Introduction

Recent fluctuations in the unemployment rate, as measured by the Household Labour Force Survey (HLFS), have provoked commentator concern about the robustness of this official measure. Debate over job losses, job creation, employment rates and other indicators of the condition of the labour market often creates more confusion than it sheds light on the situation. Additional labour market-related statistics in recent years have broadened and made discussions more sophisticated, but they can also make it difficult to get an overall grasp of key facts and trends. The recent fluctuations in the unemployment rate are depicted in Graph 1.1

![Graph 1](Unemployment rate (HLFS), 2011-2013)

Releases of these quarterly statistics in recent quarters have provoked discussion. The HLFS seasonally adjusted unemployment rate has moved up and down quite sharply in 2012-13, from 6.8% in June 2012 to 7.3% in September and 6.8% in December 2012. In 2013 the rate declined substantially to 6.2% in March, slightly rose to 6.4% in June and returned to 6.2% in September.

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1 All graphs use seasonally adjusted statistics.
The Reserve Bank has expressed concern at its variance with other indicators. A commentator in the Westpac Bulletin, puzzled by the continued weakness of the HLFS in 2012 compared to the Quarterly Employment Survey (QES) and other labour market indicators, described it as ‘confusion reigns’ and suggested that survey ‘volatility’ played a role. The ANZ commentator is cautious: ‘The HLFS has been very volatile in recent years, and we and the Reserve Bank will treat the result with a degree of scepticism, preferring to take note of a wide range of labour market indicators.’

These broader labour market indicators include external ones such as business and consumer surveys and job advertisements. These are in addition to those derived from official statistics such as changes in the employment and labour force participation rates, full- and part-time work, and hours worked, together with fine-grained analysis of changes by region, industry and age.

Various reasons for the volatility of the unemployment rate and its variance with other labour market indicators have been discussed — the impact of the recession, the dynamic nature of the labour market, the survey nature of the HLFS, and differences in coverage of the statistics. It has been suggested that the HLFS is more volatile at a turning point — either going into or out of recession. Statistics New Zealand points out that the labour market is very dynamic (and especially for the unemployed). In response to the recent fall in labour force participation, Statistics New Zealand explored flows in and out of the labour force and between different labour force statuses. It also suggests that the shifts are largely within the sample error of the HLFS survey, which in recent quarters has been between 10,000 and 12,000 for the numbers of unemployed. Coverage can be an issue. There needs to be an awareness that certain industries are not included in the QES, for example, when comparing it with the HLFS. The coverage of different labour market statistics are discussed in detail below.

Employment change also features, not only as context for changes in the unemployment rate, but also because of concern to assess the impact of the recession on employment and to identify whether and at what rate New Zealand is coming out of recession. Statistics New Zealand provides three quarterly sets of statistics (the HLFS, QES and LEED) concerning employment which produce different pictures of employment trends in recent years. Graph 2 depicts the annual percentage change in employment (people employed or filled jobs) quarter by quarter. The way that the three sets of statistics move can be quite different.

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8 Statistics New Zealand in their HLFS comparable series remove self-employment, agriculture and people working without pay in a family business from the HLFS. This brings the HLFS closer to the QES. [http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/HouseholdLabourForceSurvey_HU1PQ3qfInData%2520Quality.aspx#Comparability](http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/HouseholdLabourForceSurvey_HU1PQ3qfInData%2520Quality.aspx#Comparability)
This paper discusses the range of unemployment and employment statistics within the context of the various surveys producing them. Its objective is to provide a better informed understanding of their use.¹⁰

The Household Labour Force Survey (HLFS)

Since the mid 1980s the HLFS has been adopted as the official measure of the numbers of unemployed and the unemployment rate together with other related labour market statistics such as the labour force participation rate and the employment rate. As Statistics New Zealand states, the HLFS ‘was specifically designed to provide more consistent and accurate measurement of employment and unemployment trends in the labour market’ and provides ‘a comprehensive understanding of labour market trends’.¹¹ Being based on International Labour Organisation standards, it also allows international comparisons to be made.

This survey replaced the previous official unemployment figures based on the registration of the unemployed.¹² It provides a much more precise measurement that is not affected by wider circumstances beyond labour market activity such as welfare benefit eligibility and family situation. It is seasonally adjusted to take account of fluctuations. It takes account of labour-force activity only for the person him/herself.

These statistics are based on a survey. All surveys come from a sample extrapolated to the ‘population’ as a whole.¹³ This means that the resulting figures are estimates and result in sampling errors. Also, when the numbers become too small they are no longer meaningful.

