Quarterly Employment Survey: June 2011 quarter

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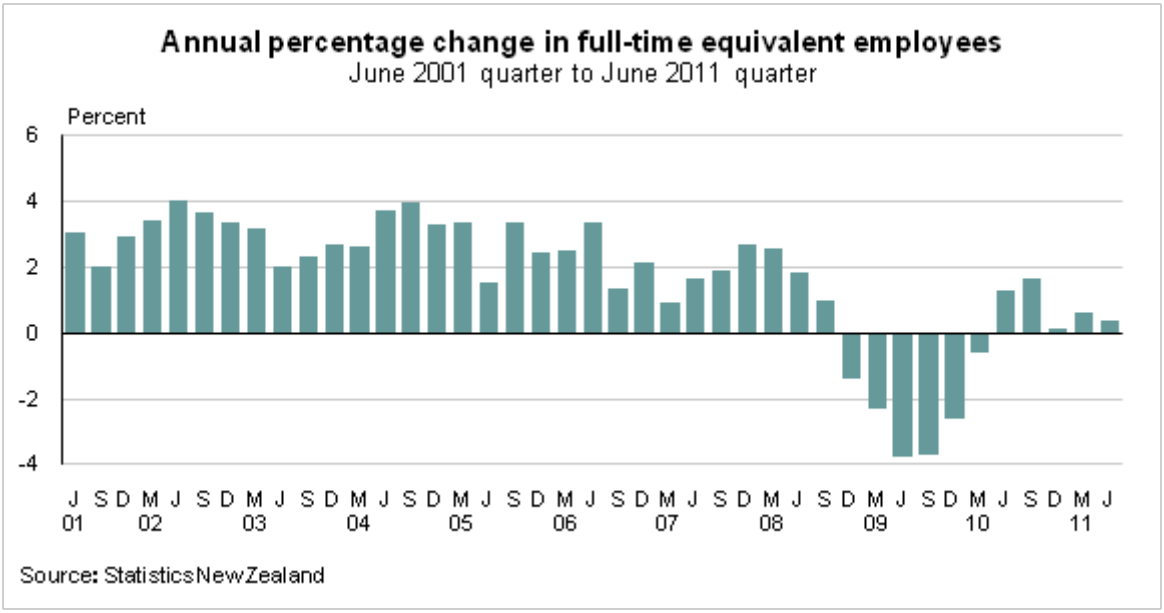
Highlights

For the June 2011 year:

- Number of full-time equivalent employees (FTEs) remained steady at 1.33 million.
- Seasonally adjusted total paid hours increased 1.6 percent.
- Average total hourly earnings increased 3.1 percent.
- Average total weekly earnings by FTEs increased 4.3 percent.

Measure	June 2011 qtr	Percentage change from previous qtr	Percentage change from previous year
Full-time equivalent employees	1.33 million	0.7	0.4
Seasonally adjusted total paid hours	50.86 million	0.7	1.6
Average total hourly earnings	$26.27	1.2	3.1
Average total weekly earnings by FTEs	$1,006.88	1.0	4.3



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Commentary

Overview

Quarterly Employment Survey (QES) results for the June 2011 year show steady employment, while paid hours and average earnings continue to grow.

In the June 2011 year, the number of full-time equivalent employees (FTEs) remained stable, while total paid hours increased 1.6 percent. This is the fifth consecutive annual increase in total paid hours. Average total weekly paid hours (FTEs) increased 1.2 percent for the same period.

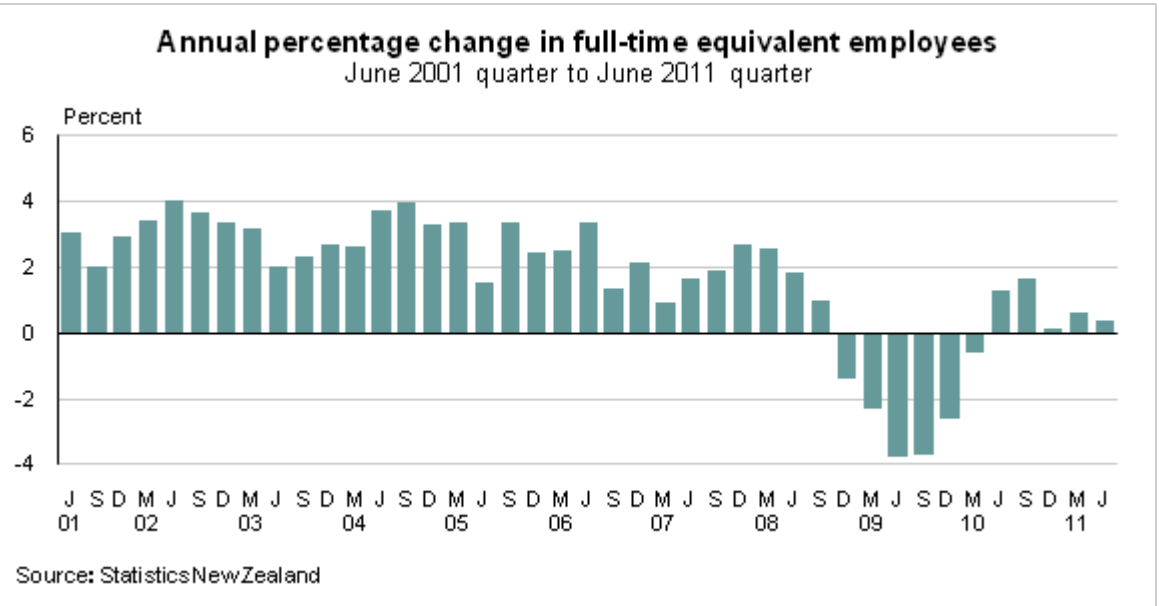
In the June 2011 year, average total weekly earnings (FTEs) rose 4.3 percent, which is the largest increase in two years. Average total hourly earnings increased 3.1 percent for the same period, reaching $26.27.

