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Labour Cost Index (Salary and Wage Rates): December 2010 quarter

Highlights

In the December 2010 quarter, salary and wage rates (including overtime) increased 0.5 percent.

From the December 2009 quarter to the December 2010 quarter:

- Salary and wage rates (including overtime) rose 1.7 percent.
- Overtime wage rates rose 2.2 percent.
- Private sector salary and ordinary time wage rates rose 1.9 percent.

Sector	Salary and ordinary time wage rates Percentage change		All salary and wage rates (including overtime) Percentage change	
	From previous quarter	From previous year	From previous quarter	From previous year
All sectors	0.5	1.7	0.5	1.7
Public sector	0.4	1.4	0.4	1.4
Private sector	0.6	1.9	0.6	1.9



Source: Statistics New Zealand

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Commentary

Overview

The labour cost index (LCI) increased 1.7 percent in the year to the December 2010 quarter, up from 1.6 percent increases in the years to the September 2010 and June 2010 quarters. Annual wage growth had declined from a peak of 4.0 percent in the year to the September 2008 quarter to 1.5 percent in the year to the March 2010 quarter. At the time, the year to the March 2010 quarter rise was the lowest in nine years.

Statistics from the Quarterly Employment Survey (QES) show that average hourly earnings increased 1.9 percent in the year to the December 2010 quarter. The QES average earnings statistics reflect not only changes in wages and salaries, but also compositional and other changes across and within the paid workforce. In contrast, the LCI measures changes in salary and wage rates for a fixed quantity and quality of labour input. Service increments, merit promotions, and changes to salary and wage rates relating to the performance of the individual employee are not shown in the LCI.

In the LCI, all salary and wage rates (including overtime) rose 0.5 percent in the December 2010 quarter, which is the same as in the September 2010 quarter.



Source: Statistics New Zealand

Salary and ordinary time wage rates increased 1.7 percent in the year to the December 2010 quarter, following 1.6 percent increases in both the years to the September 2010 and June 2010 quarters. In the December 2010 quarter, salary and ordinary time wage rates rose 0.5 percent, the same rise as in the September 2010 quarter.

Overtime wage rates increased 2.2 percent in the year to the December 2010 quarter. This follows increases of 2.2 percent in the year to the September 2010 quarter and 2.1 percent in the year to the June 2010 quarter. In the December 2010 quarter, overtime wage rates rose 0.4 percent, down from rises of 0.6 percent in the September 2010 quarter and 0.7 percent in the June 2010 quarter.

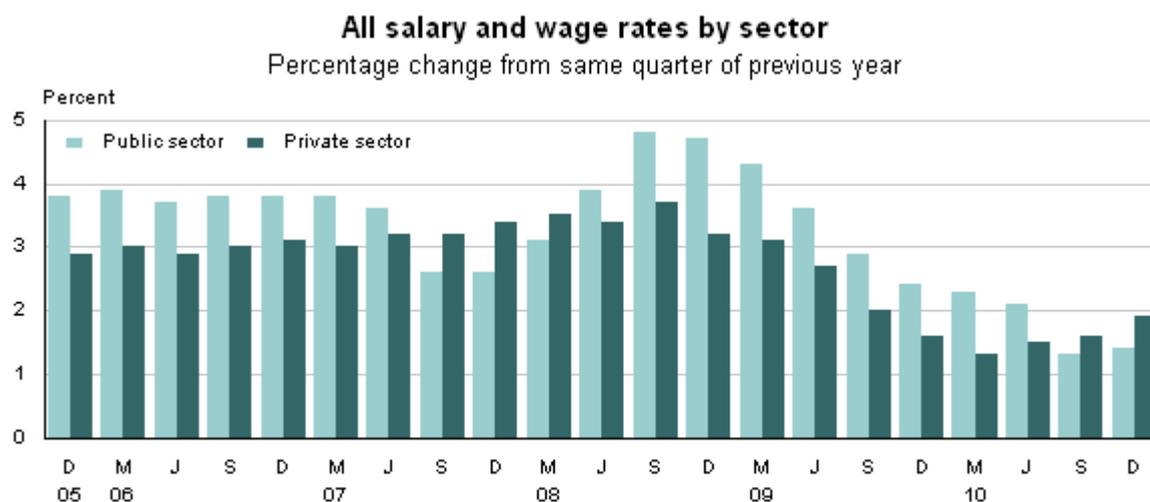
In the year to the December 2010 quarter, the mean increase for all surveyed salary and ordinary time wage rates that increased was 3.6 percent, which is the same as in the year to the September 2010 quarter. In the December 2010 quarter, the mean increase for all surveyed salary and ordinary time wage rates that increased was 3.1 percent, down from 3.4 percent in the September 2010 quarter.

