 percent. This came as employment growth outpaced population growth.
- The unemployment rate fell 0.2 percentage points to 5.4 percent.
- The number of people unemployed decreased by 4,000.
- The labour force participation rate increased 0.1 percentage points, to 69.0 percent.

All figures are seasonally adjusted.

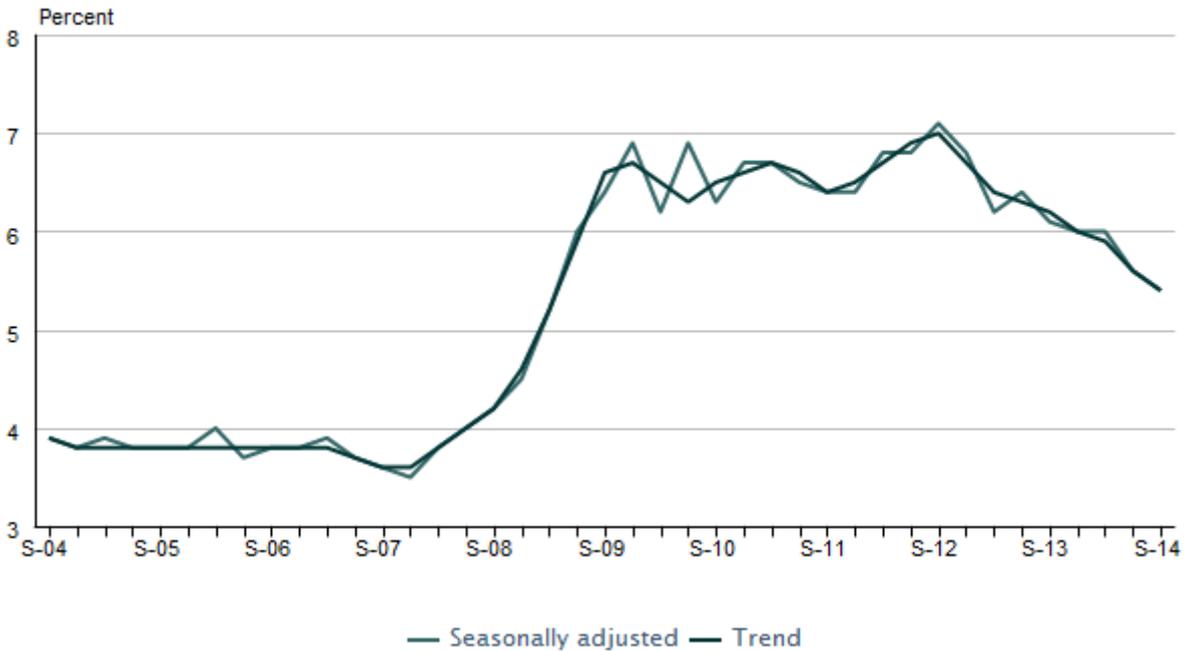
	September 2014 quarter	Quarterly change	Annual change
	(000)	(Percent)	
Employed	2,346	+0.8	+3.2
Unemployed	134	-2.8	-9.6
Not in the labour force	1,116	+0.1	+0.6
Working-age population	3,595	+0.4	+1.8
	(Percent)	(Percentage points)	
Employment rate	65.2	+0.2	+0.8
Unemployment rate	5.4	-0.2	-0.7
Labour force participation rate	69.0	+0.1	+0.4

Employment rate Quarterly



Source: Statistics New Zealand

Unemployment rate Quarterly



Source: Statistics New Zealand

Liz MacPherson, Government Statistician
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Commentary

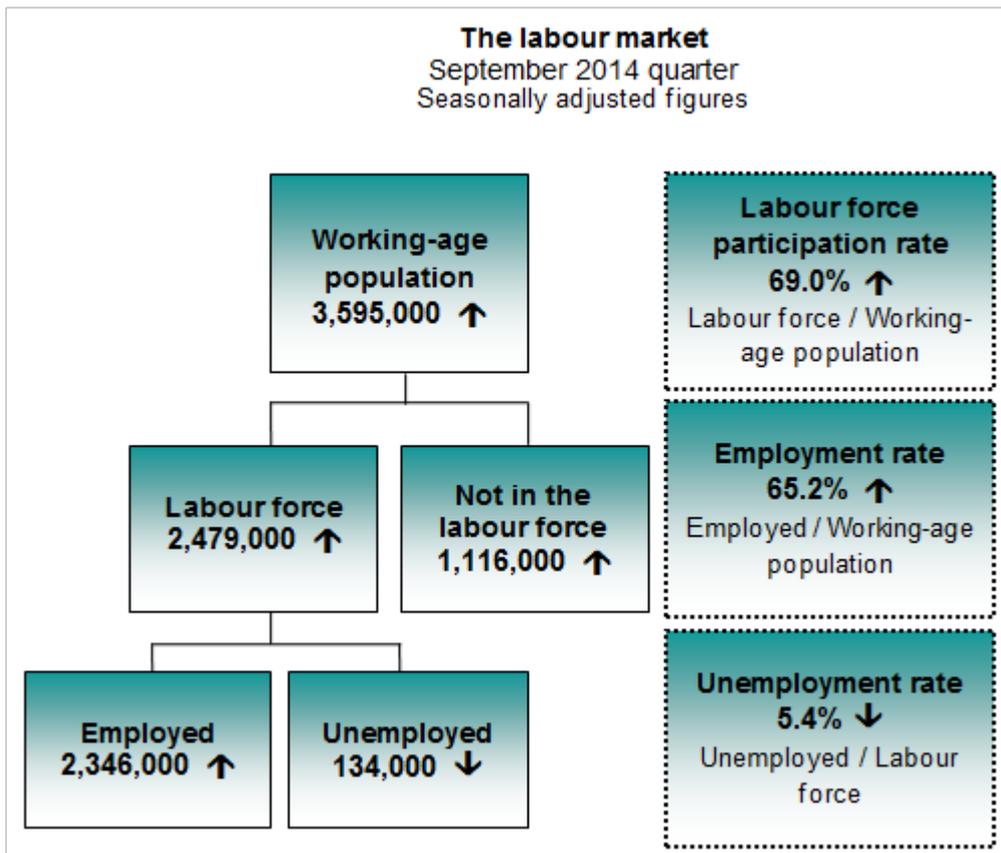
- Employment growth outpaces population growth
- Unemployment continues to fall
- Labour force participation still at record levels
- Canterbury leads national employment growth
- Employment outcomes improve for most ethnic groups
- NEET rate is flat
- We're changing the way we report our labour market statistics
- Evaluating new series for seasonality

Overview

In the September 2014 quarter, the number of people **employed** increased by 18,000, while the **working-age population** increased by 15,000. The **employment rate** increased 0.2 percentage points to 65.2 percent, in seasonally adjusted terms.

