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Investigation of User Requirements to Improve Wage Measures

report prepared for

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1. OVERVIEW

This report is an input into a wider review of wage measures that are produced by Statistics New Zealand. The broad aims of the review are to:

- Investigate ways to improve the quality and effectiveness of wage related Tier One Statistics to ensure user confidence and to guarantee the continued relevance of these outputs in policy and decision making and as key indicators of economic conditions in New Zealand.
- Assess the relevance and usefulness of wage related administrative data, integrated data sources and data collected from private sector intermediaries to improve the scope and availability of statistics, while reducing respondent load and expense.
- Ensure the suite of wage measures produced remain objective, reliable and accessible at required levels of detail to give people confidence in the integrity of government and public decision making.

The Review has numerous components including a literature search and documentation of national and international practice; contact with international statistical offices to determine best practice; a stocktake and evaluation of the current suite of data sources used to produce wage measures and their capacity to meet user needs via minor and/or major enhancement; and an environmental scan of alternative data sources, their feasibility and capacity to fill the gaps identified. Another component, which is the subject of this report, is to investigate user requirements with respect to wage measures. In particular the following tasks were undertaken:

- An examination of the recommendations in the 1992 Rose report, including an assessment of the continued relevance of Rose's recommendations in the current wage climate and how these could be met.
- Assessment of user requests for enhanced and additional wage measures – including consideration of issues such as privacy, standardisation, theoretical robustness and fitness for use etc.
- Individual meetings, workshops and seminars (as appropriate) with external users and Statistics NZ internal users, to determine user concerns about the current suite of wage measures, examine user understanding and current utilisation of those measures, and identify methods by which understanding and utilisation could be improved.
- Consideration and discussion of the divergent views regarding the potential use of the unadjusted LCI as an indicator of nominal wage movements and conceptual comparisons between the unadjusted LCI and the QES average hourly earnings measure.

The recommendations from the study are as follows:

1. The LCI should be based on the concept of "substantially similar" with regard to job specification so that there is no adjustment to ensure identical positions.
2. The unadjusted LCI series should become the predominant LCI measure of the price of labour. (It should ideally include overtime as an option.)

3. The adjusted LCI series should be marginalised and eventually discontinued, and replaced with a unit labour cost series based on the Statistics NZ's new productivity series, the RBNZ's methodology, or something similar.
4. The LCI will probably need to be based on a proper statistical sample so that measures of actual wage rates, not just changes in wage rates can be produced. Disaggregation with regard to industry and occupation is also desirable.
5. A complementary robust quarterly series on hours worked covering all industries is absolutely essential.
6. The LEED initiative should eventually produce the labour income information that is required for national and regional accounting. If so then the QES could probably be abolished or reformulated to collect data on hours worked. If not then the QES should be redesigned and the sampling organised to address the specific needs of national and regional accounting.
7. Data on wages and hours worked should be collected, compiled and published in a manner that is consistent with the development of a quarterly GDP Income measure.
8. If possible the NZIS should be released more quickly.
9. Consideration should be given to expanding the range of non-wage benefits in the LCI to include bonuses, incentive payments and stock options.
10. The LCI should be published with more measures of spread such as quintiles and standard deviations, with and without zero values.
11. Greater industrial and occupational disaggregation needs to be available from the LCI, QES, and the LEED project. The latter should also allow users to obtain more regional disaggregation.
12. Data on job tenure is scarce. It is worth investigating whether a question or two could be incorporated into the HLFS, perhaps as part of the annual income supplement.
13. Demand for monthly data is almost non-existent, but where it does exist it is because of a desire to have up to date data, rather than a desire for monthly data per se. Statistics NZ should consider whether flash estimates for the LCI and QES are feasible and worth doing.
14. Confidentiality protocols for non-government users are much more restrictive than necessary. We strongly urge Statistics NZ to assess what is necessary to preserve confidentiality rather than falling back on what is sufficient. Swapping of fields in unit record information must be stopped.
15. We encourage the on-going development of the LEED project, as the LCI, QES and NZIS all suffer from inaccurate responses.

Naturally these recommendations are subject to the outcome of the rest of Review, notably with respect to what is possible as regards existing and potential data sources, and at what cost. We trust that the Review will lead to a number of prioritised recommendations which will be used to compile a programme for future work and to secure the short and long term resources required to ensure that user needs are met by Official Statistics.

2. STOCKTAKE

The starting point for this review of wage measures is the 1992 review of labour market statistics by Dennis Rose.[1] This report, which has become known as the Rose Report, was intended as an input into the establishment of a specialised labour market statistics unit at Statistics New Zealand. It is extremely wide-ranging, reaching well beyond the measurement of wages. However, as it summarised the state of labour statistics up to that point in time, and made a number of recommendations for the future development of labour statistics, it represents a natural base for a review of wage measures.

The main uses of labour statistics identified by Rose were:

1. Negotiation – content and outcomes of employment contracts (wages, representation, coverage, hours of work, non-wage benefits and so on).
2. Research on the distribution of earnings.
3. Measurement of the quantum of labour inputs (FTE, consistent with national accounts, quality controlled for productivity analysis).

