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## Labour Market Statistics (Income): June 2018 quarter

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## Labour Market Statistics (Income): June 2018 quarter

### Title

Labour Market Statistics (Income): June 2018 quarter

## Labour Market Statistics (Income) Metadata Package

### Title

Labour Market Statistics (Income) Metadata Package

## Concepts

### Labour Market Statistics (Income) Concept set

- [Disability - Disability](#)
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- [Gender pay gap - Gender pay gap](#)
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### Disability

Disability status is determined by a set of questions ([The Washington Group Short Set](#)), that ask respondents about their ability to carry out six basic activities.

The activities are:

- seeing, even if wearing glasses
- hearing, even if using a hearing aid
- walking or climbing steps
- remembering or concentrating
- washing all over or dressing
- communicating

The response options are:

- No difficulty
- Some difficulty
- A lot of difficulty
- Can't do at all

People who respond 'a lot of difficulty' or 'can't do at all' to at least one of the activities are counted as disabled in the survey.

### 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.

### 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.

### Gender pay gap

The difference between men's and women's median hourly earnings.

### Government transfers

Income from benefits, working for families tax credits, paid parental leave, student allowances, New Zealand Superannuation, and Veteran's and war pensions.

### Hourly earnings

Calculated by dividing weekly income by weekly hours worked/paid.

### Income for all people from all sources collected

Income averaged across all people from all sources collected (Wages and salaries, self-employment, government transfers, and ACC). Includes those who have zero income for some income sources.

 Income from source

Income averaged across those receiving income from a source and only includes people who receive that source of income.

 Labour force

Members of the working-age population, who during the survey reference week, were classified as 'employed' or 'unemployed'.

 Labour force status

Whether a person is employed, unemployed or not in the labour force. These three are mutually exclusive and every eligible respondent has to have a labour force status.

 Mean

The average value - the mean is calculated by adding two or more figures and dividing the sum by the number of figures.

 Median

The point at which half the people receive more and half receive less than the stated amount. Since the 2008 release a greater emphasis has been put on medians, because extremely high or low incomes tend to have less influence on median amounts than they do on an average (mean) figure.

 Not in the labour force

Any person in the working-age population who is neither employed nor unemployed, as defined above, is deemed to be not in the labour force. This residual category includes, for example:

- retired persons
- persons with personal or family responsibilities such as unpaid housework and childcare
- persons attending educational institutions
- persons permanently unable to work due to physical or mental handicaps
- persons who were temporarily unavailable for work in the survey reference week
- persons who are not actively seeking work

 Paid employment

Working for wages and salaries and/or self-employed.

 Status in employment

Refers to whether a respondent was an employee, self-employed and not employing others, an employer of others, or an unpaid family worker.

### Wages and salaries

Is the remuneration paid to employees.

### Working-age population

The usually resident non-institutionalised population of New Zealand aged 15 years and over.

### 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.

## Universes

### Labour Market Statistics (Income)

- [Labour Market Statistics \(Income\) Universe set - Labour Market Statistics \(Income\)](#)

### Labour Market Statistics (Income) Universe set - Labour Market Statistics (Income)

Labour Market Statistics (Income)

### **HLFS/Income**

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

- people who have been living in New Zealand for less than 12 months, and who do not propose to stay in New Zealand for a total of 12 months or more
- long-term residents of homes for older people, hospitals, and psychiatric institutions (long-term is defined as six weeks or more)
- people in prison

## Data Collections

### Labour Market Statistics (Income) Data Collection

Labour Market Statistics (Income) provides annual information about individual and household income, including wages and salaries, self-employment, and government transfers income. We analyse data by age, sex, ethnicity, region, highest qualification, industry, and occupation.

The LMS (Income) release reports on information collected from the Household Labour Force Survey (HLFS) during the June quarter. As this income content is integrated into the HLFS questionnaire, many of the same design, collection and processing aspects apply as for the HLFS.

#### Design

##### Data source

The target population is the entire group from which you would ideally like to get information. The target population for the HLFS/Income is the working-age population of New Zealand. We define this as "the non-institutionalised population 15 years and over, who usually live in New Zealand." Specifically the target population excludes:

- people who have been living in New Zealand for less than 12 months, and who do not propose to stay in New Zealand for a total of 12 months or more
- long-term residents of homes for older people, hospitals, and psychiatric institutions (long-term is defined as six weeks or more)
- people in prison

The survey population consists of the group members (from the target population) who have a chance of being selected as part of the sample (ie they can be identified through the sampling frame). For the HLFS/Income, we apply further exclusions to the target population to create the survey population (often due to cost and practical reasons), from which we then select the HLFS/Income sample. These exclusions are a small percentage of the population and the bias introduced is minimal. The survey population is the target population with these exclusions. People:

- residing in non-private dwellings (eg people in hotels, motels, hostels, military camp)
- residing in non-permanent dwellings (eg people in tents or caravans not permanently sited)
- residing at a wharf or landing place (eg people in ships, boats)
- residing on islands other than the North, South, and Waiheke islands (eg people on Great Barrier, Kawau, Chatham, and Stewart islands)

##### Sample design

The HLFS/Income sample has a stratified design with two stages of clustering. Firstly we select a random sample of primary sampling units (PSUs) from each stratum (first stage of clustering), then we select a systematic sample of households from each PSU (second stage of clustering). Every person in a selected household aged 15 years and over is eligible for the survey. PSUs are aggregations of one or more meshblocks, where meshblocks are the smallest geographical area unit in New Zealand. PSUs constructed from the 2013 Census have an average of 70 occupied and under construction dwellings.

Stratification is the process of dividing the population (or survey frame) into homogeneous subgroups before sampling. Stratification is used to 1) reduce sampling errors for survey estimates and ensure that sample sizes for strata are of their expected size and 2) target subgroups by disproportionate sampling (or over-sampling) certain strata.

Stratification for the new HLFS/Income sample design includes five dimensions. PSUs are stratified by region, urban/rural status, a high-NILF (not in the labour force) status, groups based on New Zealand Deprivation Index values, and territorial authority (in that order). The first four dimensions are explicit, or primary, strata (ie the sample is split by these groups and a random sample selected from each group), while the final dimension is implicit (PSUs are sorted by territorial authority within the primary strata and selected from the ordered list).

### Sample size

The HLFS/Income aims to achieve interviews with 15,000 households, which equates to roughly 30,000 individuals.

### Collection

#### Interviews

The period of surveying/interviewing for the June quarter is the 13 weeks between April and June (inclusive). Income information obtained relates to the respondent's most-recent pay period, except for questions on annual income, and self-employment income which cover the 12 months before the interview. HLFS information obtained relates to the week before the interview (referred to as the 'survey reference week'). Respondents in the HLFS are first interviewed face-to-face at their home. Subsequent interviews are by telephone wherever possible (including for income content in June quarters).

#### Proxies

The HLFS/Income allows interviewers to take responses from proxies if a respondent is unavailable or unable to answer the questions themselves. Although the evidence regarding the quality of proxy responses is mixed, we expect proxies may not be as accurate as self-responses. Therefore, the HLFS/Income monitors the rate of proxy responses – to gauge the quality of responses. The proxy rate is calculated as the percentage of respondents who had someone else respond on their behalf divided by the total number of respondents.

#### Response rate and achieved sample rate

The achieved sample size measure is the number of eligible households and individuals that responded to the HLFS/Income 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.

### Processing

#### Weighting

To enable us to infer from the sample to the target population we must weight the sample data. This entails assigning each responding or imputed individual a weight, which can be thought of as the number of people in the population that each individual represents.

#### ##### Selection weight

The first stage of the weighting is the selection weight (also called a design weight). The overall selection weight for a household is made up of the PSU selection weight and the household selection weight. We calculate the selection weight for each PSU as the inverse of the probability of selection, so PSUs with a lower probability of selection receive a higher selection weight. Within strata, PSUs are selected with probability proportional to size. This means that larger PSUs have a higher probability of being selected.

We next multiply the PSU selection weight by a household selection weight to give the overall selection weight. The household selection weight accounts for the sampling of households within PSUs – we calculate it as the inverse of the selection probability, where the selection probability is the number of selected addresses in the PSU divided by the total number of addresses in the PSU.

#### ##### Calibration

The final stage of weighting for the HLFS/Income is the calibration to benchmarks (auxiliary information), which are the expected counts of people in the total target population. This adjusts for undercoverage of the target population and undercounting of some groups in the population due to differential response rates. We

set the calibration weights to sum to a set of benchmarks. The benchmarks we use for Income are five-year age groups by sex, the number of Māori adults by sex by two age groups (age 15–29, 30+), and 12 regions. Integrated weighting is used in the calibration to assign a weight to each individual in the sample. Each individual in a sampled household is given the same weight, which is also the same as the household weight. This allows the production of household estimates which are consistent with person estimates.

#### Imputation

Imputation is the process where missing values are substituted with an estimate of what the respondent might have provided for a particular variable. This process aims to minimise the loss of data and improve the accuracy of estimates.

Imputation is first applied to core variables in the HLFS where individuals who belong to eligible responding dwellings and have missing values for sex, age, ethnicity, looking for full-time employment, and usual and actual hours. Then imputation is applied to individuals who have missing values for income from jobs and income from government transfers.