The **unemployment rate** fell to 5.4 percent over the quarter. This decrease reflected 4,000 fewer people **unemployed**.

The **labour force participation rate** increased to 69.0 percent as the **labour force** grew by 14,000 people.



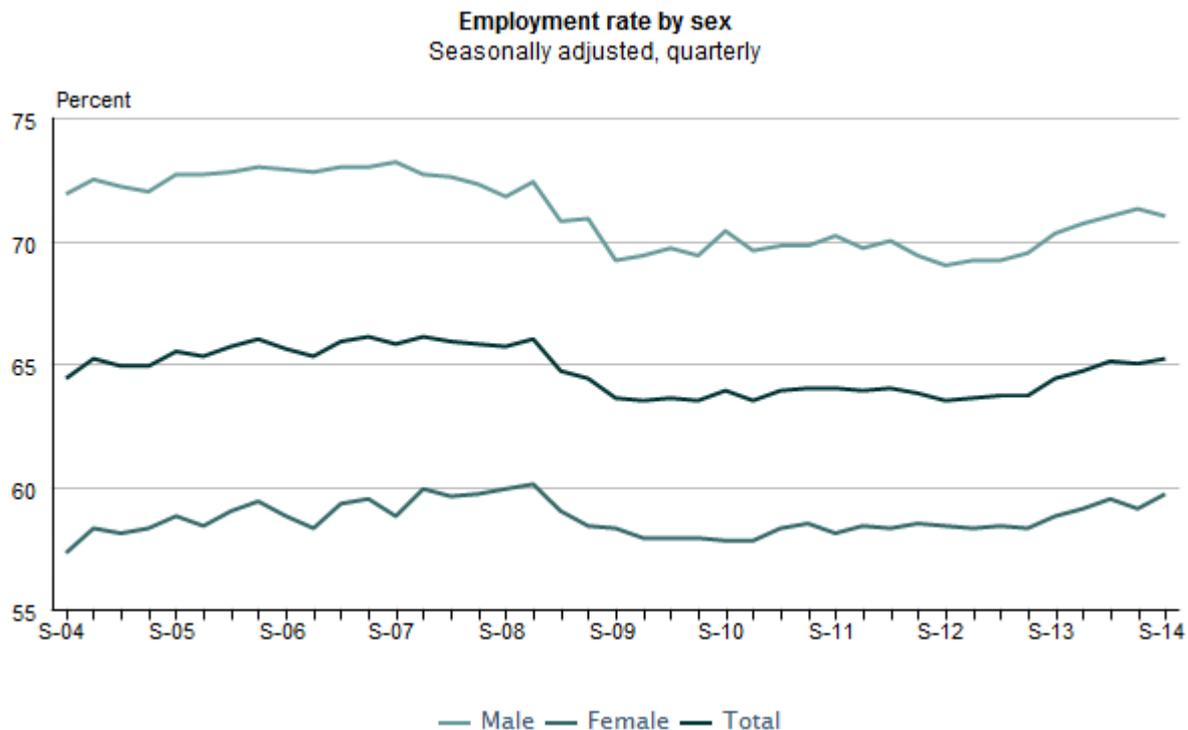
Employment growth outpaces population growth

In the September 2014 quarter, the number of people employed increased by 18,000 to reach 2,346,000, in seasonally adjusted terms. As employment growth (0.8 percent) exceeded working-age population growth (0.4 percent), the employment rate increased to 65.2 percent, up from 65.0 percent last quarter.

Over the year to the September quarter, the number of people employed increased by 72,000 (3.2 percent). Annual employment growth has slowed since the March and June 2014 quarters, which both showed annual growth of 3.7 percent, the highest rate of growth since the December 2004 quarter.

Over the latest quarter, the female employment rate increased 0.6 percentage points, to reach 59.7 percent. This was the fourth-highest employment rate on record for women and the highest since the December 2008 quarter, which was 60.1 percent. Over the year to the September 2014 quarter, the female employment rate rose 0.9 percentage points.

The male employment rate fell 0.3 percentage points over the quarter but rose 0.7 percentage points over the year. The male employment rate was 71.0 percent for the September 2014 quarter.



Source: Statistics New Zealand

More people in full-time employment

More people were working full-time in the September 2014 quarter compared with the same time last year. Full-time employment increased 3.7 percent over the year and 0.7 percent over the quarter. It has now risen for eight quarters in a row.

The number of people in part-time work increased 1.0 percent over the year, and decreased 0.6 percent over the quarter.

Actual and usual hours worked are increasing

The number of actual and usual hours people worked per week grew over the year to the September quarter. The total number of actual hours worked increased 3.3 percent, and the number of usual hours worked increased 3.4 percent. These annual rises in actual and usual hours follow large annual increases in the June 2014 quarter, up 4.8 percent and 5.0 percent, respectively.

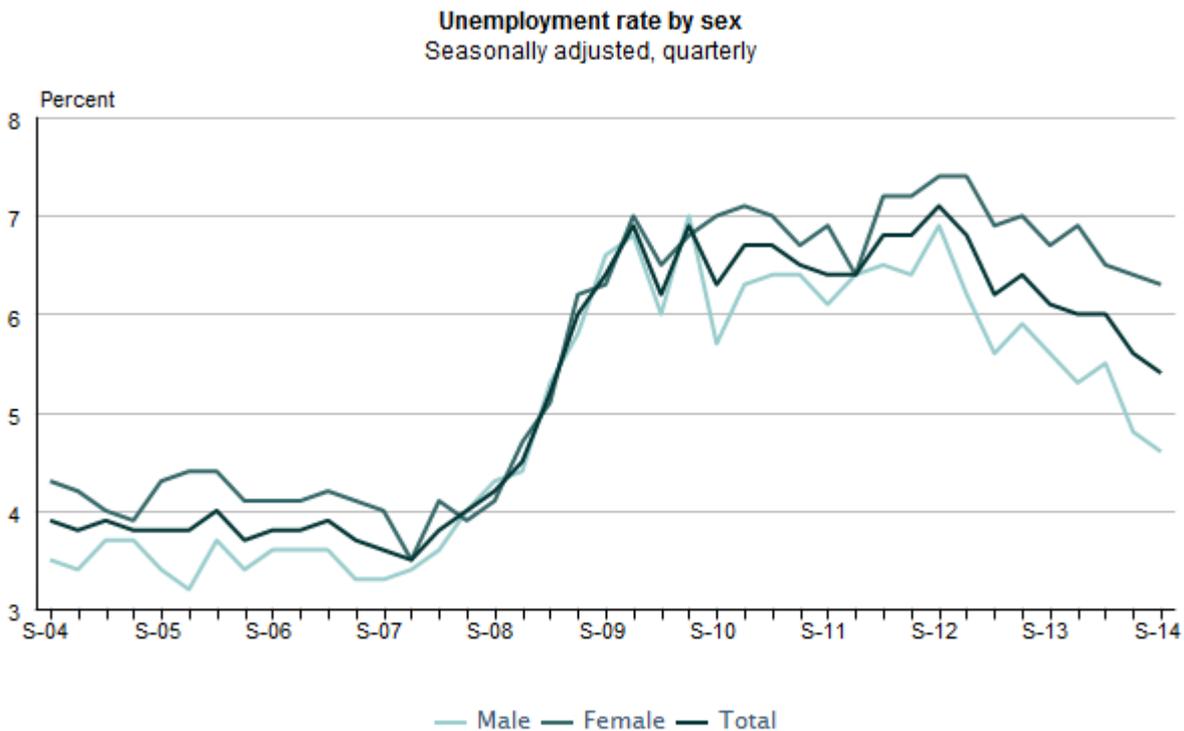
Actual and usual hours also increased over the quarter, up 0.3 percent and 0.9 percent, respectively.