Sector movements

Public sector

All salary and wage rates (including overtime) for the public sector increased 1.4 percent in the year to the December 2010 quarter. This follows increases of 1.3 percent in the year to the September 2010 quarter and 2.1 percent in the year to the June 2010 quarter. The increase in salary and wage rates (including overtime) in the year to the December 2010 quarter resulted from a 1.3 percent increase for central government and a 1.9 percent increase for local government.

In the December 2010 quarter, all salary and wage rates (including overtime) for the public sector rose 0.4 percent, following rises of 0.3 percent in the September 2010 quarter and 0.2 percent in the June 2010 quarter. In the December 2010 quarter, the increase was a result of a 0.3 percent rise for central government and a 1.0 percent rise for local government.



Source: Statistics New Zealand

Private sector

Private sector salary and wage rates (including overtime) increased 1.9 percent in the year to the December 2010 quarter, following increases of 1.6 percent in the year to the September 2010 quarter and 1.5 percent in the year to the June 2010 quarter. The latest annual increase is the largest since a 2.0 percent increase in the year to the September 2009 quarter. In the December 2010 quarter, private sector salary and wage rates (including overtime) rose 0.6 percent, following 0.5 percent rises in both the June 2010 and the March 2010 quarters.

Index numbers are rounded to the nearest index point and this affected the percentage increases for the December, September, and June quarters. If percentage changes were calculated on unrounded index numbers, then private sector salary and wage rates (including overtime) would have risen 0.5 percent in the December 2010 quarter, 0.6 percent in the September 2010 quarter, and 0.4 percent in the June 2010 quarter.

Salary and ordinary time wage rates for the private sector grew 0.6 percent and overtime rates grew 0.4 percent in the December 2010 quarter.

Industry movements

In the December 2010 quarter, the largest industry group rises in salary and wage rates (including overtime) were:

- financial and insurance services – up 1.2 percent
- local government administration – up 1.0 percent
- information media and telecommunications – up 0.9 percent.

In the year to the December 2010 quarter, the largest industry increases in salary and wage rates (including overtime) were:

- professional, scientific, and technical services – up 2.8 percent
- metal product manufacturing – up 2.6 percent.

Professional, scientific, and technical services industry

Salary and wage rates (including overtime) for the professional, scientific, and technical services industry (which includes accounting, business, and law services) increased 2.8 percent in the year to the December 2010 quarter, up from a 2.4 percent increase in the year to the September 2010 quarter.

In the December 2010 quarter, salary and wage rates (including overtime) for professional, scientific, and technical services rose 0.7 percent. This follows rises of 1.2 percent and 0.5 percent in the September 2010 and June 2010 quarters, respectively. The main reason respondents gave for the latest quarterly rise was 'to match market rates'.

Metal product manufacturing industry

In the year to the December 2010 quarter, salary and wage rates (including overtime) for the metal product manufacturing industry increased 2.6 percent, following a 1.9 percent increase in the year to the September 2010 quarter.

In the December 2010 quarter, salary and wage rates (including overtime) for the metal product manufacturing industry rose 0.8 percent. This follows rises of 1.0 percent in the September 2010 quarter and 0.4 percent in both the June 2010 and March 2010 quarters. Respondents gave 'cost of living' as the main reason for salary and wage rate increases in the December 2010 quarter.

Occupation movements

In the December 2010 quarter, the largest occupation group rises in salary and wage rates (including overtime) were:

- managers – up 0.7 percent
- automotive and engineering trades workers – up 0.7 percent
- clerical and administrative workers – up 0.7 percent.

In the year to the December 2010 quarter, overall annual increases in salary and wage rates (including overtime) for the three broad occupation groups were:

- managers, professionals, technicians, and trades workers – up 1.6 percent
- service, clerical, and sales workers – up 1.9 percent
- machinery operators, drivers, and labourers – up 1.9 percent.

Across all groups, annual increases ranged from 0.9 percent (for health professionals) to 2.5 percent (for general clerical workers). The 0.9 percent annual increase for health professionals is the lowest since a 0.8 percent increase in the year to the March 1994 quarter.