Wage data is central in all of the above. Indeed for our purposes we might re-interpret Rose's list and say that the main uses of wage data are in employment contract negotiation, in the study of income distribution, and in the calculation of quality adjusted labour inputs. With regard to the last use, one cannot obtain information on wage rates without knowing the period over which the wages are measured, so data on the quantum of labour inputs is absolutely essential.

Rose saw wages data and hours data as being classified in the first instance by industry and occupation, with other dimensions such as age and sex being of secondary importance. Each cell in an industry by occupation matrix would be quality controlled, such as occurs in the LCI. Unfortunately, however, the LCI is not designed to yield reliable dollar earnings information for each such cell. Nevertheless, Rose suggested that there is enough data in the sample to release at least some of the disaggregated information – weekly or hourly earnings by a single dimension (industry or occupation) should be viable, along with inter-quartile ranges or other measures of spread to indicate both uncertainty and actual variation.

Rose made 17 recommendations, of which the following four relate to wage measurement:

1. *[1] Investigate the introduction of an individually focused survey of establishments, or enhancement of the Labour Cost Index sample, to provide information on occupational earnings, hours worked and contractual conditions.*

   The individually focused survey of establishments was suggested by Rose as being a possible adjunct to the QES. Such a survey has not been introduced. The LCI provides data on earnings by occupation, but without an hours worked dimension – having only ordinary time which is invariant for each job, and overtime hours. And the data relates only to changes in earnings not to levels of earnings. The LEED initiative will provide more detailed information, but not for hours worked. However, an eventual re-design of the QES could

[1] Rose (1992)

see it being used to collect data on individual (as opposed to firm level) hours worked. Without data on hours worked it is not possible to determine disaggregated earnings levels (technically, earnings rates).

2. *[7] Pilot test both annual and pay period income questions for possible inclusion within the Household Labour Force Survey.*

   The HLFS now has a comprehensive annual income supplement.

3. *[8] Further develop the "data laboratory" concept, under which outside users can apply standard and experimental analytic techniques to data bases of the Department of Statistics, and review the procedures used by the Department's Australian and United States counterparts to protect the confidentiality of unit record data released on tape, to see whether they could be adapted to meet New Zealand circumstances.*

   The data laboratory is operational and protocols for access to confidentialised unit record files are currently being developed. In addition, the web-based Table Builder facility permits a considerable degree of disaggregation with regard to census data.

4. *[12] Cooperate with Quest Rapuara in developing indicators on current occupational labour market conditions and trends for inclusion in career leaflets. This information should desirably include up-to-date information on trends in occupational incomes.*

   Career Services Rapuara produces a substantial amount of information on employment and career prospects, on its *kiwicareers* website but there is still almost no information on salaries and wages.

Another five recommendations are indirectly related to wage measurement:

5. *[2] Develop summary measures of labour factor inputs that are compatible with the New Zealand System of National Accounts, including industry based estimates of employment measured according to the ILO standard plus a measure based on full-time equivalents and, at some time in the future, a more comprehensive quality controlled measure of labour inputs.*

   Greater integration of all economic statistics within the SNA framework is an ongoing objective of SNZ, but FTE measures are becoming scarcer due to less data being collected on hours worked. No quality adjusted labour input series has been compiled.

6. *[3] Where measures of full-time equivalents are used, make use of within survey measures to establish appropriate ratios for combining full and part-time workers.*

   As noted above, progress on FTE measures has been negative lately.

7. *[6] Investigate the scope for further development of measures based on the Household Labour Force Survey, including the calculation of transition probabilities for a wider range of variables and the possible introduction of retrospective questions on matters such as recent training activity.*

   The rotating panel structure of the HLFS enables a reasonable amount of transition information to be derived. However the longitudinal SoFIE survey will provide more such information, including on earnings, in due course.[2]

8. *[10] Review the range of labour market statistics with a view to increasing the number of parallel tables relating to particular groups in society.*

   This requires larger samples; the LEED project should help considerably.

9. *[15] Establish the statistical needs of particular groups through consultation with the groups in question, and establish whether it is possible to gather that information in a cost effective way.*

   SNZ has a programme of on-going consultation to establish user needs. Examples include the Advisory Committee on Economic Statistics, a Maori Statistics advisory group, the Advisory Committee on Official Statistics, the 5-yearly conferences of users and *ad hoc* processes such as this review of wage measures. In addition the LEED project should enhance the cost-effectiveness of data collection and see a substantial lowering of respondent burden.

In summary, with regard to earnings measures there have been two significant initiatives since the Rose report; the annual income supplement to the HLFS and the development of the LEED concept. The former provides a rich dataset on earnings while the latter, with its link to EMS[3] data, has the potential to provide very detailed information, albeit for a much smaller range of variables than the HLFS. Opposing these positive developments, however, is the negative progress with regard to data on hours worked – and by implication on hourly earnings.

The LCI and the EMS do not track hours worked and do not cover working proprietors. The QES does have hourly and weekly earnings (in levels) but only for all employees in a firm combined. It excludes a number of industries, businesses that are not registered for GST, and does not count proprietors' hours and earnings.