Unemployment continues to fall

In seasonally adjusted terms, the unemployment rate fell to 5.4 percent in the September 2014 quarter – down 0.2 percentage points from the June 2014 quarter. This is the lowest it has been since the March 2009 quarter, when it was 5.2 percent.

The fall in the unemployment rate reflected 4,000 fewer unemployed people over the latest quarter. The male unemployment rate fell 0.2 percentage points to 4.6 percent, and the female unemployment rate fell 0.1 percentage points to 6.3 percent.

Over the year to the September quarter, the number of unemployed people decreased by 14,000 and the unemployment rate fell 0.7 percentage points. Over the same period, the male unemployment rate fell 1.0 percentage point while the female unemployment rate fell 0.4 percentage points.



Source: Statistics New Zealand

The fall in unemployment over the year came from falls in both short-term and long-term unemployment. In unadjusted terms, the number of people in short-term unemployment fell by 10,900, to 78,400, and the number of people in long-term unemployment fell by 2,700, to 41,300.

Short-term unemployment includes people who have been unemployed for less than 27 weeks; long-term unemployment includes those unemployed for 27 weeks or more.

Fall in the number of jobless

The following figures are not seasonally adjusted, and are based on annual changes that are statistically significant unless otherwise stated.

In the year to the September 2014 quarter, the number of people in the jobless category fell by 29,300 (11.4 percent). This reflected 14,000 fewer people unemployed and 11,500 fewer people actively seeking but not available for work.

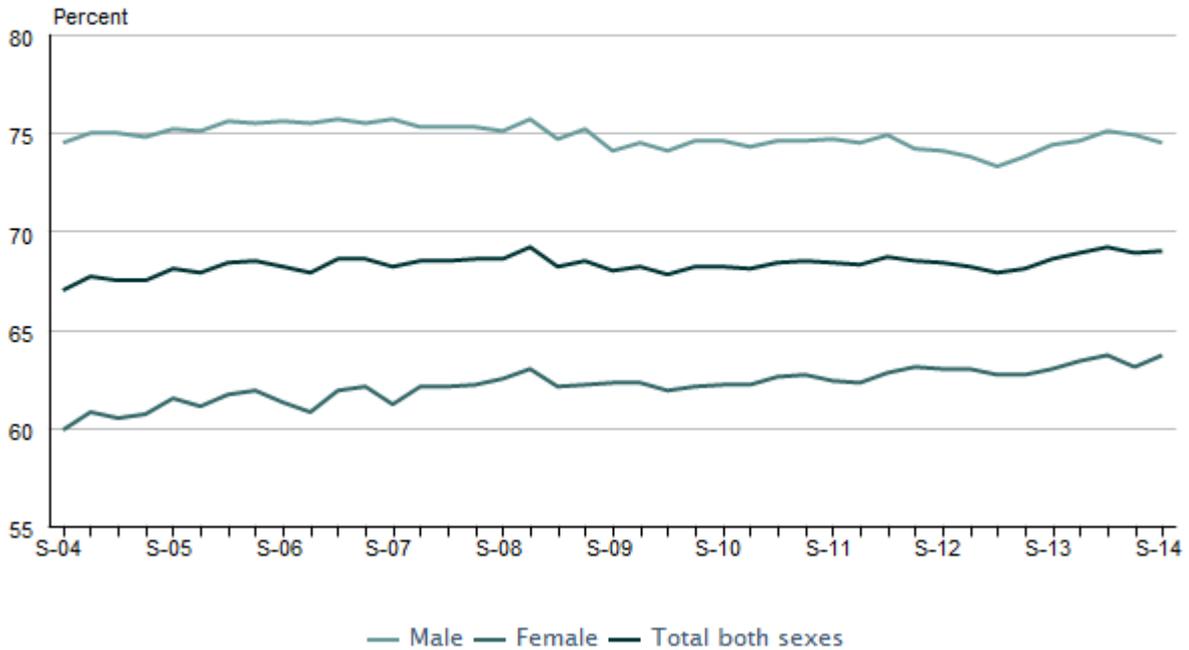
Labour force participation still at record levels

In the September 2014 quarter, the labour force participation rate rose 0.1 percentage points to 69.0 percent – the third-highest level since the series began in 1986, and slightly below the record high of 69.2 percent in the March 2014 and the December 2008 quarters. The rise in participation came as the labour force grew at a faster pace than the working-age population, up 0.6 percent and 0.4 percent, respectively.

The female participation rate returned to its record high of 63.7 percent – equal to the March 2014 quarter. The male participation rate fell 0.4 percentage points over the latest quarter.

Over the year to the September quarter, the labour force participation rate rose 0.4 percentage points. The female participation rate increased 0.7 percentage points and the male rate increased 0.1 percentage points.