General clerical workers

In the year to the December 2010 quarter, salary and wage rates (including overtime) for general clerical workers increased 2.5 percent. This follows a 2.3 percent increase in the year to the September 2010 quarter.

General clerical workers' salary and wage rates (including overtime) rose 0.4 percent in the December 2010 quarter, following a 0.8 percent rise in the September 2010 quarter and a 0.7 percent rise in the June 2010 quarter. The main reason respondents provided for the latest quarterly increase was 'to reflect the cost of living'.

Distribution of pay rates

In the year to the December 2010 quarter, 53 percent of salary and ordinary time wage rates in the surveyed sample increased, up from 49 percent in the year to the September 2010 quarter. Forty-seven percent of the survey sample remained unchanged in the year to the December 2010 quarter, the lowest percentage since 44 percent remained unchanged in the year to the June 2009 quarter.

In the December 2010 quarter, 18 percent of salary and ordinary time wage rates in the surveyed sample rose, up from 17 percent in the September 2010 quarter. In comparison, 12 percent of the salary and ordinary time wage rates in the surveyed sample rose in the December 2009 quarter. For the five years from 2004 to 2008, an average of 17 percent of rates rose in the December quarter.

In the year to the December 2010 quarter, the distribution of annual movements was:

- 12 percent of salary and ordinary time wage rates increased by no more than 2 percent
- 17 percent increased by more than 2 percent but not more than 3 percent
- 14 percent increased by more than 3 percent but not more than 5 percent
- 9 percent increased by more than 5 percent.

Fifty-eight percent of overtime wage rates increased in the year to the December 2010 quarter, while 42 percent were unchanged.

Surveyed respondents were asked to give one or more reasons for each movement in pay rates. In the year to the December 2010 quarter, increases in salary and ordinary time wage rates were due to a combination of the following reasons:

- cost of living – 45 percent
- collective employment agreements – 32 percent
- match market rates – 25 percent

- retain staff – 9 percent
- attract staff – 1 percent.

Median and mean increases

The median (ie middle) increase for all surveyed salary and ordinary time wage rates that rose in the year to the December 2010 quarter was 2.9 percent, the same as in the year to the September 2010 quarter.

The mean increase for all surveyed salary and ordinary time wage rates that rose in the year to the December 2010 quarter was 3.6 percent, the same as the September 2010 quarter mean increase.

In both the years to the September and December 2010 quarters, both the median and mean increases were the lowest since the year to the March 2001 quarter, when the median increase was 2.7 percent and the mean increase was 3.5 percent.

Median and mean increases for salary and ordinary time wage rates by sector December 2010 quarter				
Sector	Percentage change from previous quarter		Percentage change from same quarter of previous year	
	Median increase*	Mean increase*	Median increase*	Mean increase*
Local government	2.8	3.0	2.8	3.4
Central government	2.0	2.5	2.0	3.0
Public sector	2.5	2.7	2.5	3.1
Private sector	2.7	3.2	3.0	3.7
All sectors	2.7	3.1	2.9	3.6

* Does not include decreases or rates that remained unchanged.

In the December 2010 quarter, the median increase was 2.7 percent, down from a 2.8 percent increase in the September 2010 quarter.

The mean increase in the December 2010 quarter was 3.1 percent, down from a 3.4 percent increase in the September quarter and the same as the increase in the June 2010 quarter.

Analytical unadjusted series

The analytical unadjusted series is an additional measure that is intended to complement the official LCI and QES indicators. Like the LCI, the unadjusted series measures changes in salary and wage rates for a fixed quantity of labour, but reflects quality change in addition to price change.

Unadjusted salary and ordinary time wage rates increased 3.6 percent in the year to the December 2010 quarter, up from a 3.1 percent increase in the year to the September 2010 quarter. The 3.6 percent increase in the year to the December 2010 quarter is the largest since a 3.8 percent rise in the year to the September 2009 quarter.

In the December 2010 quarter, unadjusted salary and ordinary time wage rates rose 1.0 percent, down from a 1.1 percent rise in the September 2010 quarter. This was the first time since the December 2008 quarter that these wage rates have risen for three consecutive quarters by 1.0 percent or more.