QES total gross earnings statistics may include performance bonus payments, incremental increases, commissions earned in the pay period etc. QES average earnings statistics do not fix the quantity or quality of labour input, and can be influenced by changes in employment, paid hours, and gross earnings within industries. In comparison, the labour cost index (LCI) measures changes in salary and wage rates for a fixed quantity and quality of labour input.

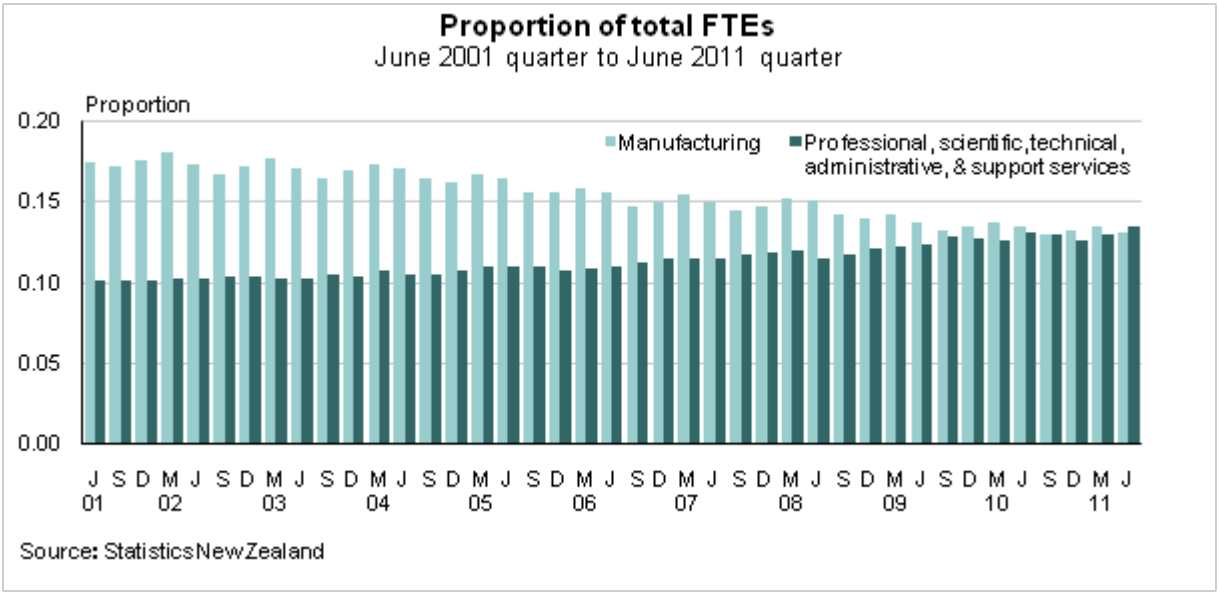
In the year to June 2011, salary and wage rates (including overtime), as measured by the LCI, increased 1.9 percent.

Employment

The demand for employment at the national level remained stable over the last year. For the June 2011 year, growth in the number of FTEs in the wholesale trade industry was offset by losses in the accommodation and food services industry. The number of wholesale trade FTEs increased 6.9 percent for the same period, the largest increase since a 7.1 percent increase in the December 2007 year. The number of FTEs in the accommodation and food services industry decreased 9.5 percent, which is the largest annual decrease for the industry since the time series began in March 1989.



The relative size of two of New Zealand's largest industries has changed over the last 10 years. The proportion of total FTEs in the manufacturing industry dropped 4.3 percentage points, from 17.4 percent in June 2001 to 13.1 percent in June 2011. Conversely, the proportion of total FTEs in the professional, scientific, technical, administrative, and support services industry rose 3.4 percentage points, from 10.1 percent in June 2001 to 13.5 percent in June 2011.



Canterbury regional council area

The June 2011 quarter was the first in which the QES estimates were affected by the February 2011 Christchurch earthquake. The QES reference period for the June 2011 quarter was the week ending on or before the 20th of May, some three months after the earthquake occurred.

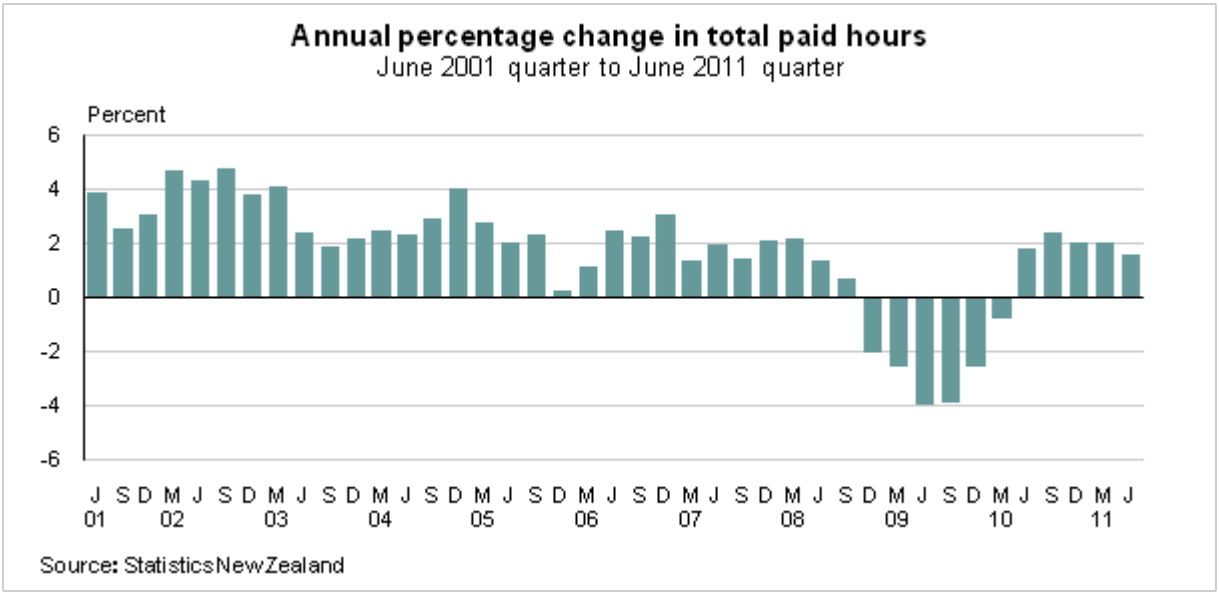
The QES provides estimates for the Auckland, Wellington, Canterbury, and rest of New Zealand regional council areas. The Canterbury regional council area represents approximately 14 percent of total FTEs.