Labour force participation rate by sex
Seasonally adjusted, quarterly



Source: Statistics New Zealand

Canterbury continues to lead national employment growth

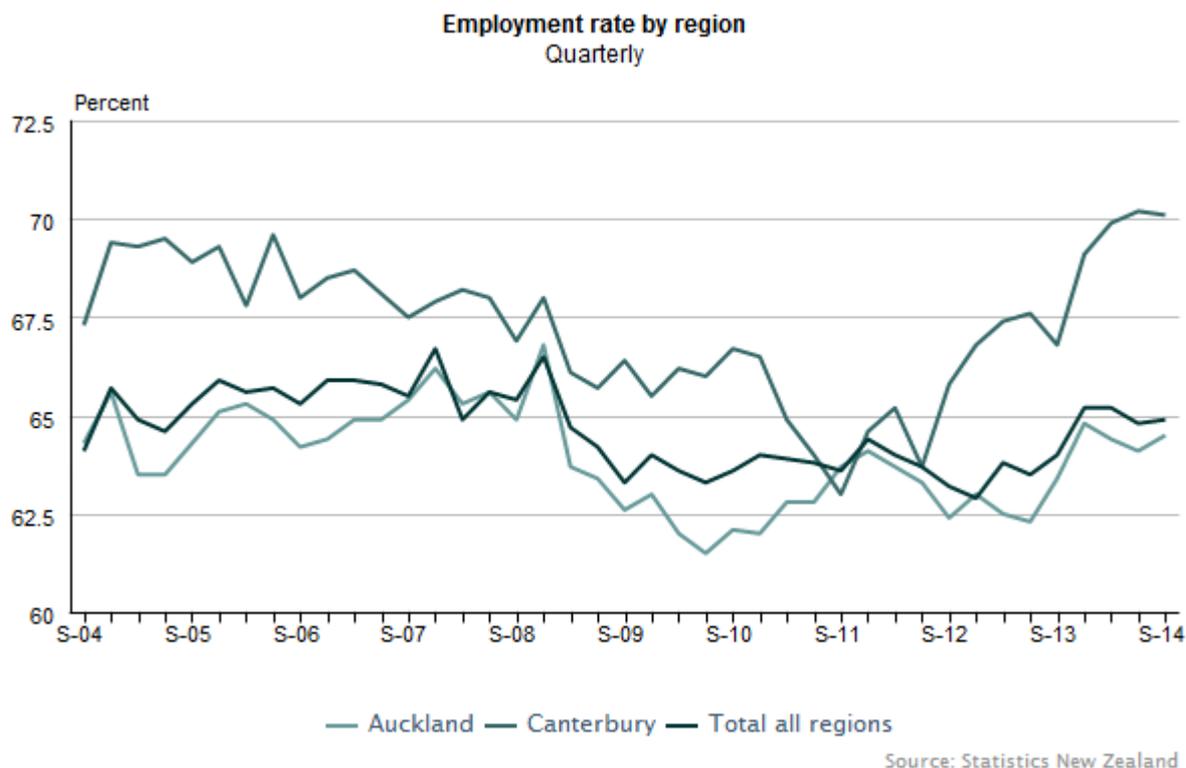
The following figures are not seasonally adjusted, and are based on annual changes that are statistically significant unless otherwise stated.

In the year to the September 2014 quarter, Canterbury accounted for almost half the national employment growth. Canterbury employment rose by 34,400 people (10.6 percent) and its employment rate increased 3.3 percentage points to 70.1 percent. The unemployment rate fell 1.0 percentage point to 3.2 percent, although this movement was not statistically significant.

Employment in the Canterbury construction industry remained strong, with 13,800 more people employed since the September 2013 quarter. Employment in the retail trade and accommodation industry also grew in Canterbury (up 7,800 people).

Employment also grew in other regions. Over the year to the September quarter, employment in Auckland grew by 15,400 people and Waikato employment grew by 14,300 people, although the Auckland movement was not statistically significant.

Excluding Canterbury and Auckland from the national estimates, employment in New Zealand was up 20,600 (1.7 percent) over the year.



Construction employment growth continues

While construction in Canterbury remained strong, employment in the construction industry also grew outside the Canterbury region in the year to the September 2014 quarter. Nationally, 33,500 more people were employed in construction over the year, accounting for just under half the national growth in employment.

More people were also employed in the arts, recreation, and other services industry (up 18,400 people), and the public administration and safety industry (up 11,600 people).

Employment outcomes improve for most ethnic groups

The following figures are not seasonally adjusted, and are based on annual changes that are statistically significant unless otherwise stated.

Employment outcomes have improved for most ethnic groups, with more European, Māori, Asian, and Pacific peoples employed in the September 2014 quarter than a year earlier. Employment rates for these ethnic groups also increased, although these movements were not statistically significant.

The unemployment rate for Pacific peoples was 4.0 percentage points lower than one year ago, down from 15.7 percent to 11.7 percent. The unemployment rate for Pacific women fell 6.2 percentage points, reflecting 3,700 fewer Pacific women being unemployed over the year. The unemployment rate for Pacific men also fell, although this fall was not statistically significant.

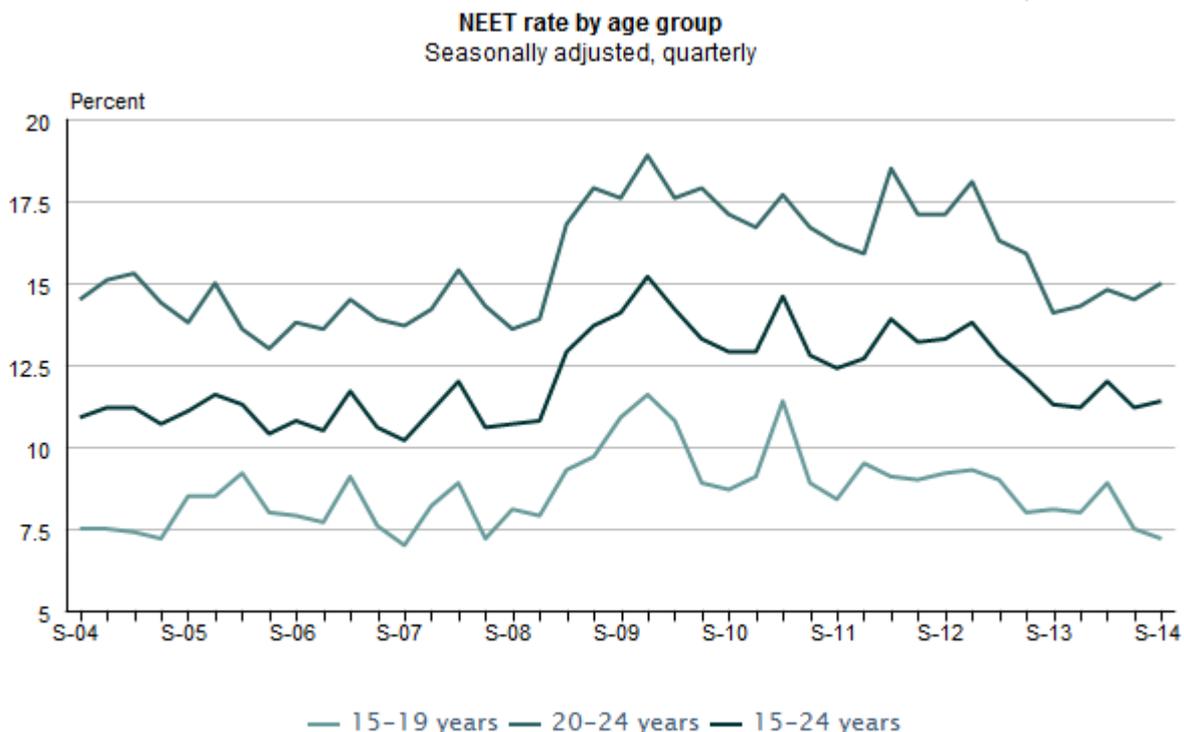
NEET rate is flat

The seasonally adjusted NEET (not in employment, education, or training) rate for youth aged 15–24 years rose 0.2 percentage points from the June 2014 quarter, to 11.4 percent.