Private sector unadjusted salary and ordinary time wage rates increased 4.0 percent in the year to the December 2010 quarter, following a 3.4 percent increase in the year to the September 2010 quarter. Unadjusted salary and ordinary time wage rates in the private sector rose 1.0 percent in the December 2010 quarter, down from a 1.3 percent rise in the September 2010 quarter.

Analytical unadjusted and adjusted salary and ordinary time wage rates				
Private sector and all sectors combined				
December 2010 quarter				
Sector	Percentage change from previous quarter		Percentage change from same quarter of previous year	
	Adjusted	Unadjusted	Adjusted	Unadjusted
Private sector	0.6	1.0	1.9	4.0
All sectors	0.5	1.0	1.7	3.6

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Christchurch earthquakes

The Christchurch earthquakes on and after 4 September 2010 did not affect the LCI response rate for the December 2010 quarter. Pay rates collected from Christchurch reached the normal response level and all 'key' firms located in Christchurch responded to the survey.

In the December 2010 quarter, the proportion of salary and ordinary time and wage rates that rose, and the mean increase, were similar in Christchurch to those for the country as a whole.

In the construction industry, the median and mean increases for Christchurch were broadly in line with national movements. However, the proportion of salary and ordinary time and wage rates that increased for the construction industry was higher in Christchurch than nationally.

Implementation of new classifications

The 2006 version of the Australian and New Zealand Standard Industrial Classification (ANZSIC06) and the Australian and New Zealand Standard Classification of Occupations (ANZSCO) were implemented in the LCI (salary and wage rates) in the September 2009 quarter.

The LCI was re-expressed on a base of the June 2009 quarter (=1000). The sample of surveyed job descriptions was refreshed to better reflect the structure of the ANZSIC06 classification. New positions representing about 3 percent of the expenditure weight were added to the survey in ANZSIC06 industries that had been under-represented in the old sample.

Official industry and occupation movements for the LCI (salary and wage rates) are those of the ANZSIC06 and ANZSCO series from the September 2009 quarter (that is, for the September 2009 quarter compared with the June 2009 quarter) onwards, and of the ANZSIC96-based and ANZSCO-based series up to the June 2009 quarter inclusive.

As there is a high level of discontinuity between the old and new occupation and industry breakdowns, the new series were not linked to the old series. The indexes of all industries/occupations combined were linked to the existing series and re-expressed on a base of the June 2009 quarter (=1000).

The ANZSIC06-based industry and ANZSCO-based occupation indexes were not backcast further than the September 2009 quarter. However, the LCI (salary and wage rates) series on the old classifications were published until the June 2010 quarter, providing a year-long overlap. The series on the old classifications are not available after the June 2010 quarter.

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Next release ...

Labour Cost Index (Salary and Wage Rates): March 2011 quarter will be released on