In the June 2011 quarter, Canterbury regional council area FTEs decreased 4.5 percent. This is the area's largest loss of FTEs since the QES began regional estimates in September 1999, and the largest quarterly decline by any region in the time series. The movement in FTEs in the Auckland and Wellington regional council areas remained stable, while the number of FTEs in the rest of New Zealand region increased 2.0 percent.

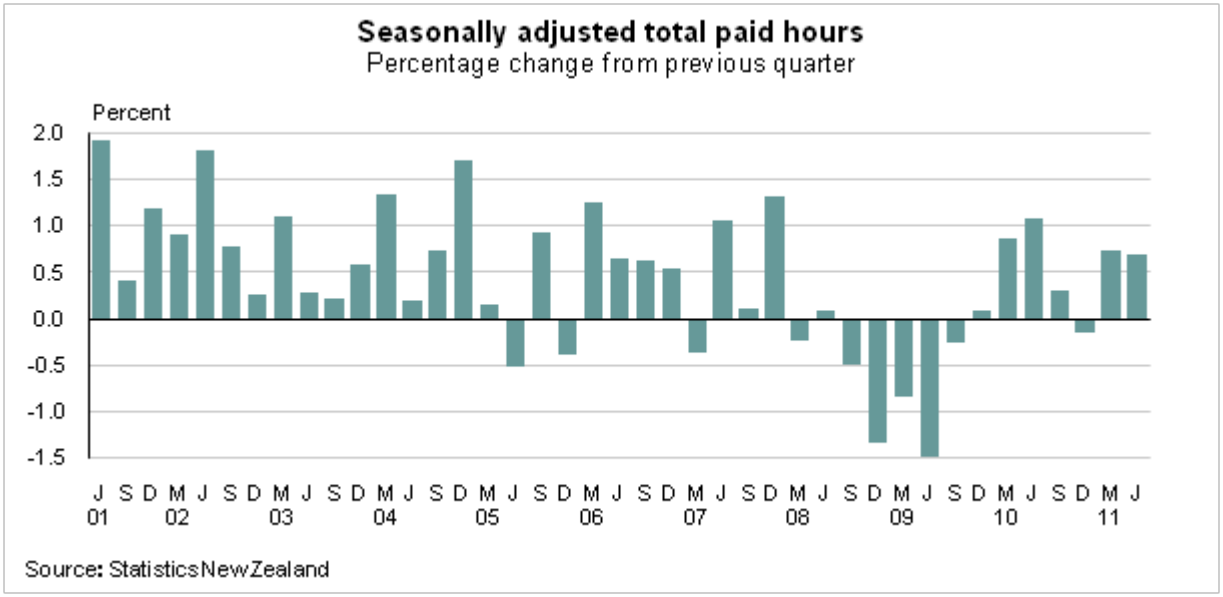
Please refer to the technical notes for response rates and information on the reliability of survey results.

Paid hours

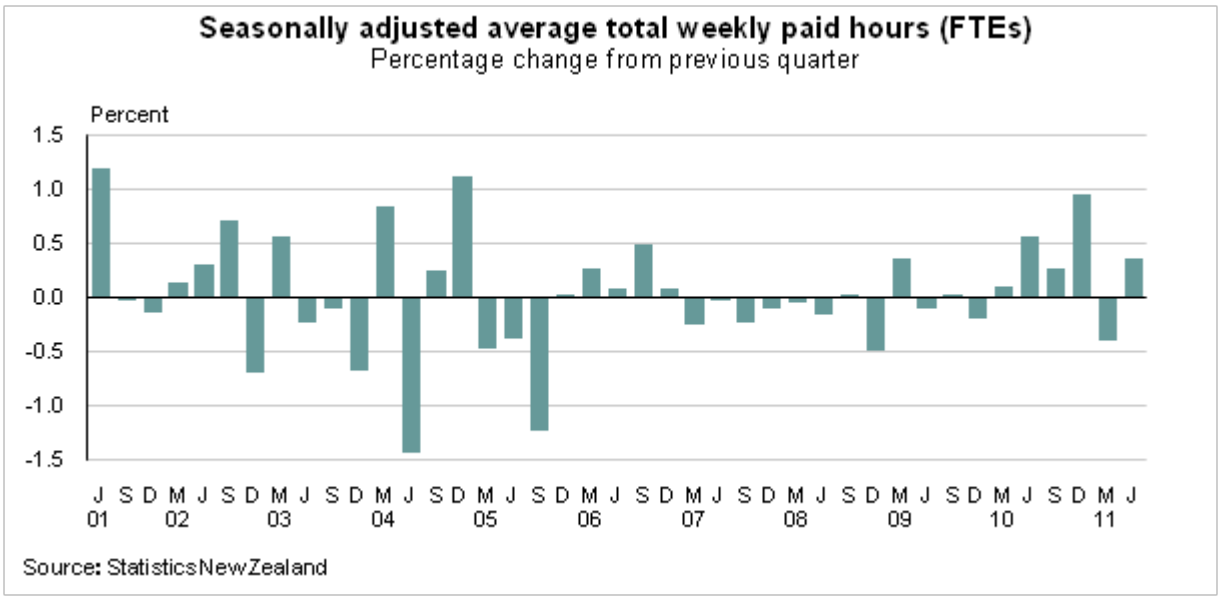
New Zealand employers are demanding more of the labour market in the form of paid hours. For the June 2011 year, total paid hours increased 1.6 percent, which is the fifth consecutive yearly increase.