Over the latest quarter, the NEET rate for youth aged 15–19 years fell 0.3 percentage points, while the NEET rate for youth aged 20–24 years rose 0.5 percentage points.

Over the year to the September quarter, the NEET rate for youth aged 15–24 years rose 0.1 percentage points. The rate for youth aged 15–19 years fell 0.9 percentage points while it rose 0.9 percentage points for youth aged 20–24 years. The annual rise in the NEET rate for the 20–24-year age group came as 5,000 more youth aged 20–24 were not in the labour force, not in education, and not caregiving.

The unadjusted NEET rates for Pacific peoples and Māori were lower than at the same time last year, down 4.3 and 3.1 percentage points, respectively. However, these annual movements were not statistically significant.



Source: Statistics New Zealand

We're changing the way we report our labour market statistics

We are strongly focused on delivering the information New Zealand needs to grow and prosper, and one of the ways we're doing this is by presenting our information in a more holistic and joined-up way.

We can provide a more complete picture of the labour market by combining the Household Labour Force Survey, the Quarterly Employment Survey, and the Labour Cost Index information

releases. Doing this doesn't involve any changes to the surveys themselves, but will ensure that labour market information is easy for our users to understand. In developing this approach we worked with users to ensure this change will meet our customers' needs.

We're keen to get your feedback and comments. See [Contacts](#) for our contact details.

The first joint labour market information release is scheduled for the December quarter results on 4 February 2015.

Evaluating new series for seasonality

Several new series have been added to the Household Labour Force Survey over the past year. We have reviewed several of these series for seasonal patterns and for the possibility of publishing seasonally adjusted series.

We have also reviewed the group of series that examine ethnicity by labour force status, and key seasonally adjusted series that are monitored every quarter.

See [Evaluation of new series for seasonality](#) for more information.

For more detailed data, see the Excel files in the 'Downloads' box.

Definitions

About the Household Labour Force Survey

The Household Labour Force Survey (HLFS) provides a regular, timely, and comprehensive portrayal of New Zealand's labour force. Each quarter, Statistics NZ produces a range of statistics relating to employment, unemployment, and people not in the labour force.

The survey started in October 1985 and the first results we published were for the March 1986 quarter.

More definitions

The labour force category to which a person is assigned depends on their actual activity during a survey reference week.

This section includes definitions used in the HLFS release. These conform closely to the international standard definitions specified by the International Labour Organization.

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 type: we measure four different employment types in the HLFS: employee, employer, self-employment, and unpaid family worker. The HLFS defines a person as self-employed if they work for themselves and do not have any employees.

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

See '[Data quality](#)' for more details about how we calculate the employment rate used in this release.

Formal study statistics: to be participating in formal study, a person must be working towards a qualification that takes three or more months of full-time study to complete. Full-time study is defined as 20 or more hours 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).

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.

See '[Data quality](#)' for more details about how we calculate the labour force participation rate used in this release.

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.

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.

Underemployment: employed people who work part time (ie usually work less than 30 hours in all jobs) and are willing and available to work more hours than they usually do.

Underemployment rate: the number of underemployed people as a percentage of employed people.

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.

Young people not in employment, education, or training (NEET): 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.

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

Labour force categories used in the Household Labour Force Survey has more information on these definitions.

Related links

Upcoming releases

The [Household Labour Force Survey \(HLFS\)](#), the [Quarterly Employment Survey \(QES\)](#), and the [Labour Cost Index \(LCI\)](#) for the December 2014 quarter will be combined into a single labour market statistics information release. The next labour market statistics information release will be on 4 February 2015.

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

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

Past releases

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

Related information

[A guide to unemployment statistics \(second edition\)](#) (published 2014) provides guidance to data users on the different features of four unemployment 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 HLFS from mid-2016 onwards.

[New labour market data now available](#) (published 2014) introduces three new time series to the suite of Household Labour Force Survey (HLFS) labour market statistics.

[How men and women have fared in the labour market since the 2008 recession](#) (published 2014) describes the effects of the 2008 recession on the labour market outcomes of men and women.

[Building a story of Canterbury employment](#) (published 2013) offers advice to technical users of labour market data on how to interpret recent trends in our published Canterbury data.

[Introducing ethnic labour force statistics by age](#) (published 2013) presents new time-series data to help users better understand ethnic differences in the HLFS.

[Youth labour market dynamics in New Zealand](#) (published 2013) discusses youth movements within the labour market.

[New quality measures for the Household Labour Force Survey](#) (published 2013) explains quality measures added to the HLFS information releases from the June 2013 quarter.

[Skill levels of New Zealand jobs](#) (published 2013) presents information on the skill levels of jobs done by New Zealanders.

[Dynamics of the New Zealand labour market](#) (published 2013) discusses measures of labour market dynamics.

Introducing new measures of underemployment (published 2013) introduces a new underemployment measure, added to the suite of labour market statistics available from the *Household Labour Force Survey: March 2013 quarter* onwards.

Introducing the youth not in employment, education, or training indicator provides information on youth not in employment, education, or training (NEET).

Linked Employer-Employee Data (LEED) provides statistics on filled jobs, job flows, worker flows, mean and median earnings for continuing jobs and new hires, and total earnings. LEED information is based on tax data.

Data quality

Period-specific information

This section is for information that changes between periods.

- [Achieved sample and response rate](#)

General information

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

- [Data source](#)
- [Accuracy of the data](#)
- [How labour force statistics are classified](#)
- [Comparability with other datasets](#)
- [Interpreting the data](#)
- [Timing of published data](#)
- [Confidentiality](#)
- [More information](#)

Period-specific information

Achieved sample and response rate

In the September 2014 quarter, 31,164 people in 15,790 households responded to the Household Labour Force Survey (HLFS).

The target response rate for the HLFS is 90 percent. The response rate for the September 2014 quarter was 86.2 percent and the achieved sample rate was 76.0 percent.

General information

Data source

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
- those aged under 15 years.

Accuracy of the data

Sample design

The HLFS 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, and obtain information for each member of the household. The sample is stratified by geographic region, urban and rural areas, ethnic density, and socio-economic characteristics.

Households stay in the survey for two years. Each quarter, one-eighth of the households in the sample are rotated out and replaced by a new set of households. Therefore, up to seven-eighths of the same people are surveyed in adjacent quarters. This overlap improves the reliability of quarterly change estimates.