3 May 2011.

Technical notes

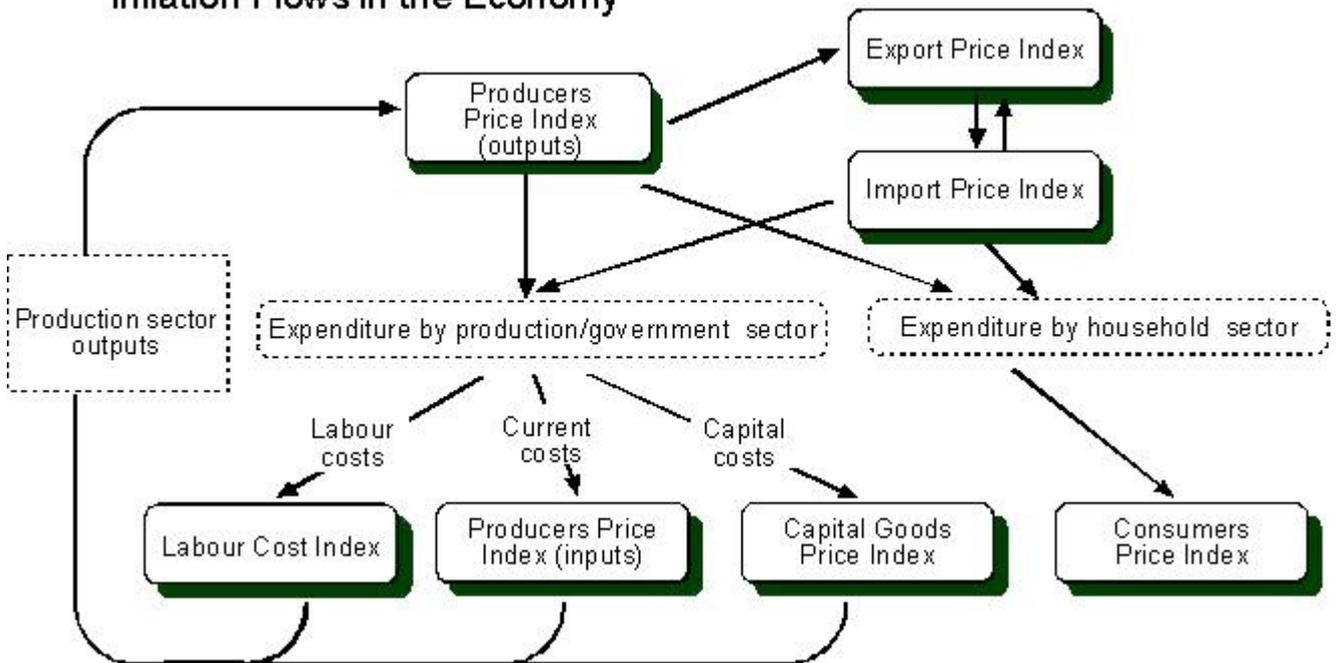
What the index measures

The salary and wage rates component of the labour cost index (LCI) measures movements in base salary and ordinary time wage rates and overtime wage rates. The non-wage component measures changes in the following costs:

- annual leave and statutory holidays
- superannuation
- ACC employer premiums
- medical insurance
- motor vehicles available for private use
- low-interest loans.

The LCI sits alongside the producers price inputs index (which measures changes in businesses' current costs of production, excluding labour and capital costs, as defined by the New Zealand System of National Accounts' concept of intermediate consumption) and the capital goods price index (which measures changes in businesses' capital costs). This is shown in figure 1 below. These three indexes provide measures of the extent to which changes in businesses' input costs put pressure on the output prices they charge for goods and services. Information from the Annual Enterprise Survey indicates that labour costs account for about 16 percent of employers' total expenditure (including depreciation).

Figure 1
Inflation Flows in the Economy



The LCI has fixed industry and occupation weights, and measures changes in salary and wage rates for a fixed quantity and quality of labour input. Service increments, merit promotions, and increases (and decreases) relating to the performance of employees are not shown in the index (see the section on quality control for more details). By comparison, the average earnings measures from the Quarterly Employment Survey (QES) reflect not only changes in pay rates, but also compositional change (ie changes in the mix of labour from period to period).

Implementation of new classifications

The September 2009 quarter release was the first using the updated 2006 version of the Australian and New Zealand Standard Industrial Classification (ANZSIC06) and the Australian and New Zealand Standard Classification of Occupations (ANZSCO).

ANZSIC06 and ANZSCO have been jointly developed by Statistics NZ and the Australian Bureau of Statistics to ensure that the classifications remain current and relevant, reflecting the changes that have occurred in the structure and composition of industry and occupation.

New industry-based classification ANZSIC06

ANZSIC06 has been developed to provide a more contemporary industrial classification system. Changes in the economy, user requirements, and comparability with international standards were taken into account. The new industry breakdown for the LCI consists of 29 published industry groups, compared with the 27 previously published under the 1996 version of ANZSIC (ANZSIC96).

The significant changes are:

- ANZSIC06 has 19 divisions, compared with 17 in ANZSIC96.
- Information media and telecommunications (J) is a new division under ANZSIC06. It incorporates units from a number of different ANZSIC96 divisions, including publishing (formerly within division C), communication services (formerly division J), and motion picture, radio, and television services (formerly within division P). This new division was implemented to reflect this rapidly growing sector.
- Property and business services, division L under ANZSIC96, and parts of other services (Q) have been split into three new divisions under ANZSIC06: rental, hiring, and real estate services (L), professional, scientific, and technical services (M), and administrative and support services (N).
- The production function concept was applied, which is a key principle under ANZSIC06. Units whose sole activity is the actual delivery of government programmes are included in the division that records the type of service they are delivering, and not in public administration and safety (O).
- Manufacturers who sold their products directly to end consumers were in some cases (eg bakeries) classified under ANZSIC96 to retail trade (G). Under ANZSIC06 those units that undertake both the manufacture and sale of their products are classified under manufacturing (C).