Seasonally adjusted total paid hours increased 0.7 percent for the June 2011 quarter.



Seasonally adjusted average total weekly paid hours (FTEs) increased 0.4 percent for the June 2011 quarter.



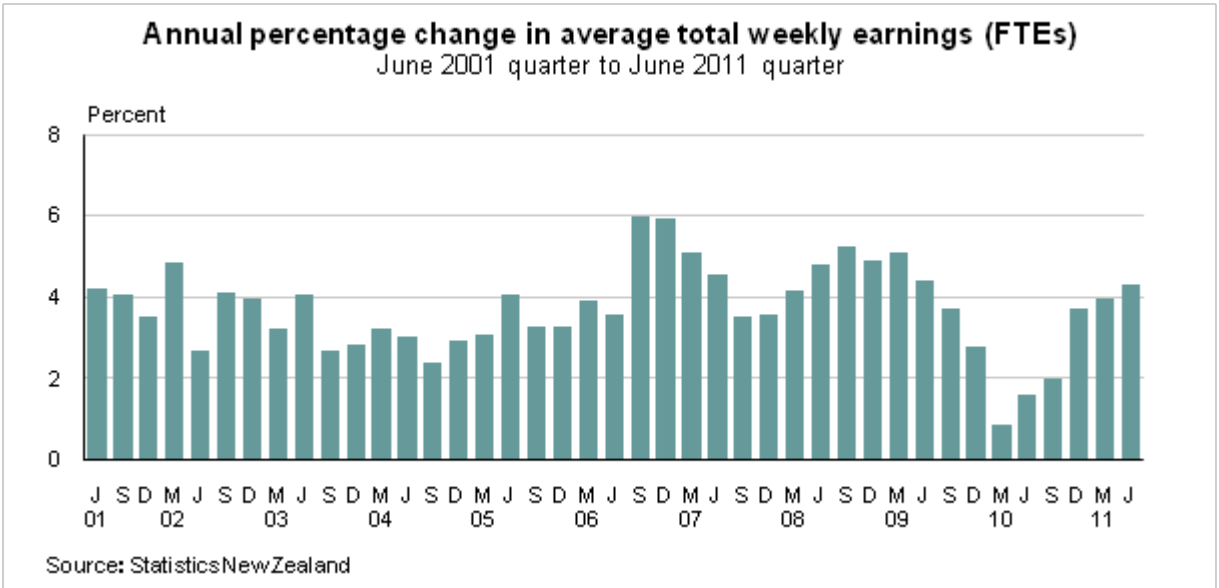
Earnings

New Zealand employees are earning more per week on average than the same time last year. For the June 2011 year, average total weekly earnings (FTEs) increased 4.3 percent to $1006.88.

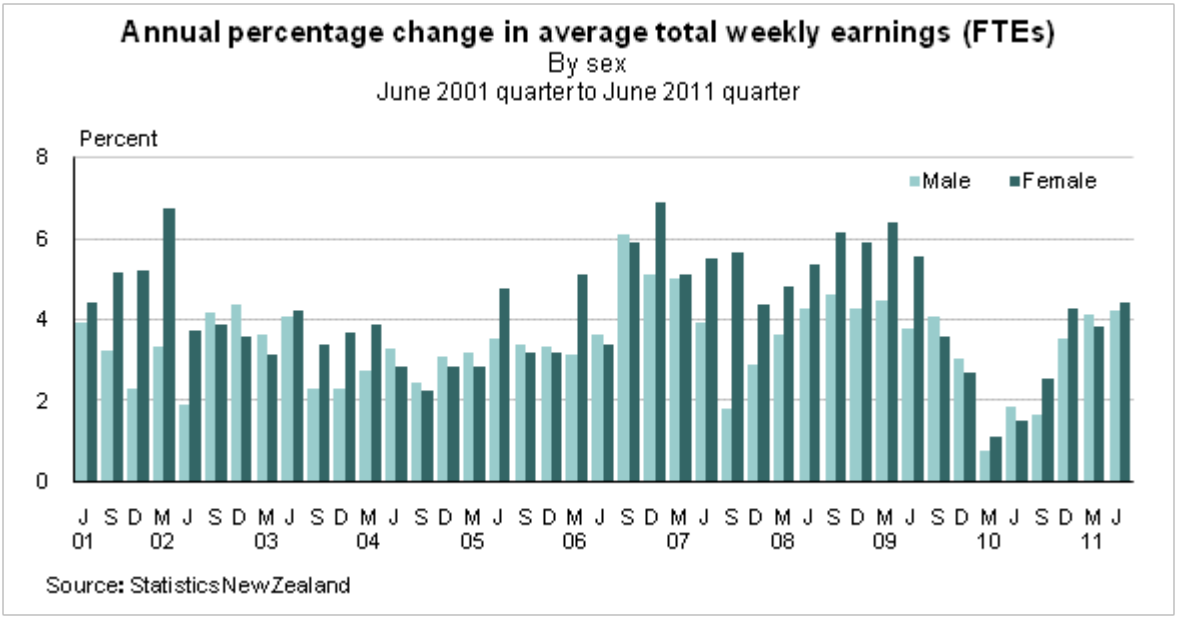
The change in average total weekly earnings (FTEs) can be influenced by two main effects:

- changes in average total weekly earnings (FTEs) within industries
- changes in the proportion of FTEs between industries – for example, if an industry's proportion of FTEs grows in a particular period, relative to other industries, it will have a greater influence on the change in the overall average total weekly earnings (FTEs).