¹⁰ The five-yearly Census employment-related statistics are excluded from this discussion.
¹² Since 1998 the employment service function moved from the Department of Labour to Work and Income New Zealand/Ministry of Social Development. Since that time a series of ‘registered jobseeker’ statistics has been made available by MSD to Statistics New Zealand and appears on Infoshare. Statistics New Zealand states that the ‘job-seekers register is no longer used for reporting on unemployment because policy changes over the last 10 years mean that numbers are not comparable over time.’ Statistics New Zealand, A guide to unemployment statistics, May 2010, p. 6. http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/a-guide-to-unemployment-stats.aspx
Statistics New Zealand, for example, will not publish estimates of 1,000 or less for this reason. For example, statistics are provided only for regions with larger populations; others are aggregated together. Detailed breakdowns by ethnic group can be problematic for the same reasons.

The survey is done quarterly and samples about 30,000 people (what Statistics New Zealand describes as ‘the civilian, usually resident, non-institutionalised population aged 15 years and over’[^14]) in about 15,000 households, organised (stratified) so that it is representative of the population. Statistics New Zealand aims at a target response rate of 90% to minimise non-sampling errors. Households are rotated quarterly so that they remain within the survey for two years. People are interviewed every three months.

The unemployed are defined as those in the working-age population who during the survey reference week were without a paid job (worked less than one hour a week), were available for work, and had either actively sought work in the past four weeks or had a new job to start within the next four weeks.

The HLFS statistics are broken down by a range of variables – age, sex, full-time and part-time, marital status, qualifications, ethnicity, region, industry and occupation, and hours worked. Since 2004 youth-related statistics have also been provided to focus on the so-called ‘NEET’ category (Not in Employment, Education or Training) – youth aged 15-24 years old who are disengaged from the labour force and education.

The HLFS also provides a range of related labour market statistics and indicators, together with a wider measure of the ‘jobless’ beyond the official unemployed to take in those not actively seeking or available for work (including ‘discouraged’ job seekers). This was a major reason for its adoption.

A number of indicator rates are calculated from the HLFS survey[^15].

**Employment rate**: the number of employed people expressed as a percentage of the working-age population (that is aged 15 years and over)

**Labour force participation rate**: the total labour force expressed as a percentage of the working-age population (the total labour force = the number employed + the number unemployed)

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

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

Beyond the usual measure of the unemployed (as defined above) the HLFS measures the numbers of ‘jobless’ and the numbers ‘underemployed’. The ‘jobless’ are the officially unemployed who are available for work but not actively seeking work, together with those who are actively seeking but not available for work. (Within the category of those available but not actively seeking work are ‘discouraged’ workers who are not looking for work at all together with others who are seeking work but not ‘actively seeking’ as defined by the survey.) The ‘underemployed’ are those who work part-time (less than 30 hours) and would prefer to work more hours and are available to do so. Inclusion of these groups gives an indication of the broader available labour ‘pool’. These categories are presented in Figure 1.


What about other measures of unemployment?

While the HLFS is the official measure of unemployment other statistics have been used. The unemployment benefit (known as jobseeker support from July 2013) is an administrative statistic which counts those looking for work or in training who are eligible for payment of the benefit. Eligibility of the person relates to their health status and sole parent status and can change as a result of changed welfare policies. It is influenced also by the situation of other household members. Statistics New Zealand considers that the benefit statistic is somewhat useful but should be limited to annual comparisons, because seasonal fluctuations cannot be taken out.

The registered jobseeker statistic, which was the official measure of unemployment until the mid 1980s (when it was known as the registered unemployed), is an administrative statistic affected by seasonal fluctuations and by changed administrative practices. Historically, it counted those who registered with the Department of Labour to find work (from late 1998, Work and Income New Zealand). As well as those out of work and available for work it includes people who work

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up to 29 hours a week who seek to increase their hours of work and does not include specific job availability or search criteria. Statistics New Zealand considers it has ‘very limited uses as a labour market indicator’ and has been supplanted by the HLFS.¹⁷

Graph 3 indicates how these three measures have varied one from another over time. The movements of the three statistics are very different.

What about other Statistics New Zealand surveys and employment?

The Household Labour Force Survey (HLFS) is the most comprehensive labour market statistic and provides a range of quarterly information on the structure of the labour market. Statistics New Zealand produces other statistical data relating to employment.

The Quarterly Employment Survey (QES) is based on a sample of 18,000 businesses in a range of industries – ‘economically significant enterprises’ employing three or more employees on average. Primary industries such as agriculture, aquaculture, fishing, hunting and trapping are excluded, as well as defence and some other industries.¹⁸ It does not include the self-employed or small firms employing 1-2 people.