A concordance of ANZSIC06 and ANZSIC96, based on enterprises, can be found on the Statistics NZ website in the [New Zealand Business Demography Statistics: At February 2008](#) as a supplementary table. This gives an indication of the relationship between the ANZSIC06 and ANZSIC96 divisions.

New occupation-based classification ANZSCO

The occupation-based Australian and New Zealand Standard Classification of Occupations (ANZSCO) was also implemented in the September 2009 quarter release, replacing the New Zealand Standard Classification of Occupations (NZSCO99). The new classification criteria for ANZSCO are similar to those used for NZSCO99, but ANZSCO provides a greater definition of skill level. One of the major changes under ANZSCO is the introduction of eight major groups, instead of nine under NZSCO99. These major groups are:

1. managers
2. professionals
3. technicians and trades workers
4. community and personal service workers
5. clerical and administrative workers
6. sales workers
7. machinery operators and drivers
8. labourers.

Further significant changes are:

- The NZSCO99 major group, agriculture and fishery workers has ceased, and under ANZSCO is spread across 1 – managers, 3 – technicians and trades workers, and 8 – labourers.
- Under ANZSCO, the NZSCO99 major group, service and sales workers has split into two major groups: 4 – community and personal service workers and 6 – sales workers.
- ANZSCO has more information and communication technology (ICT) unit groups and occupations compared with NZSCO99.

Some of the published sub-major groups have changed.

The eight groups under ANZSCO are grouped together for the LCI into three new broad occupation groups:

- managers, professionals, and technicians and trades workers – ANZSCO major groups 1, 2, and 3
- service, clerical, and sales workers – ANZSCO major groups 4, 5, and 6
- machinery operators and drivers, and labourers – ANZSCO major groups 7 and 8.

Skill level

ANZSCO assigns each occupation to one of five skill levels. A skill level is based on the range and complexity of tasks performed in a particular occupation. The greater the range and complexity of the tasks, the higher the skill level of an occupation.

In general, a skill level is measured by:

- the level or amount of formal education and training
- the amount of previous experience in a related occupation
- the amount of on-the-job training.

Under ANZSCO, skill level is not a measure of an individual working in a particular job. Rather, it is seen as a measure of those skills that are typically required to competently perform the tasks of a particular occupation. It is irrelevant whether a particular individual working in a job has a certain amount of training or a particular level of competence or not.

The definitions of the five skill levels are:

Skill level 1

A bachelor's degree or higher qualification is required for this skill level. It may be possible to replace the formal qualification with at least five years of relevant work experience. In some instances, relevant work experience and/or on-the-job training may be needed in addition to the

formal qualification. These occupations are typically drawn from major groups 1 – managers, and 2 – professionals.

Skill level 2

For this skill level, either a New Zealand Register diploma or at least three years of relevant work experience is required. In some instances, relevant experience and/or on-the-job training may be required in addition to the formal qualification. These occupations are typically drawn from major groups 1 – managers, 3 – technicians and trade workers, 4 – community and personal service workers, 5 – clerical and administrative workers, and 6 – sales workers.

Skill level 3

The requirement for skill level 3 is a New Zealand Register level 4 qualification, or at least three years of relevant experience. For some occupations relevant experience and/or on-the-job training may be required in addition to the formal qualification. These occupations are typically drawn from major groups 3 – technicians and trade workers, 4 – community and personal service workers, 5 – clerical and administrative workers, and 6 – sales workers.

Skill level 4

For this skill level a New Zealand Register level 2 or 3 qualification is required to perform the work. It may also be possible to replace the formal qualification with at least one year of relevant work experience and, in some instances, relevant experience and/or on-the-job training may be required in addition to the formal qualification. These occupations are typically drawn from major groups 4 – community and personal service workers, 5 – clerical and administrative workers, 6 – sales workers, 7– Machinery operators and drivers, and 8 – labourers.

Skill level 5

The requirement for skill level 5 is a New Zealand Register level 1 qualification. In some instances these occupations may require a short period of on-the-job training in addition to or instead of the formal qualification. Other occupations require no formal qualification or on-the-job training. These occupations are typically drawn from major groups 4 – community and personal service workers, 5 – clerical and administrative workers, 6 – sales workers, and 8 – labourers.