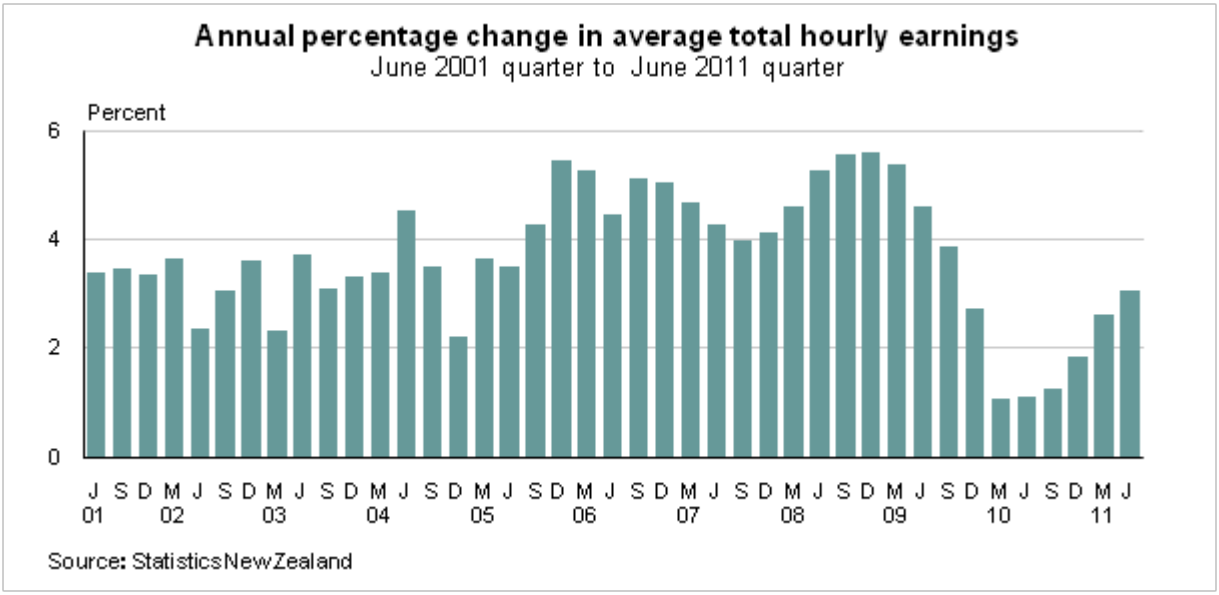
The rise for the June 2011 year was mainly due to the increase in average total weekly earnings (FTEs) within industries. Over the last year, the largest influence on the national movement was the increase in average total weekly earnings (FTEs) within the professional, scientific, technical, administrative, and support services industry.



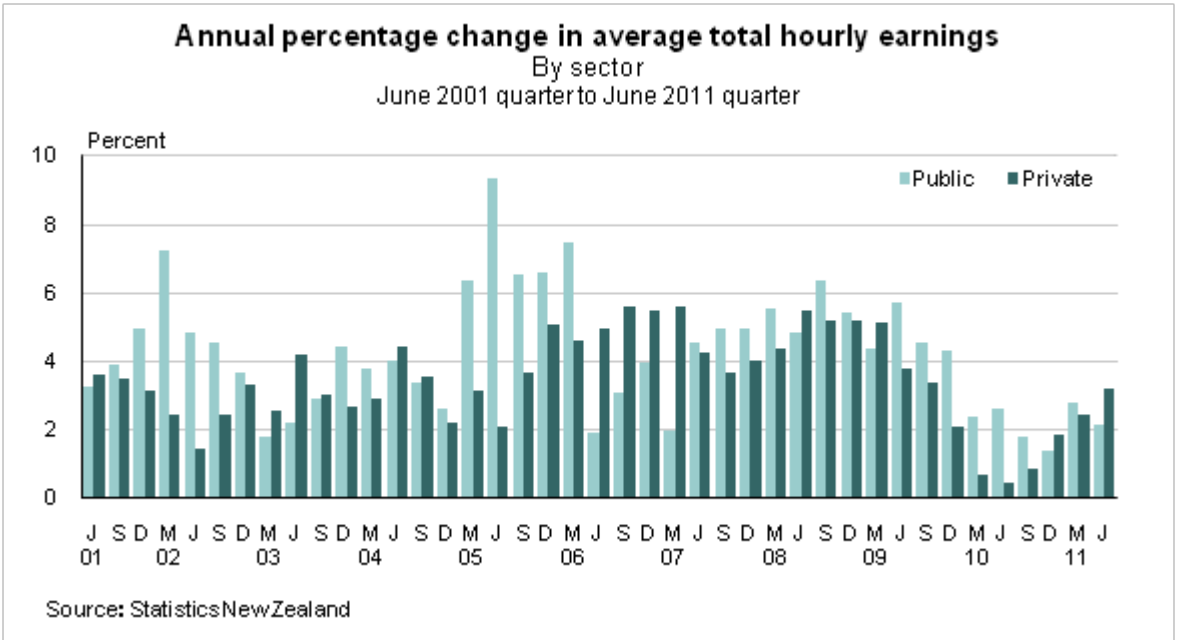
Male and female employees are earning more per week on average than they were in June 2010. Average total weekly earnings (FTEs) for males increased 4.2 percent for the June 2011 year, to reach $1107.98. For females, average total weekly earnings (FTEs) grew to $897.00, an annual increase of 4.4 percent.



Average total hourly earnings increased 3.1 percent (to $26.27) for the June 2011 year, which is the largest increase for almost two years. This rise was mainly due to the manufacturing industry, which increased average total hourly earnings by 3.6 percent.



Both private and public sector average total hourly earnings have increased since June 2010. Average total hourly earnings increased 3.2 percent in the private sector for the June 2011 year, compared with a 2.1 percent increase in the public sector for the same period.