The period of surveying/interviewing is 13 weeks (eg from 6 July to 5 October 2014). The information obtained relates to the week before the interview (referred to as the 'survey reference week'). We first interview respondents face-to-face at their home. Subsequent interviews are by telephone wherever possible. Respondents also have the option to 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.

Sampling errors

Sampling errors can be measured. They quantify the variability that occurs by chance because a sample rather than an entire population is surveyed.

We calculate sampling errors using the jackknife method. It is based on the variation between estimates of different subsamples taken from the whole sample. This is an attempt to see how estimates would vary if we were to repeat the survey with new samples of individuals.

We calculate sampling errors for each cell in the published tables and for estimates of change between adjacent quarters at the 95 percent confidence level. For example, if the estimated total number of people employed was 2,500,000, with a sampling error of plus or minus 50,000, or 2 percent, this means there would be a 95 percent chance the true number of employed people lies between 2,450,000 and 2,550,000.

Smaller estimates are subject to larger relative sampling errors than larger estimates. For example, the estimated number of Pacific peoples employed would have a larger relative sampling error than the estimated total number of people employed. Likewise, the estimated number of people unemployed would have a larger relative sampling error than the estimated number of people employed.

Estimates of change are also subject to sampling error. For example, if the survey estimate of change in total employment was up 50,000 over the year, and was subject to a sampling error of plus or minus 12,500 (25 percent), this means the true value of the change in surveyed employment would have a 95 percent chance of lying between 37,500 and 62,500.

A change in an estimate, either from one adjacent quarter to the next, or between quarters a year apart, is said to be statistically significant if it is larger than the associated sampling error. Therefore, the example quoted above represents a significant movement.

In general, the sampling errors associated with subnational estimates (eg breakdowns by regional council area or ethnic group) are larger than those associated with national estimates.

A non-sampling error is very difficult to measure, and if present can lead to biased estimates. We aim to minimise the effect of these errors by applying best survey practices and monitoring known indicators.

Response rate and achieved sample characteristics

The achieved sample size measure is the number of eligible households and individuals that responded to the HLFS in the quarter. The achieved sample size typically increases over time as the population grows and more dwellings are added to the survey sample.

We calculate the response rate by determining the number of eligible households that responded to the survey as a proportion of the estimated number of total eligible households in the sample.

The following table shows the HLFS achieved sample and response rates for the last five quarters.

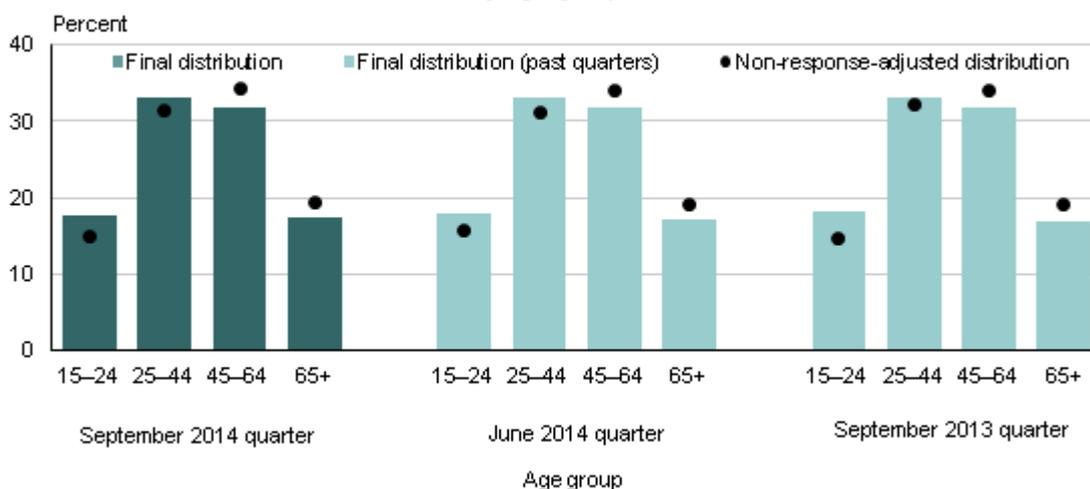
HLFS achieved sample and response rates				
Quarter	National response rate (percent)	Achieved sample rate (percent)	Achieved sample Individuals	Achieved sample Households
Sep 2013	84.7	74.7	30,296	15,337
Dec 2013	87.2	76.9	31,095	15,795
Mar 2014	87.3	77.6	31,529	15,990
Jun 2014	85.4	75.0	29,888	15,547
Sep 2014	86.2	76.0	31,164	15,790

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.

See [New quality measures for the Household Labour Force Survey](#) for more information.

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 gives an indication of 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 September 2014 quarter was 16.2 percent. This compares with 18.2 percent in the June 2014 quarter and 15.1 percent in the September 2013 quarter.

Using a proxy

Where practical, the HLFS gets information directly from each household member. Otherwise, we conduct a proxy interview in which details are given by another adult in the household.

The quality of data from proxy responses is affected by two factors: what type of information is being asked for, and the relationship between the proxy (the person that the survey questions are being answered for) and the proxy respondent (the person replying to the questionnaire on behalf of the proxy). More than 90 percent of related people answer correctly for key variables. When the proxy and proxy respondent are unrelated there is still a high quality of response.

We calculate the proxy rate as the percentage of respondents who had someone else respond on their behalf divided by the total number of respondents. A typical proxy rate in the HLFS is around 30–35 percent. This excludes quarters when a supplement was attached to the HLFS. When a supplement is attached the proxy rate typically falls. This is because supplements often have different proxy rules, which have a small effect on how HLFS responses are collected.

The proxy rate for the HLFS in the September 2014 quarter was 33.7 percent. This compares with 27.3 percent in the June 2014 quarter and 33.6 percent in the September 2013 quarter. Supplements are attached to the HLFS in June quarters.

Seasonal adjustment and trend series

In the labour market, cyclical events that affect labour supply and demand occur around the same time each year. For example, in the summertime a large pool of student labour is both

available for, and actively seeking, work. Demand for labour in the retail sector and in many primary production industries also increases.

For any series, we can break the estimates down into three components: trend, seasonal, and irregular. 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 adjust the series for each labour market statistic separately. For this reason, the sum of the seasonally adjusted estimates for employment, unemployment, and people not in the labour force will usually not add up to the working-age population estimates.

Seasonal adjustment has more information about how we seasonally adjust our statistics. Seasonal adjustment makes data for adjacent quarters more comparable by smoothing out the effect on the time series of any regular seasonal events. This ensures that the underlying movements in the time series are more visible.

See 'Revisions' for information on the change in estimates between the current and previous publication for the seasonally adjusted and trend data.