Infoshare series references

The new LCI (salary and wage rates) series references hold index times series expressed on a base of the June 2009 quarter (=1000). The series reference for the occupation indexes changes from LCIQ.SF to LCIQ.SH (eg LCIQ.SF51Z9 to LCIQ.SH51Z9). For industries, the series references change from LCIQ.SE to LCIQ.SG (eg LCIQ.SE53Z9 to LCIQ.SG53Z9). The skill level index has the series reference LCIQ.SI.

The new series references begin with indexes for the June 2009 quarter. As there is a high level of discontinuity between the old and new occupation and industry breakdowns, the new series have not been linked to the old series.

The indexes of all industries/occupations combined have been linked to the existing series and re-expressed on a base of the June 2009 quarter (=1000).

The new industry and occupation series have not been backcast prior to the June 2009 quarter. However, the LCI (salary and wage rates) series on the old classifications were published until the June 2010 quarter, providing a year-long overlap.

Index calculation and base

The LCI is calculated using the price-relatives form of the base-weighted Laspeyres formula, and is expressed 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.

Coverage

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

Weights

Each job description used in calculating the index was assigned a weight that reflected the relative importance of the job description within its sector of ownership, industry, and occupation group. Weights were calculated using 2006 Census of Population and Dwellings information on the relative importance of occupations within each sector by industry group, Business Frame information on the relative importance of industry groups within each sector, and pay rates surveyed in the June 2009 quarter.

The following table shows the new occupation group weights for all salary and wage rates and for the skill levels under ANZSCO.

Occupation group	Weight (Percent)
Managers	21.7
Professionals	25.9
Technicians and trades workers	12.4
Managers, professionals, technicians, and trades workers	60.1
Community and personal service workers	6.1
Clerical and administrative workers	13.2
Sales workers	6.5
Service, clerical, and sales workers	25.8
Machinery operators and drivers	5.8
Labourers	8.3
Machinery operators, drivers, and labourers	14.1
All occupations combined	100.0
Note: Percentages may not sum to totals due to rounding.	

Skill level	Weight (Percent)
1	45.1
2	8.6
3	12.8
4	21.2
5	12.3
All skill levels combined	100.0

How information is obtained

Salary and ordinary time and overtime wage rates for a fixed set of job descriptions are obtained by a quarterly postal survey of employers. Each quarter, salary and wage rates are surveyed for the pay period in which the 15th of the middle month of the quarter falls.

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. This is achieved in practice by asking respondents to provide reasons for movements in salary and wage rates. If a movement is due to more than one reason, the respondent is also asked to indicate how much of the movement is due to each reason. To further assist the measurement of movements in pay rates for a fixed level of labour input, job descriptions are specified in detail. Surveyed job descriptions typically specify the duties involved, qualifications required, years of service, and number of hours worked.

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 the description is amended 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.

One-off payments in lieu of pay rises are also excluded, as they do not result in changes to pay rates, as such. There have been several employment contract settlements in recent years of this type, particularly in the central government sector.

Regular fixed allowances and regular fixed bonuses are included in surveyed pay rates. Where included, these are specified in job descriptions. Payments such as commissions and irregular bonuses are excluded, however, 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.

Index number rounding

Index number rounding uses standard Statistics NZ rounding procedures. It can occasionally result in movements for a particular cost being slightly higher or lower than would be expected, given movements recorded for component costs.

For example, the all sectors combined increase for salary and ordinary wage rates of 0.4 percent from the September 2009 quarter to the December 2009 quarter is larger than the 0.3 percent increases for both the public sector and the private sector. The lower figure for the private sector was mainly caused by the index number for the September 2009 quarter being rounded up to the nearest index point and the index number for the December 2009 quarter being rounded down to the nearest index point.

Median and mean increases

The latest quarterly and annual results for the median and mean increases are discussed in the commentary. The mean tends to be higher than the median because the distribution changes in pay rates are skewed to the right, with a bulge at the low end and a tail at the high end. The relatively few large increases boost the mean increase but have little effect on the median increase.

The median and mean increases are calculated using the percentage change in recorded salary and ordinary time wage rates. This differs from the quarterly and annual index movements, which measure the percentage change between calculated index numbers.

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. These tables are available on the Statistics NZ website (www.stats.govt.nz).

The analytical unadjusted series is an additional measure that is intended to complement the official LCI and QES indicators and provide users 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 taken in compiling the published and analytical unadjusted series could be summarised as follows:

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. 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, are shown in the index. 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 annum, per week, per 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, between 1 and 2 percent of surveyed rates are excluded from the unadjusted index each quarter for these reasons.