For technical information please contact:
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Next release ...

Quarterly Employment Survey: September 2011 quarter is due to be released on 1 November 2011.

Technical notes

What the survey measures

The Quarterly Employment Survey (QES) is designed to measure quarterly estimates of change in, and levels of, average hourly and average weekly (pre-tax) earnings, average weekly paid hours, and the number of filled jobs.

Operation of the survey

QES statistics are derived quarterly from approximately 18,000 surveyed business locations in a range of industries and regions throughout New Zealand. Information relates to the payweek ending on, or before, the 20th of the middle month of the quarter. Therefore, the reference months are February, May, August, and November.

The QES is a panel survey. This means that all businesses in the sample are surveyed in each quarter until the sample is reselected or redesigned, when some businesses are rotated out. The need to maintain a sample that provides good coverage of economic activity means that smaller businesses have a higher chance of being rotated out of the sample than larger ones. Between a sample reselection or redesign, businesses are removed if they cease business or stop employing staff. A sample of new businesses and businesses that come into the scope of the survey is also introduced each quarter.

Results from the quarterly samples are available approximately three months after the survey reference month.

Coverage

The survey population comprises all business locations owned by economically significant enterprises in surveyed industries that employ staff.

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 for its rolling mean employment (the average employee count over the previous 12 months)
- is in a GST-exempt industry (except residential property leasing and rental)
- is part of a group of enterprises
- is a new GST registration that is compulsory, special, or forced
- is registered for GST and involved in agriculture or forestry.

The following Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06) industries are excluded from coverage:

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

T99 Not included elsewhere
Non-civilian staff in ANZSIC 2006 classification O76 Defence are also excluded.

Glossary of terms

Business Frame (BF) – a listing of all economically significant businesses in New Zealand. The BF is maintained by Statistics New Zealand. The survey population for the QES is a subset of the BF.

Employee count (EC) – an attribute associated with each business in the population. It comes from the BF and is obtained from taxation data. EC is used only for sample design purposes.

Employees – survey estimate of all full-time and part-time paid employees.

Enterprise – a business or service entity operating in New Zealand.

Filled jobs – survey estimate of all full-time and part-time paid employees, plus working proprietors in businesses that have paid employees.

Full-time equivalent employees (FTEs) – survey estimate of all full-time paid employees, plus half the number of part-time paid employees.

Survey improvements: ANZSIC 2006

The current sample design was introduced in the September 2009 quarter. The sample was redesigned in order to implement the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC) into the survey. ANZSIC 2006 was developed by Statistics NZ and the Australian Bureau of Statistics to improve the comparability of industry statistics between the two countries, and with the rest of the world. ANZSIC 2006 updates the 1993 and 1996 versions, following a substantial review of the classification. The review set out to ensure the classification stayed current and relevant, reflecting changes in the structure and composition of industry since the previous edition, and recognising changing user requirements for industry data.

All estimates and comparisons before September 2009 are calculated from the backcast QES ANZSIC 2006 series.

For more information about the ANZSIC 2006 classification and its implementation into the QES and other Statistics NZ collections, please see: Introducing ANZSIC 2006.

Previous survey improvements

The last sample redesign was implemented in the September 1999 quarter. It introduced a number of significant improvements to the QES. These included a new processing system, a redesigned sample, and an extension of the survey's coverage. However, it should be noted that these improvements did not address some key limitations inherent in the survey's conceptual underpinnings. In particular, the QES average earnings statistic does not provide a reliable measure of wage inflation. The QES movements shown by average earnings statistics are influenced not only by changes in employees' remuneration (resulting from changes in wage rates), salaries, and paid hours but also by changes in the composition of the paid workforce from survey to survey. (See 'Compositional effects' for more information.)

For the June 2001 to March 2003 quarters (inclusive), the QES results incorporated a modelled component that improved the coverage of existing businesses that had started employing paid labour, and accounted for the effect of annual BF updates. The results from the June 1999 to March 2001 quarters were revised to incorporate this improvement. The revisions were released on 19 July 2001.

At the start of September 2003, the reference quarters were renamed to bring them into line with other Statistics NZ surveys. The February, May, August, and November quarters became the March, June, September, and December quarters, respectively. The survey reference period did not change; it remained the payweek ending on or immediately before the 20th of the middle month of the quarter.

In October 2003, EC replaced FTE as the business size indicator in the sample design. This was the result of a change in the way the BF is maintained. Monthly administrative data is now used to update the BF rather than annual survey data. This is a more efficient and timely process, and reduces the survey compliance burden on businesses.

Before October 2003, a business was included in the QES population if it had at least 0.5 paid FTE. From October 2003 onwards, it must have an EC of at least one. The EC size indicator is used to identify businesses on the BF with paid employees. As a consequence of the improved coverage under the new BF maintenance environment, there was no need to retain the modelled component in the QES. It also meant revising previously published results from the December 1999 to June 2003 quarters (inclusive). The revisions were released on 22 October 2003.

The September 2003 quarterly release was the first that used EC count as the size indicator. The use of EC in the sample design resulted in a significant sample size increase. In the June 2004 quarter, the sample was reduced by about 1,700 business locations. This had a negligible effect on the accuracy of the key published estimates.

Addition of businesses to the QES sample

In each quarter, businesses enter or leave the sample in order to make it as representative as possible of the surveyed industries.

There are three types of businesses that enter the sample (known as sample births):

- A new enterprise with paid employees. These are new GST registrations within the scope of the QES. A sample of these is selected for each quarter.
- A business location that was not surveyed in the previous quarter and has transferred to a surveyed enterprise in the recent quarter. Examples are takeovers and mergers. The QES tracks enterprises. Therefore, all in-scope business locations belonging to a sampled enterprise are surveyed.
- An existing enterprise that has started to employ paid labour. These are businesses that have come within the scope of the QES and are usually small enterprises. A typical example is a business with two working proprietors that has started employing staff.