All seasonally adjusted and trend series are produced using the X-13ARIMA-SEATS Version 1.1 package developed by the U.S. Census Bureau. The seasonal adjustment package for HLFS series was upgraded from X-12-ARIMA to X-13ARIMA-SEATS for the June 2014 quarter to comply with international best practice.

Prior adjustments made to historical data

Our seasonal adjustment package has an automatic procedure for dealing with outliers (observations that are far removed from the others in the series), which works well in most cases. However, in certain circumstances we need to deal with them explicitly. This is done by a prior adjustment.

A prior adjustment was made to the March 2008 and December 2012 quarters. This was made to male and female series, including full-time and part-time employment, and hours worked.

In these quarters we observed an unusually high level of transitions of people out of employment. This was particularly the case where individuals had been employed in the previous quarter and were then employed again in the subsequent quarter. The level of this type of behaviour was only observed in the March 2008, 2009, and December 2012 quarters.

Two of these quarters coincide with the Survey of Working Life in the March 2008 and December 2012 quarters, where we asked people who were employed additional questions to the standard HLFS about their working lives.

The size of the permanent prior adjustment was chosen by our seasonal adjustment programme with input into which quarters require the adjustment. The permanent prior adjustment improves the quality of, and coherence between, the trend series and seasonally adjusted series. Previously, the trend series had identified the December 2012 quarter observations for female employment and not in the labour force.

After further investigation, the permanent prior adjustment was also made to the total usual hours series.

Quality of seasonal adjustment

We monitor our data to make sure that our seasonal adjustment is robust.

The X-13ARIMA-SEATS programme is highly customisable and can produce a wide variety of possible adjustments for any particular input series. Consequently, X-13ARIMA-SEATS produces a number of diagnostics that are useful in assessing the quality of our chosen adjustment.

The following table provides a selection of diagnostics. The reference value indicates our desired value for each. Most are acceptable, though there is evidence of a changing seasonal pattern for the number of males who are employed and unemployed, and females who are not in the labour force.

More detailed information about seasonal adjustment in the HLFS is available on request: info@stats.govt.nz

Seasonal adjustment diagnostics							
Diagnostic		Series					
	Reference value	Male employed	Female employed	Male unemployed	Female unemployed	Male not in labour force	Female not in labour force
Test for seasonality	<0.10	0.00	0.00	0.00	0.00	0.00	0.00
Test for moving seasonality	>0.10	0.09	0.65	0.06	0.22	0.34	0.04
Period until trend dominates	<3	1	1	1	2	2	2
Trend contribution to change	<20	33.39	38.80	45.19	14.59	14.06	19.29
Seasonal contribution to change	>50	58.17	43.81	34.66	67.40	73.45	55.36
Irregular contribution to change	<20	8.29	16.65	20.15	18.01	12.23	24.25
Quality statistic	<1	0.38	0.50	0.90	0.72	0.53	0.84

Evaluation of new series for seasonality

We have added several new series to the HLFS since the September 2013 quarter. In the September 2014 quarter we reviewed several of these series for seasonal patterns and for the possibility of publishing seasonally adjusted series.

We also reviewed the group of series that examine ethnicity by labour force status, and key seasonally adjusted series that are monitored every quarter.

We evaluated the following groups of series for evidence of seasonality and suitability for adjusting:

- ethnicity by labour force status
- age by labour force status (10-year age groups)
- age by labour force status (new 5-year age groups: 65–69 and 70+).

Seasonal adjustment removes the seasonal pattern in a series to aid quarterly comparisons. A seasonal pattern is where a series consistently behaves in a particular manner for a given quarter. For example, a seasonal pattern in the employed series could be a ‘spike’ every December quarter; every year we see more individuals employed in the December quarter. It is possible that over time seasonal patterns cease (eg no spikes in the number employed in the December quarter) or seasonal patterns change (eg spike in the number employed is now in the March quarter).

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

The review concluded there was not enough evidence to support seasonal adjustment of all series within the group 'age by labour force status' and 'ethnicity by labour force status'. However, we did find evidence of seasonality of series for younger age bands. We will consider how we might publish such statistics in the future.

We assessed the quality metrics for the following key series, to determine if there was consistent evidence between June 2013 and June 2014 of a cessation or change in the seasonal pattern:.

Female	Male	Total both sexes
Female employed	Male employed	Full-time
Female part-time employed	Male part-time employed	Part-time
Female full-time employed	Male full-time employed	Unemployed
Female unemployed	Male unemployed	Total actual hours
Female not in the labour force	Male not in the labour force	Total usual hours

There was consistent evidence of a change in the seasonal pattern for male full-time employed and total usual hours. There was some evidence to suggest a weak seasonal pattern for the male part-time employed and male unemployed series. All other key series presented evidence of an identifiable and stable seasonal pattern. Despite some series showing signs of a change in the seasonal pattern and weak seasonality, there was no strong evidence to suggest that seasonal adjustment should be stopped for any of the key series. We will continue to monitor these series every quarter.

Outliers

During the seasonal adjustment process, X-13ARIMA-SEATS gives 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. Such observations are referred to as partial and zero-outliers, respectively. In practice, downweighting outliers does little to seasonally adjusted data, but the effect of the outliers on the trend series is generally reduced. However, if an outlier ceases to be an outlier as more data becomes available, then significant revisions to the trend series become possible.

No outliers are present over the last four quarters of data.

Suppression of data

We suppress cells with estimates of less than 1,000. They appear as 'S' in the tables. These estimates are subject to sampling errors too great for most practical purposes.

Rounding procedures

We round figures presented in this release. Figures are rounded to the nearest hundred or the nearest thousand for seasonally adjusted and trend estimates. This may result in a total disagreeing slightly with the sum of the individual items as shown in the table. Where figures are rounded the unit is shown as (000) if it is thousands.

We calculate any quarterly and annual changes for figures on unrounded numbers. However quarterly and annual percentage point changes for rates are done on rounded rates.

How labour force statistics are classified

The HLFS release includes specific statistics about industry, occupation, study, ethnicity, and region. This section defines what we measure for each of these statistics.

Industry statistics

Since the September 2009 quarter, our industry statistics are based on the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06), the latest edition of the classification. When ANZSIC06 was introduced, we developed the New Zealand Standard Industrial Output Categories (NZSIOC). Classifying industries using NZSIOC helps to standardise outputs. Industry outputs defined using ANZSIC06 are not comparable with those based on ANZSIC96, the version used before the September 2009 quarter.

[Implementing ANZSIC 2006 in the Household Labour Force Survey](#) has more information.

Occupation statistics

Since the September 2009 quarter, we have used the Australian and New Zealand Standard Classification of Occupations (ANZSCO) to classify occupation data in the HLFS. ANZSCO is a harmonised classification developed by Statistics NZ, the Australian Bureau of Statistics, and the Australian Department of Employment and Workplace Relations, for use in both Australia and New Zealand. Occupation data was previously based on the New Zealand Standard Classification of Occupations 1999 (NZSCO99). The occupation data is available on [Infoshare](#).