With regard to the main uses identified by Rose: wage negotiation, the study of income distribution, and the calculation of quality adjusted labour inputs, the HLFS income supplement has been of benefit to all three, particularly to studying income distribution. The LEED development should also be useful in all three areas.

[2] Rose does not specifically mention transition data on earnings, but this is probably because his discussion occurs in the context of the HLFS which did not at that time include the income supplement, rather than because he explicitly rejected measuring changes in earnings.

[3] Employer Monthly Schedules filed to IRD.

Since the Rose Report two other papers that encompass wage measures have been produced. One was by Ryan (1999) for the Department of Labour. Ryan notes that the Department requires labour market information for four reasons:

1. Monitoring compliance with and the effects of regulation.
2. Reporting to international bodies.
3. Describing and monitoring labour market outcomes and behaviour.
4. Understanding behaviour in order to design effective policy interventions.

Additional information on wages and earnings in the following areas was identified as being of high priority amongst potential users:

1. The distribution of wages within the firm.
2. The extent to which actual wages paid are those set out in the employment contract.
3. The extent and nature of irregular payments such as bonuses, and the influence that this has on annual earnings.
4. The extent and nature of non-financial aspects of remuneration packages.

The expanded annual LCI survey addresses non-financial aspects of remuneration, albeit only annually, while the HLFS income supplement (NZ Income Survey) and HES ask about irregular income. The second item above is not addressed anywhere as far as we know, while further data on wage distribution should be available soon from the LEED project. Limited distributional measures are available from the LCI (for changes) and the NZIS.

The other paper since the Rose report is an unofficial paper prepared by the Department of Labour (2001) for the Advisory Committee on Economic Statistics. While not as wide-ranging as the Rose Report, this paper still covers a fairly broad array of issues such as immigration, health and safety, and the nature of employment contracts. There is little that deals directly with wages. However, two needs around wage data are mentioned:

1. Disaggregated earnings (and employment) measures by occupation and industry between census years.

   It was noted that SNZ's then proposed Core Statistics Programme did not address this need. However, the LEED project now has the potential to deliver this type of information. The main use of such information was expected to be for enhanced decision making by job seekers, employers, education providers etc, to improve labour market adjustment.

2. More information on the distribution of earnings and income distribution.

   Again this was not addressed by the Core Statistics Programme but the LEED project should be of considerable assistance in this regard. It was noted that reducing inequality (or inequity) was a government goal.

Since the Rose Report earnings data has generally improved, particularly with the introduction of the HLFS income supplement and the LEED project. To assess whether the recommendations made by Rose and others are still relevant, we consulted a group of key users: unions, employers, corporates, and researchers from both the private and government sector. This is discussed in the next section.

3. USER CONSULTATIONS

3.1. Overview

A central component of this project was to obtain the views of users of the various wage measures produced by Statistics NZ. In most cases user views were obtained by face to face meetings with a discussion guide being sent to participants in advance. A copy of this is given in Appendix A. The discussion guide was not intended as a definitive list of points to be covered. Some points were irrelevant to some users, while other users raised additional points. The table that asks users for their ratings of robustness, validity etc for the various wage measures turned out to be too ambitious.

In all we consulted with 16 organisations, comprising over 20 individuals. We had a number of refusals, the main reasons for which included irrelevance (such as in cases where companies set salaries on an international basis), lack of interest, insufficient time, and deferral to umbrella organisations such Business New Zealand.

To preserve confidentiality and to provide a more integrated and structured discussion, we do not generally report on the individual responses to each of the points raised during the consultations.

Responses to questions 1-2 on users and series are summarised immediately below. This is followed by four sections corresponding to the four main sources of wage measures; the LCI, the QES, the HLFS income supplement (NZIS) and the Census, although by far the bulk of the discussion is on the LCI. This is because the issue that turned out to be of greatest interest to users is that of quality adjustment (Q10) in the LCI, its links to validity and robustness (Q6), and the issue of indices versus levels (Q7).

The other issues are either brought into the discussions on the various series or are summarised separately in section 3.6.

The consultations quickly revealed that there are three main uses of the data:

1. Wage setting and negotiation,
2. Forecasting and research, including policy submission and policy analysis,
3. Compilation of national and regional accounts.

The first use is almost exclusively the domain of the various umbrella organisations which represent employers and employees, as well as of associated negotiators and corporate human resource managers. Some of these parties also use the data for research, but research and forecasting is mostly the domain of government departments,[4] academic and private researchers. Private corporates also undertake some research and monitoring, predominantly for planning and budgeting. For this purpose information on rates of change in wages is more valuable than information on wage levels. Interest in national and regional accounts comes mainly from Statistics NZ and from the various regional and local economic development organisations, along with private sector consultants working on their behalf.

[4] In particular the Department of Labour, Treasury, Ministry of Social Development and the Reserve Bank, the Bank's primary use of the data being for forecasting inflation.

While most users of the data use most of the series, the pattern of use has some distinctive features as shown in Table 1.