Filled jobs

It should be noted that the QES measures the number of filled jobs, not the number of people employed. Individuals with more than one job are counted at each workplace. Filled-job figures comprise QES estimates of full-time and part-time paid employees at surveyed business

locations in surveyed industries, plus working proprietors in those locations and industries. This measure excludes jobs held by those in working proprietor-only businesses.

Filled-job figures are produced each quarter. Before the September 1999 quarter, filled-job estimates were subject to revision annually after the February census was conducted. This was done as working proprietor data was sourced from the BF.

Seasonal adjustment and trend

Seasonally adjusted and trend series are available for total earnings, total paid hours and average weekly paid hours. These are provided in tables 3 and 8 of this information release. Each of the seasonally adjusted series is adjusted separately. For this reason, the seasonally adjusted and trend estimates for total weekly paid hours will not be equal to the sum of estimates for ordinary weekly paid hours and overtime weekly paid hours.

For any series the survey estimate can be broken down into three components: trend, seasonal, and irregular. Seasonal adjustment aims to eliminate the impact of regular seasonal events (such as annual cycles in holidays) on the time series. This makes the data for adjacent quarters more comparable. The seasonally adjusted series has had the seasonal component removed, while the trend series has had both the seasonal and irregular components removed.

Trend estimates reveal the underlying direction of movement in a series and are likely to indicate turning points more accurately than seasonally adjusted estimates. The trend is calculated as a 'centred moving average' of the seasonally adjusted series. Towards the end of the series, trend estimates are subject to change because new data points are used in the estimation process as they become available. Revisions for the trend series can be particularly large if an observation is treated as an outlier in one quarter but is found to be part of the underlying trend as further observations are added to the series. Typically, only the previous two or three estimates will be subject to substantial revisions.

Seasonally adjusted series are also subject to some revisions, as they are also obtained using central moving average methods. Generally, these revisions are smaller than for the trend component.

The X-12-ARIMA package has been used to produce the seasonally adjusted and trend estimates for the QES.

Reliability of survey results

Survey results are subject to two types of possible error:

1. Non-sampling error

Non-sampling error applies to all quarters and 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.

No direct measure of the size of non-sampling error in the QES is available.

Responses to the QES

Response rates measure the proportion of eligible respondents who provide data.

The target corporate response rate for the QES is 89 percent of weighted FTEs. The target response rate is set to minimise the level of imputation, which is used to account for likely biases due to non-response. This target was met in the June 2011 quarter. Response rates for the past four quarters are indicated below:

- September 2010 – 89.5 percent
- December 2010 – 89.3 percent
- March 2011 – 88.2 percent
- June 2011 – 90.8 percent

In the June 2011 quarter, the Canterbury regional council area reached the target response rate with 89.4 percent of weighted FTEs.

Imputations in the QES

For sampled businesses that have not responded, one of two methods of imputation is used:

- Ratio imputation – based on auxiliary information (ie the EC business size indicator). This method is used for non-responding businesses that have been added to the sample in the recent period. It assumes the relationship between the businesses industry, size and the variable of interest is robust for imputation purposes.
- Adjusted historical imputation – based on the previous period's data. This method is used for non-responding businesses that are in the sample in consecutive periods. The imputed data equals the previous period's data multiplied by a 'forward movement factor'. The forward movement factor reflects the average movement calculated from responding businesses in the same industry and of similar size. Imputation is not performed on a regional basis.

For further information about the imputation methods, or the effects of imputation on the final dataset, please contact Statistics NZ.

2. Sampling error

Sampling error is a measure of variability that occurs by chance because a sample of eligible businesses, rather than the entire population, is surveyed. The magnitude of the sampling error is controlled by the size of the sample and the use of statistically sound selection techniques.

The June 2011 quarter average total hourly earnings estimate of $26.27 has a relative sampling error of 0.9 percent at the 95 percent confidence level. This means that there is a 95 percent likelihood that the true value, if a full-coverage rather than a sample survey had been conducted, lies between $26.03 and $26.51.

Estimates of change between quarters are also subject to sampling error. A change in an estimate (either between adjacent quarters or between quarters a year apart) is said to be statistically significant if it is larger than the sampling error associated with that change. For example, the 3.0 percent increase in average total hourly earnings for females between the June 2010 quarter and the June 2011 quarter is statistically significant, because it is more than the absolute sampling error of 0.5 percent at the 95 percent confidence level.

For more comprehensive information on QES sampling errors, please contact Statistics NZ.

Special treatment

Special treatment candidates are identified as outliers using graphical verification. The checks are carried out separately by variable. However, if a unit is accepted for special treatment for one variable then it will be specially treated for all variables. If a unit is specially treated then its final weight is set to 1 and it is unlinked for all imputation factor calculations. If a unit is not specially treated then its final weight is its adjusted weight.

Key points to note

Average ordinary time earnings include all shift, penal, and other allowances: bonuses; paid leave; and commissions earned in the survey payweek. Payments not earned in the week (such as back pay, redundancy, and severance pay) and non-taxable payments (such as tool money) are excluded. In contrast, the labour cost index (LCI) excludes irregular payments such as bonuses and commissions, and also excludes increases in salary and wage rates due to service increments and merit promotions. Casual employees and those employees temporarily absent from work due to sickness, leave, industrial disputes, and being temporarily laid off are included only if they are paid in the survey reference week.

Compositional effects

Movements in average earnings statistics are influenced not only by changes in employees' remuneration resulting from changes in wage rates, salaries, and hours worked but also by changes in the composition of the paid workforce from survey to survey. A measure that separates out the effects of employee remuneration and compositional changes in the workforce on these movements is not available.

Compositional changes that may affect movements in average earnings statistics and changes in weighted contributions include changes in the relative numbers of employees and their paid hours. These changes occur between males and females, full-timers and part-timers, different industries or within industries, and between different sectors or within sectors. (See the following section, 'Changes in weighted contribution', for more information.)