[Implementing ANZSCO in the Household Labour Force Survey](#) has more information.

Māori benchmarks

Before April 2009, we did not benchmark the Māori working-age population to population estimates. This, along with other sample design restrictions, caused a high degree of volatility in Māori statistics in the HLFS. Movements in the working-age population estimates of certain ethnic groups, such as Māori, may reflect this volatility rather than a real change in the estimated ethnic demographic. Including Māori benchmarks in the working-age population mitigates the known undercount of Māori in the HLFS and also results in smoother time series for Māori statistics. However, introducing the Māori population benchmarks does not necessarily translate to improved estimates for non-Māori ethnic groups.

Household statistics

We derive a household's labour force status by looking at the labour force status of household members aged 18–64 years. For example, if a couple is living by themselves and one is aged 64 years and the other is aged 65 years, this couple will be assigned to the 'All employed' or 'None employed' category, depending on the labour force status of the 64-year-old.

We exclude households that have no members aged 18–64 years from this analysis. The household categories incorporate the concept of dependent children rather than just children. A child is a person of any age who usually resides with at least one parent (natural, step, adopted, or foster) and who does not usually reside with a partner or children of his or her own. We define a dependent child as one under the age of 18 years and not in full-time employment.

Updated regional classification

In November 2010, the new Auckland territorial authority replaced the existing Rodney district, North Shore city, Auckland city, Waitakere city, Manukau city, Papakura district, and part of Franklin district councils. This resulted in a minor change in the boundary between the Auckland and Waikato regions.

From the June 2011 quarter, we produce the statistics in the HLFS release using the new boundaries, and backcast for the March 2011 quarter. The new boundaries do not significantly affect measures from the HLFS.

Total response ethnicity

From the December 2011 quarter, the HLFS publishes ethnicity data using the total response ethnicity output in the information release. Using this method, we count people who reported that they belonged to more than one ethnic group once in each group reported. This means that the total number of responses for all ethnic groups can be greater than the total number of people who stated their ethnicities.

Comparability with other datasets

[Comparing our labour market statistics](#) has more information on how the HLFS compares with the other labour market statistics we produce. This web page explains which measures of employment are included in each of our employment releases, and the timings and coverage of each release.

[A Guide to Unemployment Statistics](#) has more information on comparing the HLFS with other datasets on unemployment. This web page explains which measures of unemployment are included in the HLFS, jobseeker support – work ready, and the job seekers register. It also includes information on the timings, coverage, and different purposes of each of these measures.

HLFS comparable series

The HLFS and the [Quarterly Employment Survey \(QES\)](#) are two different measures of employment and hours worked. The HLFS measures the number of employed people and the number of hours they usually work from New Zealand households; the QES measures the number of jobs and paid hours from New Zealand businesses. The HLFS comparable series removes major differences between HLFS and QES, yet does not make adjustments for all differences. This provides an HLFS series that is more comparable with QES.

In the June 2014 quarter, we made two changes to improve the seasonally adjusted HLFS comparable series.

- We improved the methodology used to backcast the ANZSIC06 industry classifications. This provides more stable and robust industry estimates before the June 2009 quarter.
- We excluded two further industry groups not covered in the QES (industry groups O7552 and L6711). This improves comparability of the HLFS and QES estimates.

The HLFS comparable series removes the following categories from the HLFS, which are not collected by the QES:

- self-employment
- individuals who work without pay in a family business
- the following industry groups:
 - A01 Agriculture
 - A02 Aquaculture
 - A04 Fishing, hunting, and trapping
 - A052 Agriculture and fishing support services
 - L6711 Residential property operators
 - O7552 Foreign government representation
 - S96 Households employing staff
 - T Not specified

The table below compares the annual percentage change of each survey's employment, and hours worked measures for recent quarters, in seasonally adjusted terms.

Year to	Annual percentage change in employment		Annual percentage change in hours	
	HLFS comparable series people employed	QES filled jobs	HLFS comparable series usual hours	QES hours paid
Sep 2013	4.3	1.9	5.2	2.8
Dec 2013	3.7	1.9	4.0	2.5
Mar 2014	2.6	2.6	2.3	3.8
Jun 2014	4.2	2.3	5.0	3.6
Sep 2014	2.1	3.0	2.1	2.6

In the year to the September 2014 quarter, the HLFS comparable series reports higher growth in employment and hours than the QES does.

International comparability of the labour force participation rate and the employment rate

Several alternative definitions of labour force participation rate and employment rate are used by other organisations and countries; they differ in the age of the working-age population and the inclusion of military personnel. A common definition is to restrict the labour force and working-age population to the 15–64-year age group, particularly in countries with a compulsory retirement age. Generally, this definition leads to a higher labour force participation rate and employment rate.

Using this definition for the New Zealand HLFS in the September 2014 quarter gives a surveyed figure of 78.7 percent (labour force participation rate) and 74.2 percent (employment rate).

Interpreting the data

Information releases contain seasonally adjusted, trend, and survey statistics for the latest quarter. These statistics are averages for the three-month period and do not apply to any specific point in time. We identify data sourced from the seasonally adjusted series and trend series as such in the table or section headings. All other data, in the commentary or in tables, are sourced from the original survey series and are unadjusted.

Timing of published data

The HLFS is 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 or households to prepare summary statistics.

More information

[See more information about the Household Labour Force Survey](#)

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

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 following 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
Sep 2013	0.09	-0.02	-0.80	-0.19	-0.06	0.00
Dec 2013	-0.02	0.00	0.38	-0.05	-0.04	0.01
Mar 2014	0.00	-0.04	0.28	0.09	-0.06	-0.05
Jun 2014	-0.08	0.05	0.25	0.15	0.16	0.05

The following 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
Sep 2013	0.03	0.01	-0.30	-0.09	0.00	0.02
Dec 2013	0.02	-0.02	0.01	-0.08	-0.08	0.07
Mar 2014	0.02	-0.04	0.72	0.05	-0.23	-0.31
Jun 2014	-0.20	0.19	-0.73	0.94	0.74	-0.99

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	0.05	0.08	0.16	0.17
Female employed	0.06	0.10	0.24	0.24
Male unemployed	0.48	0.78	1.73	1.81
Female unemployed	0.51	0.91	1.83	1.84
Male not in labour force	0.09	0.16	0.34	0.35
Female not in labour force	0.08	0.14	0.33	0.35

In the table above, you will notice there are '1-step ahead' and '4-step ahead' revisions. A '1-step ahead' revision is one made 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 made 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

The following tables are available in Excel format from the 'Downloads' box. If you have problems viewing the files, see [opening files and PDFs](#).

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.

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.

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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