Table 1: Main uses of Wage Data

	Wage setting & negotiation	Research & fore-casting	National & regional accounts[5]
LCI adjusted	low	medium	low
LCI unadjusted	high	high	medium
LCI non-wage	low	low	
QES	high	medium	high
HLFS/NZIS	low	high	low
HES		medium	medium
Census		low	

The most surprising aspect of this use pattern is the low use made of the adjusted LCI series. The reason for this is discussed in some detail below.

3.2. Labour Cost Index

3.2.1. Job specification

Both of the main organisations involved in wage negotiation – Business New Zealand and the Council of Trade Unions – expressed concern about the confusion that exists amongst workers and the general public regarding the two measures of the LCI. While the quality adjustment with respect to workers' qualifications and experience is difficult enough for most people, understanding about the idea of a fixed quantity or quality of the work itself (in contrast to that of the worker) is even more confused.

With respect to the specification of the job – the tasks involved – most job specifications change by small amounts on a continual basis. Adjusting for these changes is both of dubious theoretical merit and prone to error in practice. Parties to wage negotiations recognise that these changes are to be expected in a dynamic workplace and that qualitative changes of this sort do not on their own constitute a reason for treating an accompanying wage rise as compensation for a quality change – and hence discounted in the adjusted LCI. Wages are negotiated through strategies, tactics and battles of wills, with supporting data drawn from many sources. These are what count in the end, not the intricacies of official definitions or how the data is gathered and compiled. Most wage awards are seen as compensation for increases in the cost of living, with perhaps an increment for skill shortages as and when appropriate.

The idea of "substantially similar" is suggested as a better concept to use for deciding whether a change in tasks constitutes a change in quality. While the term is clearly subjective, meaning different things to different people, the addition of some guidelines should ensure convergence to a sensible interpretation in large samples.

Indeed one might argue that the subjective nature of the term is precisely what is required. Each employer is probably the best judge of whether a change in job specification actually corresponds to a change in the marginal product of labour associated with that job.

[5] Statistics NZ's National Accounts section also uses the Annual Enterprise Survey. No other users mentioned this in connection with remuneration of labour.

An interesting finding from the consultations is that many of the major corporates do not use any of the SNZ wage measures for setting labour compensation, preferring instead the services offered by companies that run private salary surveys.[6] There are numerous reasons for this, but an important one is that job specifications are based on position (title, department, required qualifications, etc) or job size (responsibility, duties, budget etc). They do not rely on detailed and spurious task specification. This lends support to the desirability of the concept of "substantially similar."

Some of these services offer access to an interactive system where users input various characteristics of the job size and the system then determines the appropriate salary range, with additive and/or multiplicative factors for additional responsibilities or job features.

We infer, however, that the main users of this type of facility are the larger corporates who are interested more in annual remuneration for middle management type positions than in hourly wage rates. Annual salaries often have only a loose relationship to the number of hours worked, implying that the whole concept of adjusting for hours worked on a quarterly basis for such positions is nonsense.

While emergent permanent changes in the underlying relationship between annual salaries and hours worked need to be measured, random (and seasonal) movements about a stable mean are not particularly informative for understanding changes in firms' labour costs. This type of variability in hours and tasks lends further support to the idea of using the concept of "substantially similar" as the definition of whether a job has undergone a quantity or quality change.

3.2.2. Quality Adjustment

The issue of quality adjusted labour inputs comes up on numerous occasions in Rose's report. It was also the issue that received the most discussion in the consultation with users.

A concern common to both researchers and wage negotiators, is that in the LCI a new person entering an existing position is generally treated as a quality change and thus any associated wage change does not register in the adjusted LCI. In contrast, if an incumbent has a pay change it is picked up by the adjusted LCI. Obtaining a wage rise as they move between companies (or even within companies) is one of the main mechanisms by which workers increase their pay. Excluding these types of movements thus leads to a downward bias in the adjusted LCI as a measure of changes in labour costs.[7]

Adjusted LCI

The standard published "adjusted" LCI series relate to a fixed quantum of work with an adjustment for changes in quality. Recently Statistics NZ has also published the "unadjusted" LCI series, back-dated to 1996. This is a sample of matching data by industry, occupation and sector that does not adjust for quality (characteristics such as qualifications and experience), but does adjust for quantity – that is, changes in hours worked.

[6] For example Mercer Human Resource Consulting (Mercer HRC), the Hay Group and McBride HR.

[7] However, Statistics NZ notes that because the LCI often tracks individuals as they are promoted, rather than positions, there is likely to be some overstatement of wage rises.

The adjusted LCI is commonly interpreted as measuring unit labour costs, although we have also heard the view that it is not in fact, nor is it intended to be a such a measure. It is argued that because the only adjustment is for changes in the quantity and quality of labour input, but not for changes in output or changes in the capital-labour ratio, the LCI captures only one aspect of a productivity adjustment. Our assessment is that while this is technically correct, what then is the meaning of the adjusted LCI?

The unit labour cost (ULC) is the cost of labour (C) required to produce one unit of output (X). Its unit of measurement is therefore \$/\$ or \$/q (where q is some unit of quantity), where in each case the numerator is the cost of labour. Dividing C by a unit of labour such as an hour (H) or a year, yields the wage rate (W).