The analytical unadjusted index is calculated 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, the price changes (after quality control) of job positions in the sample (from the base period to the previous quarter) are used to scale base-period expenditure weights (which are then assigned to job positions in the sample).

It should be noted that 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, individual employees are tracked 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 make use of 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 2006. 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).

In addition to changes in pay rates, change in the QES measures of total and average gross earnings fully reflect compositional change, such as change from period to period in the proportions of employees and paid hours in different industries and different occupations. The measures reflect relative employment shifts both between and within industries and occupations. These measures are useful in the context of the potential effect that change in gross and average income earned by paid employees might have on the demand for goods and services purchased by the household sector.

An example of how a specific position would be treated in the published LCI and in the analytical unadjusted index follows:

Year	Salary scale				
	Step 1	Step 2	Step 3	Step 4	Step 5
1	\$30,000	\$40,000	\$50,000	\$60,000	\$70,000
2	\$30,900	\$41,200	\$51,500	\$61,800	\$72,100
3	\$31,827	\$42,436	\$53,045	\$63,654	\$74,263
4	\$32,782	\$43,709	\$54,636	\$65,564	\$76,491
5	\$33,765	\$45,020	\$56,275	\$67,531	\$78,786

Year/ quarter	Reported pay rate (per annum)	Reason for change	Treatment	Published LCI	Analytical unadjusted index
Y1Q1	\$40,000			1000	1000
Y1Q2	\$40,000			1000	1000
Y1Q3	\$40,000			1000	1000
Y1Q4	\$40,000			1000	1000
Y2Q1	\$41,200	Price adjustment to step 2 of scale to match market rates and reflect the cost of living.	Price change; shown in the published and unadjusted indexes.	1030	1030

Year/ quarter	Reported pay rate (per annum)	Reason for change	Treatment	Published LCI	Analytical unadjusted index
Y2Q2	\$51,500	Service increment from step 2 to step 3.	Quality change; shown only in the unadjusted index.	1030	1288
Y2Q3	\$51,500			1030	1288
Y2Q4	\$51,500			1030	1288
Y3Q1	\$53,045	Price adjustment to step 3 of scale to match market rates and reflect the cost of living.	Price change; shown in the published and unadjusted indexes.	1061	1326
Y3Q2	\$42,436	New, less experienced employee placed on step 2 replaces the incumbent.	Quality change; shown only in the unadjusted index.	1061	1061
Y3Q3	\$42,436			1061	1061
Y3Q4	\$42,436			1061	1061
Y4Q1	\$43,709	Price adjustment to step 2 of scale to match market rates and reflect the cost of living.	Price change; shown in the published and unadjusted indexes.	1093	1093
Y4Q2	\$54,636	Service increment from step 2 to step 3.	Quality change; shown only in the unadjusted index.	1093	1366
Y4Q3	\$54,636			1093	1366
Y4Q4	\$54,636			1093	1366
Y5Q1	\$56,275	Price adjustment to step 3 of scale to match market rates and reflect the cost of living.	Price change; shown in the published and unadjusted indexes.	1126	1407
Y5Q2	\$45,020	New, less experienced employee placed on step 2 replaces the incumbent.	Quality change; shown only in the unadjusted index.	1126	1126
Y5Q3	\$45,020			1126	1126
Y5Q4	\$45,020			1126	1126

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](#) provides information on the price indexes produced by

Statistics NZ 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.

More information

For more information, follow the [link](#) from the technical notes of this release on the Statistics NZ website.

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Tables

The following tables are printed with this Hot Off The Press and can also be downloaded from the Statistics New Zealand 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 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 Proportion of salary and wage rates increasing, all sectors combined
- 6.3 Distribution of annual increases by reason, all sectors combined
- 7 Median and mean increases, all sectors combined
- 8.1 Published and analytical unadjusted indexes, private sector
- 8.2 Published and analytical unadjusted indexes, 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

The following tables can be downloaded from the Statistics NZ website in Excel format.

- 1.1 Distribution of annual increases, reason: cost of living
- 1.2 Distribution of annual increases, reason: match market rates
- 1.3 Distribution of annual increases, reason: retain staff
- 1.4 Distribution of annual increases, reason: attract staff
- 1.5 Distribution of annual increases, reason: match market rates and/or retain/attract staff
- 1.6 Distribution of annual increases, reason: collective employment agreements