This means that the QES does not provide a good measure of pure wage inflation, as it is not possible to isolate shifts in numbers of employees and paid hours from pure wage increases. The QES collects total payout information for each business in the survey. An increase (or decrease) in total payout does not necessarily indicate that there has been an increase (or decrease) in wages. Total payout for a firm could have increased because more people were employed, more hours were worked, more qualified people were employed, or more full-time workers were employed. Survey respondents are not asked to explain changes in total payout from period to period; therefore, there is no way to isolate a pure wage increase.

However, wage increases excluding compositional effects are measured by the LCI. The LCI measures movements in salary and wage rates for a fixed quality and quantity of work, and is therefore a better measure of pure wage inflation.

Changes in weighted contribution

Level estimates for average hourly earnings and average weekly earnings can be expressed as the sum of contributions from each industry group (or sex, or sector, or size of firm). In turn, the

contribution of each industry group can be determined by multiplying its average earnings by its share of paid hours (in the case of average hourly earnings) or paid employees (in the case of average weekly earnings). This returns an industry's weighted contribution.

Expressing the level estimate in this way highlights the effects of both the relative level of average hourly earnings in an industry, and the industry's share of total hours (or employees, in the case of weekly earnings).

In the retail trade industry, for example, it can be seen that average hourly earnings are lower than the average for all industry groups combined. If this industry had a significant increase in total ordinary time paid hours, and all other industries showed no change, then the weighted contribution of all the other industries would decrease relative to the contribution of retail trade. The influence of the retail trade industry would increase, and more weight would be given to its average ordinary time hourly earnings. This could result in the average decreasing for all industries combined, even though the contribution from the retail trade industry was positive. The average can decrease because there has been a relative decrease in the contribution from higher paid industries.

An example

The effect of weighted contributions can be demonstrated in a simple example. Say there are only two industries: Industry A and Industry B.

Period	Person	Average hourly earnings	Total hours paid	Hours contribution	Weighted contribution to average hourly earnings
1	Industry A	$10.00	120	0.43	$4.29
	Industry B	$50.00	160	0.57	$28.57
	Total	$32.86	280	1.00	$32.86
2	Industry A	$11.67	120	0.33	$3.89
	Industry B	$50.00	240	0.67	$33.33
	Total	$37.22	360	1.00	$37.22

Total average hourly earnings have risen by 13.3 percent, from $32.86 to $37.22. The increases at the industry level are 16.7 percent and 0 percent for industries A and B, respectively. However, the weighted contribution of Industry A to average hourly earnings actually decreased in period 2.

Even though Industry A had an increase in average earnings in period 2 and Industry B did not, Industry A made a negative contribution to the total overall movement, while Industry B made a positive contribution. This happened because:

(i) Industry B has higher average hourly earnings than Industry A.

(ii) Industry B’s already high share of total paid hours increased in period 2.

This example of compositional change in paid hours at the industry level shows that compositional changes and changes in weighted contributions, rather than changes in wages, can drive changes in average earnings at the national level.

Average and median earnings

It is sometimes said that QES average earnings seem high, being boosted by those employees with very high earnings, and that median earnings measures would be more appropriate. QES average hourly earnings are calculated by dividing the total earnings of employees in all surveyed businesses by the total number of hours they are paid for. Average weekly earnings are calculated by dividing total earnings of employees in all surveyed businesses by the number of FTEs.

A median earnings estimate would be calculated by ranking the earnings of individual employees in order from lowest to highest, and taking the middle one. However, it is not possible to calculate median earnings from data collected by the QES. To do so, it would be necessary to have information on the earnings and hours of each individual employee, whereas the QES collects only the total earnings and hours of all employees at each surveyed business location.

Median and average earnings can be calculated from information collected by the New Zealand Income Survey (NZIS). The NZIS is run every June quarter as a supplement to the Household Labour Force Survey (HLFS). It was run for the first time in the June 1997 quarter. All respondents to the HLFS are surveyed and information is collected on income from self-employment, wages, and salaries (up to three main jobs), government transfers (including payments from the Ministry of Social Development, Inland Revenue, and the Accident Compensation Corporation), and income from investments and other private transfers (including private superannuation, pensions, and annuities).

Data from the NZIS for the June 2010 quarter showed that 63.42 percent of wage and salary earners had hourly earnings lower than the overall average for wage and salary earners. This confirms that the distribution of earnings is asymmetrical, with a bulge at the low end and a tail at the high end.

It is important to note that the data from the NZIS is not directly comparable with the QES.

Further information

Further technical information, including details of definitions and calculations, is available on request.

A wider range of QES statistics than is presented in this release is available on Infoshare, Statistics NZ's publicly accessible online database, or in a customised format to suit your requirements.

More information

Information about the Quarterly Employment Survey is available on our website.

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Tables

The following tables are printed with this information release and can also be downloaded from the Statistics NZ website in Excel format. If you do not have access to Excel, you may use the Excel file viewer to view, print and export the contents of the file.

1. Total weekly gross earnings by ANZSIC group, males and females combined
2. Total weekly paid hours by ANZSIC group, males and females combined
3. Total weekly gross earnings and paid hours, seasonally adjusted and trend series, males and females combined
4. Full-time equivalent employees (FTEs), by part-time/full-time status and sex
5. Filled jobs by ANZSIC group and sex
6. Average hourly earnings, by sector, males and females combined

7.01. Average earnings and hours, all surveyed industries, males and females combined
7.02. Average earnings and hours, all surveyed industries, males
7.03. Average earnings and hours, all surveyed industries, females

8. Average weekly paid hours, seasonally adjusted and trend series, males and females combined
9. Average hourly earnings by ANZSIC group, males and females combined
10. Weighted contribution towards average total hourly earnings, by ANZSIC group, at mid-point of quarter