That is: $ULC = C/X$

And: $W = C/H$

So: $ULC = W/(X/H)$

In the adjusted LCI, the adjustment to W for a change in the quality of labour (via experience or qualifications) is effectively a partial adjustment for a change in labour productivity, that is X/H This adjustment occurs by looking at the reasons for a wage increase and discounting it if the reason for the increase is given as a change in qualifications, experience etc; the implicit assumption being that this corresponds to a change in labour productivity.

The idea behind this is based on the concept of the marginal product of labour. Where compensation to labour rises because of a concomitant rise in its marginal product, there is no actual increase in unit labour costs to the firm. In practice though marginal product is not easy to measure. Hence proxies for factors that may raise a worker's marginal product are used (in the LCI). These include the qualifications and experience of the worker, and the nature of the tasks involved.

Qualifications

The unadjusted series relates to payment for a fixed amount of work. It will show an increase if, for instance, a worker's pay increases because a higher qualification has been obtained, irrespective of whether the work involved is being performed faster or better. This raises the fundamental question: what does a qualification adjustment actually do? If a pay increase for a worker who gains a qualification is not counted as an increase in labour costs (in the adjusted LCI), then does a situation where a worker obtains a higher qualification, but does not receive a pay increase count as a reduction in labour costs? The latter scenario does not appear to be picked up in the LCI questionnaires. This makes the official (adjusted) LCI a biased measure.

If an increase in the qualifications of the worker has no effect on marginal product, the net bias in the (adjusted) LCI is downwards. That is, labour costs actually rise rather than stay the same as measured in situations where a pay increase is not counted as an increase in labour costs in the context of higher qualifications being gained. Classifying cases of no pay increase for a rise in qualifications as a zero change in labour costs is then correct (albeit by omission rather than deliberate action).

In contrast, if an increase in the quality of the worker does affect their marginal product the LCI net bias is upwards. That is, actual labour costs fall rather than stay the same – as measured by omission – in situations where no pay increase is given

for higher qualifications. Treating cases of a pay increase for a gain in qualifications as no rise in labour costs is then correct.

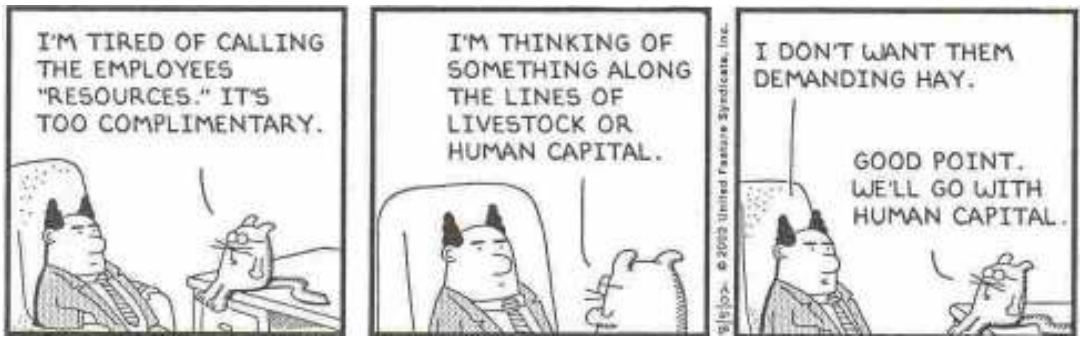
Who knows whether the upward and downward biases offset each other – in aggregate, let alone for any given occupation or industry. Following the line of argument in Rose (pp 20-21), however, we might reasonably assume that in general workers will not stay long in positions for which they are over-qualified. In a broadly competitive labour market higher qualifications will be recognised in higher pay, albeit with lags and institutional impediments, and possibly in the context of a different job.

On that basis the adjustments undertaken for the published LCI series are in essence likely to be correct most of the time, but this implies that the net bias of the adjusted LCI is upwards because of its failure to pick up instances where increases in qualifications are not rewarded with wage rises.

For a contrary view though, the private salary surveys referred to above (such as that by Mercer HRC) do not discount a wage increase if it is attached to a change in qualifications. In other words there is no assumption that greater qualifications lead to greater labour productivity, nor is there any automatic link between remuneration and qualifications gained. Many corporates with whom we consulted expressed such a view. Of course certain jobs require certain qualifications, such as an ACA for a chief accountant position, the value of which is recognised in the remuneration for those jobs, but that is a different issue. The private surveys work on the assumption (which seems to be correct) that users want to know what remuneration to set for a given job, not for an individual with given characteristics. This means that the adjusted LCI will track below the private measures of wage movements.

It may seem as though this difference in approach is one of the theoretical purist versus the real world practitioner, but in fact the latter is also firmly grounded in theory; this being that the characteristics of the job are what determine productivity, not the characteristics of the worker. This view implies that earnings are determined by the demand for labour with little influence from the supply side, in direct contrast to the view that wages are primarily determined on the supply side by the human capital of the worker. If employers also see qualifications partly as a signal of unobservable characteristics that correlate with potential productivity, workers will tend to over-invest in qualifications. Hence a general state of over-qualification may prevail,[8] implying that discounting wage rises because a worker's qualifications have risen is not correct. As discussed above, the adjusted LCI is then biased downwards.