The basic unit of the QES is jobs rather than people. It estimates the demand for labour by businesses and produces data on the number of filled jobs. Jobs are broken down into full-time and part-time and working proprietor jobs. A measure of full-time equivalent jobs (FTE) is produced by adding the number of full-time and half the part-time jobs. The QES also provides data on earnings and on hours worked. (This is not discussed further here because the focus is on employment, but the earnings data is one of the most important elements of the QES). Statistics are available by sex, industry, sector, region and size of firm.

¹⁸ For discussion of coverage of the QES and LEED, see Statistics New Zealand, Comparing our labour market statistics http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/different-employment-measures.aspx
The quarterly Linked Employer-Employee Dataset (LEED) links Inland Revenue Department payroll data to the Statistics New Zealand’s comprehensive ‘Business Frame’ list of businesses and other undertakings engaged in production of goods and services. It deals with jobs rather than people. It covers the entire income tax employee ‘population’ in paid employment and provides actual numbers rather than estimates as in a survey. All employees receiving wages and salaries from which tax is deducted are covered. However, it has a considerable disadvantage. There is a substantial lag in its release (nearly a year) compared with the other employment statistics.

The LEED provides a range of information on filled jobs and job dynamics. Statistics are provided by age, sex, industry, sector, size of firm and region. These are related to two sets of data. There is data on earnings (mean and median) related to continuing employees, new hires and all employees. Data is also provided on total jobs, ‘worker accessions’ (the number of employees who have joined employers), ‘worker separations’ (the number who have left employers) and worker and job turnover rates. From this data rates of job ‘creation’ and job ‘destruction’ (the difference between worker accessions and worker separations for growing and new firms and for shrinking and closed firms respectively) can be derived. LEED in this way measures labour market dynamics.

The QES and LEED both provide measures of employment expansion or contraction, but in a different way from the HLFS, being based on jobs rather than on the people employed. A person surveyed through the HLFS may hold more than one job and could be counted more than once in the QES or LEED.

Rather than the HLFS’s aggregate measure of people’s employment change the LEED provides a more detailed analysis of ‘job flows’ by industry, sector and region. The QES provides an analysis by type of job.

Graph 4 depicts the number of people employed/filled jobs from the three measures over time. This makes the differences in coverage apparent. The HLFS is most comprehensive (covering all kinds of employment status and all industries). The HLFS is followed by LEED (covering all employees paying income tax) and then the QES which covers employers (apart from small employers with 1-2 employees and low revenue) and employees but not some industries.
While the trends in the three measures are broadly similar over the long term there are differences. Depending on the time period and the measure chosen, contrasting conclusions can be drawn about trends in employment/filled jobs. This is illustrated by the Graph 5. The divergence between the HLFS and the QES in particular in the last few years is evident.
Conclusion - what are the employment statistics most useful for?

The three types of employment statistics have their own strengths and drawbacks as summarised in Table 1 below.

Table 1

<table>
<thead>
<tr>
<th>HLFS</th>
<th>QES</th>
<th>LEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representative sample of people in the labour market and labour market structure</td>
<td>Representative sample of businesses employing three or more employees, based on job unit</td>
<td>Coverage of all employees through income tax employee data, based on job unit</td>
</tr>
<tr>
<td>Official measure of unemployment and measures wider ‘joblessness’; internationally comparable</td>
<td>Job characteristics – full-time, part-time, full-time equivalent, working proprietor</td>
<td>Covers all industries</td>
</tr>
<tr>
<td>Characteristics of people in labour market – e.g. full-time, part-time, occupation, industry, sex, age group, ethnic group</td>
<td>Earnings, hours worked</td>
<td>Job creation and destruction</td>
</tr>
<tr>
<td>Employment trends within labour market as measured by changes to numbers of people in employment within context of range of labour market indicators</td>
<td>Employment trends as measured by type of filled job</td>
<td>Employment trends as measured by filled job flows – industry sector, region</td>
</tr>
<tr>
<td>Recent volatility has led to questions but need to understand context of the survey and recognise the importance of the breadth of the HLFS statistics generated and its international comparability</td>
<td>Excludes primary and some other industries, self-employed, small firms</td>
<td>Substantial lag in release of statistics</td>
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</table>

Although questions have been raised about the HLFS measure of unemployment which has experienced volatility in recent times it is the best measure available and allows us to compare New Zealand with other countries. Statistics New Zealand suggests the survey is robust: the shifts are within the sample error of the survey.\(^9\) The solution which commentators have found is to assess the HLFS in the context of other labour market indicators. These indicators include other official statistics such as the QES and LEED statistics and broader indicators of the labour market.

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Appendix: Statistics New Zealand resources

Comparing our labour market statistics

Explaining labour market statistics, September 2012

A guide to unemployment statistics, May 2010

Introducing new measures of underemployment, April 2013

Introducing the employment rate, October 2011

Introducing the youth not in employment, education, or training indicator, December 2011

Labour force categories used in the Household Labour Force Survey