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All variables are imputed using donor imputation, where the donor is a respondent with similar characteristics (nearest-neighbour imputation).

Usual hours are imputed where respondents have provided their actual number of hours worked, and not their number of usual hours.

For those respondents who have not provided either total usual or total actual hours, donor imputation is applied (imputation of usual hours based on the usual hours from respondents with similar characteristics).

Hours used in Income are derived from the HLFS usual or actual hours depending on the route taken to provide income about their job.

Income from jobs (wages and salaries, self-employment, and business owners) and income from government transfers are also imputed from a donor using 'nearest-neighbour imputation'. If a respondent has been imputed hours for the HLFS, the same donor is used to impute their income from jobs. If a respondent has been imputed income from jobs, their hours used in Income are also imputed, regardless of whether they answered the HLFS hours questions or not. This is to ensure we don't end up with outliers for hourly income.

#### Sampling errors

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

We calculate the sampling errors of means (averages) using the jackknife method while the sampling errors of medians are calculated using the bootstrap method. These are 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.

As the size of the sampled group decrease, the relative sampling errors will generally increase. 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.

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.

#### Non-sampling error

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.

#### Classifications

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

- Industry statistics (NZSIOC, based on ANZSIC06): see [Industrial classification](#) for more information
- Occupation statistics (ANZSCO): see [occupation](#) for more information
- Region: see [regional council](#) for more information
- Total response ethnicity: see [Statistical Standard for Ethnicity – 2005](#) for more information

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

#### Household statistics

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 child(ren) of his or her own. Statistics NZ defines a 'dependent child' as a child aged under 18 years and not in full-time employment.

The household income statistics table in this release excludes households where all members are outside the ages of 18 to 64 years. This exclusion primarily affects 'couple only' and 'one person' households. These households typically contain two distinct groups of the population: couples and single people who are likely to be in the labour force, and couples and single people who are primarily retired. Because these groups can have very different income characteristics, the household income table excludes older households where all members are aged 65 years and over (65+).

#### Analysis

#### Rounding

We round figures presented in this release. Figures are rounded to the nearest hundred for people counts, nearest dollar for means and medians, and nearest cent for hourly figures.

#### Suppression of data

Cells that represent fewer than 1,000 people are suppressed and appear with the symbol 'S' in the tables. These estimates are subject to sampling errors that are too great for most practical purposes. We may remove records for quality and confidentiality purposes in some publications.

#### Interpreting the data

##### ##### Compositional effects

Movements in average and median income statistics are influenced by many factors. As well as changes in levels of income, movements are also influenced by the population's composition from survey to survey. These changes occur between males and females, different ethnic groups, different labour force statuses, numbers of full-time and part-time workers, between or within industries, and between or within occupations.

Income averaged across all people from all sources includes those who have zero income for some income sources. Income averaged across those receiving income from a particular source only includes those who received income from that source.

#### ##### Period effects

LMS (Income) reports on 'weekly income' that relates to a week during the June quarter – it is a snapshot in time. Conversion of this weekly income into an annual equivalent is not recommended as an individual's circumstances can change significantly during a year (eg change of job or a period out of work).

#### Dissemination

#### 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.

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## Conceptual Variables

### Labour Market Statistics

- [Employment and unemployment - Employment and unemployment](#)

 Employment and unemployment

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**#####External data influencers**

We collected data in this release in the June 2018 quarter (8 April to 7 July 2018).

Changes in income may be influenced by one-off events. Events that could have influenced the June 2018 quarter data include:

- the rise in the adult minimum wage from \$15.75 to \$16.50 (effective from 1 April 2018)
- the rise in the starting-out and training minimum wage from \$12.60 to \$13.20 (effective from 1 April 2018)
- increases in New Zealand Superannuation rates of 2.7 percent (effective from 1 April 2018)
- increases in benefit rates of 1.4 percent (effective from 1 April 2018)
- the Care and Support Worker (Pay Equity) Settlement Act (2017) (effective from 1 July 2017).

**#####Response Rate**

As the Labour Market Statistics (Income) content is collected as part of the Household Labour Force Survey (HLFS), the same target response rate and target achieved sample rate apply.

The target response rate for the HLFS is 90 percent and target achieved sample rate is 76 percent. The response rate for the June 2018 quarter was 78.9 percent and the achieved sample rate was 70.9 percent.

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

**#####Sampling errors**

The table below summarises the main relative sampling errors for the June 2017 and June 2018 quarters, by income source.

The sampling error and relative sampling error for the gender pay gap in the June 2018 quarter are 1.6 percent and 17.7 percent, respectively.