Overall then, the theoretical basis for adjusting the LCI for qualifications is not particularly sound.



[8] See for example Linsley (2005) for some research on over-qualification in Australia.

Experience

Many people in the public sector are entitled to annual increments that have nothing to do with changing jobs, price inflation or labour market pressures. There are perhaps two main reasons why such regular increments are awarded. Either they represent a reward for loyalty (and might save the employer the cost of hiring new staff) or they represent a reward for greater experience as a proxy for higher productivity. As above, the latter does not constitute a rise in labour costs in the adjusted LCI, but the validity of this is just as problematic as with qualifications. If productivity is determined by the characteristics of the job, rather than the characteristics of the worker, greater experience on the part of the worker is irrelevant.

Again then the quality adjusted LCI could be upwardly biased or downwardly biased.

Unadjusted LCI

The unadjusted LCI could be interpreted as being at the other extreme. Treating increases in wages in response to gains in qualifications and experience as a rise in labour costs carries the implicit assumption that marginal product does not rise with the qualifications and experience of the worker.[9] In this case the LCI (in unadjusted form) is an unbiased measure of changes in unit labour costs. To the extent that the assumption is false, the unadjusted LCI is upwardly biased.

An alternative interpretation of the unadjusted LCI is that it is not intended to be a measure of unit labour costs at all – it is just a measure of changes in wage rates for a given collection of jobs, (but still adjusted for changes in the quantum of input). Indeed, many of those involved in wage negotiation are more interested in a measure of labour market pressure than in a unit cost of labour.

The table below summarises the direction of bias in the adjusted and unadjusted LCI under alternative assumptions about whether qualifications and experience of the worker raise the marginal product of labour and thus unit labour costs, net of other potential contributors to labour productivity such as changes in the capital-labour ratio.

Table 2
Bias in the LCI as a Measure of Unit Labour Cost
(net of changes in K/L etc)

	Qualifications and experience raise marginal product	Qualifications and experience do not raise marginal product
Unadjusted LCI	upward bias	unbiased
Adjusted LCI	smaller upward bias	downward bias

The table is not particularly encouraging as the only unbiased situation is for the unadjusted LCI where qualifications and experience do not raise marginal product; an extreme view of how the labour market works. As discussed below, however, the series may be more useful than it first appears.

[9] An annual increment along a set salary scale would be counted as a wage rise even if it is ostensibly for higher productivity. We understand, however, that for some state sector occupations Statistics NZ does not actually differentiate between the adjusted LCI and the unadjusted LCI. This is an inconsistency which should be addressed.

3.2.3. Unit Labour Costs - an alternative to the adjusted LCI

As derived above, unit labour costs may be expressed as:

$$ULC = W/(X/H)$$

The ratio X/H is an adjustment to wages for labour productivity, whether determined by the worker or the job. In the adjusted LCI, changes in X/H are proxied by changes in qualifications and experience, something which is not popular with many users, nor (as demonstrated above) necessarily correct theoretically. An alternative way of obtaining a ULC would be to take the unadjusted LCI and adjust it directly for a change in labour productivity.[10] This would avoid the judgement call about whether a change in qualifications and experience actually leads to change in productivity. The disadvantage though is that good data on hours worked is essential.

Theoretically, the data on hours worked from the HLFS could be used, but as the aim is to measure unit labour costs, data on hours worked should be confined to paid hours, as measured by the QES. However, the QES is deficient in terms of industries covered and in amenability to disaggregation by industry and occupation.

The RBNZ (2005b) estimates that the QES count of the number of people employed is about 80% of the count from the HLFS, compared to a proportion of 68% for hours worked. The difference between these two ratios is presumed to be largely attributable to unpaid workers, most of whom are self-employed, working relatively long hours. (Income earned by the self-employed is frequently counted as capital income rather than labour income). The RBNZ estimates that excluding unpaid workers reduces these ratios to 91% and 87% respectively.

Fortunately the QES and HLFS paid hours series show very similar movements over time, albeit that there is a difference in levels because of the gap in QES coverage. For deriving a productivity series, differences in levels are of less concern than differences in changes. This, coupled with hesitancy about the reliability of both the HLFS and QES data led the RBNZ to use a simple average of the HLFS series on hours worked (excluding unpaid hours) and the QES series on paid hours worked.

For output the RBNZ used GDP, changes in which may not always correspond to changes in gross output – although whether the implicit notion of labour productivity that underlies the adjusted LCI relates to gross output or net output is a moot point.

The results showed smaller changes in labour productivity than those implied by the difference between the adjusted and unadjusted LCI. The Bank's conclusion is that the adjusted LCI is over-adjusted, imparting it with a downward bias as a measure of unit labour costs. That is, labour productivity is not consistently related to worker qualifications.

However, two points are worth noting:

1. The unadjusted LCI has no allowance for overtime hours, but the adjusted LCI does. If the ratio of ordinary time hours to overtime hours is stable, then this asymmetry does not matter, but a ratio that changes over the business cycle is more plausible.
2. The Bank's productivity series includes the contribution to GDP of the hours worked by the self-employed, but does not include the quantum of those hours. Again this asymmetric treatment does not matter if the hours of the

[10] One would expect the unadjusted LCI to be a step along the way to calculating the adjusted LCI. In fact the unadjusted LCI is calculated after the adjusted LCI.

self-employed change commensurately with the hours of employees, but this may not be the case.

The RBNZ, along with other researchers whom we consulted, stated that they would rather estimate their own productivity adjustment using the unadjusted LCI series (properly calculated and including overtime) than rely on the adjusted series as being a reliable indicator of unit labour costs.[11]

3.2.4. Conclusion

Researchers who are interested in assessing inflationary pressures in the economy and those undertaking productivity research would like to see a more robust measure of unit labour costs than the adjusted LCI. The foundation of such a series could be the unadjusted LCI, preferably with overtime included even though overtime costs constitute only 2-3% of total labour costs.

Companies and employee representatives who are primarily interested in using wage measures for wage setting negotiation focus on the "going rate" of wage increase. To them minor differences in job specification over time are irrelevant and a distraction. They would like to see a measure of wage rate change which has the same status that the CPI does with respect to inflation. This requires the Department to produce a series in which users have confidence about it being correct and fit for purpose.

While the various umbrella organisations appreciate the principle behind adjustments for qualifications, experience and performance, they share the suspicion that professional researchers have about the robustness of the LCI adjustment. Not surprisingly then, the unadjusted LCI is their preferred series.

Hence three major groups of users have expressed a strong preference for the unadjusted LCI over the adjusted LCI.

3.2.5. Recommendations

1. *The LCI should be based on the concept of "substantially similar" with regard to job specification so that there is no adjustment to ensure identical positions.*
2. *The unadjusted LCI series should become the predominant LCI measure of the price of labour. (It should ideally include overtime as an option.)*
3. *The adjusted LCI series should be marginalised and eventually discontinued, and replaced with a unit labour cost series based on the Statistics NZ's new productivity series, the RBNZ's methodology, or something similar.*
4. *The LCI will probably need to be based on a proper statistical sample so that measures of actual wage rates, not just changes in wage rates can be produced.*[12] *Disaggregation with regard to industry and occupation is also desirable.*
5. *A complementary robust quarterly series on hours worked covering all industries is absolutely essential.*

[11] The new productivity series is now another option. See Statistics New Zealand (2006), *Productivity Statistics: 1988:2005*.

[12] The LCI is currently rebased every five years on census data. This should continue, although industry rebasing (but not occupational rebasing) may be possible from LEED data.

Other than by employers' organisations and some researchers, little use is made of the non-wage series in the LCI. Most parties consulted are happy with the annual nature of this series. Thus we see no strong reason to change either the coverage or frequency of the component series.

3.3. Quarterly Employment Survey

After the LCI in its various forms, the QES is the next most popular source of wage data for use in wage setting and negotiation, and in national accounting, notably for calculating Compensation of Employees as a component of GDP (income). It is also used by regional economic development agencies to estimate regional GDP and other measures of local economic activity. There is a small amount of use by researchers.

There are three main reasons for the more limited use of the QES.

1. It does not produce a wage rate index. Wage rates are calculated as earnings divided by hours worked, making the result sensitive to changes in the composition of hours worked with respect to occupation, industry or anything else that can cause a change in mean earnings without any individual wage rate actually changing.
2. As a time series the derived wage rate data is volatile, particularly since 1999 when smaller firms were included. However, In RBNZ (2005a) the Bank concludes that the volatility is not attributable to small firms being included. The Bank also looked at changes in the pattern of overtime hours, changes in the male-female mix of employment, changes in the FT-PT mix, changes in age, and changes in industry composition. It finds that none of these explain the observed volatility and speculates that reporting by survey respondents might not be consistent between earnings and hours worked, and/or that the nature of collective contracts leads to discrete jumps in earnings. Truncated means or medians may show more stability.
3. Another possibility is that the volatility is caused by variability in the hours worked by those on annual salaries rather than hourly rates – as discussed above.
4. Its unit of account makes it unsuitable for most labour market research.

Because the structure of the QES has firms as the sampling base, many users prefer the HLFS for data on hours worked. However, a better match between data sources is desired. While users are enthusiastic about the LEED project providing data on compensation of employees, this does not remove the need for a commensurate hours worked series; one that comes from the employer side rather than the household side. A revised version of the QES linked to the EMS (which form the basis of the LEED) is probably the best option. Note though that the industry coverage of the QES would need to be expanded to include at least Agriculture.

Rose suggested the idea of targeting employees through employers, but we encountered resistance to this from employers. They are reluctant to complete the surveys themselves, or to allow time for their completion by employees while at work, or do not wish to be responsible for collecting them if employees take them home.

Overall, most users appreciate that the inherent nature of the QES means that it can never be a wage index. Its most important use is likely to always be as an input into national and sub-national accounts, if the LEED does not make it redundant.

Recommendation

1. *The LEED initiative should eventually produce the labour income information that is required for national and regional accounting. If so then the QES could probably be abolished or reformulated to collect data on hours worked. If not then the QES should be redesigned and the sampling organised to address the specific needs of national and regional accounting.*

3.4. HLFS Income Supplement (NZ Income Survey)

As noted in section 2 an income supplement to the HLFS was one of the recommendations in the Rose Report. The main use envisaged for the data was in the analysis and research of income distribution and, to a lesser extent, in wage negotiation and in the measurement of labour input for national accounting. Our consultations lead us to infer that this envisaged profile of use was largely correct.

Wage data from the NZIS is used almost exclusively for research purposes – in both the private and government sectors. Users are generally very satisfied with it.

The main concerns expressed by users are delays in release of the data and volatility, although for academic researchers delayed release is not normally problematic. With respect to volatility, internal research by the Department of Labour shows that volatility in the earnings data is only really present in sub-groups where the size of the sample is small. There is some concern about the robustness of the hours worked data, but this is part of the core HLFS, not part of the income supplement.

Overall, users appreciate the ability to obtain reasonable levels of disaggregation in various dimensions, as well as the accessibility that some of them have to the data at unit record level. While a larger sample or a quarterly sample will always be desired, users acknowledge that the data is both valid and reasonably robust.

There is a plea that the survey's questions be kept consistent over time, as the usefulness of other data sources such as the census is compromised by irregular changes to questions.

Similarly it is important that use of proxy responses (which are a good time and cost saving technique) continues to be noted as such.

At this stage we have no recommendations in relation to wage measurement in the NZIS.

3.5. Census

Use of the census is almost the exclusive domain of academic and policy researchers, although some use was also reported by those whose primary interest in wage data is for wage negotiation. The Table Builder facility is widely appreciated. The two main problems that users have with census wage data are well known:

1. Income from wages is not explicitly identified; only the sources of income are listed.
2. Total income is reported in broad bands.

It is beyond the ambit of this exercise to recommend changes to how questions on income should be asked in the census. Given the over-arching nature of the census

and the burden it places on respondents who are not used to such surveys, we suspect that the census will never be a good vehicle for collecting detailed financial information. Those who require detailed wage data will continue to depend on targeted surveys and innovations such as the LEED initiative that utilise administrative data.

3.6. General Issues

Other issues raised in the consultations that have not yet been covered are discussed below.

3.6.1. Unmet Needs

Quarterly GDP Income

While it is on the periphery of this project, there is a strong desire for a proper quarterly measure of GDP Income. This cannot occur unless the over-arching and paramount issues of hours worked and the price of labour are addressed.

Frequency

There is almost no desire for wage data on a monthly basis. The small amount of interest in this area comes from forecasters who would be satisfied with quicker "flash" quarterly estimates.

From a different perspective, the analysis of wage-benefit migration requires data on wages at fine time intervals such as weeks. This is probably best constructed from data on hours worked, providing yet another reason for urging the development of new job-based series on hours worked. Given also that this need relates to a subset of the population (albeit a fairly large one), a link to the LEED series is probably essential.

Bonuses

One area where data is poor is that of bonuses and commissions. They are excluded in the non-wage LCI, but are paid by an estimated 65% of businesses and received by about 20% of employees. Ryan (1999) also listed the paucity of data in this area. Another excluded area is stock options.

Spread

Given the long tails in wage agreements, not enough information is provided about spread – interquartile range, standard deviation and so on. More spread data for QES hourly earnings would be useful, as well as for the LCI where in any given period there are many zero changes. Zero values are interpreted as cases where wages did not change simply because they were not due to be considered in that quarter, rather than as implying an explicit agreement on a zero increase.

One of the attractions of the private salary surveys is that most provide ranges and quartiles or deciles. This serves a dual purpose of providing information about error margins as well as about true underlying spread.

Disaggregation

The Rose report noted the importance of wage data being available at a reasonable level of disaggregation with respect to industry and occupation. These two dimensions were also the dominant ones mentioned during the consultation round. Disaggregation by industry and occupation is insufficiently detailed for many users –

across the spectrum of uses. It is a reason why many in the corporate sector prefer alternative sources for wage and salary data.

Singled out for lack of detail were the unadjusted LCI and QES. In addition, data with an industry dimension from the HLFS was noted by some users as being too volatile.[13]

More regional disaggregation was mentioned by numerous users, especially those involved in compiling indicators of regional economic activity. Such information would also be useful to wage negotiators and corporates who are interested in regional differences in the cost of living. It is understood that existing surveys are not large enough to permit much progress in this regard, but it is hoped that the LEED project will deliver enhanced regional information.

Qualifications and experience

There was some interest in seeing data on qualifications and experience attached to the LCI and/or the QES. While for most research purposes the HLFS/NZIS enables the link between qualifications and earnings to be studied, there is little information on job tenure, and of course the income data is only annual. This means any emerging trends between earnings and qualifications will not be quickly discovered. Perhaps it would be possible to extract from the LCI those cases where pay increases are awarded in response to a gain in qualifications or increase in tenure. Another suggestion was that the LEEDS project should be able to deliver information on tenure.

3.6.2. Coverage and Measurement

Self-Employed

Although there is certainly interest in the income of working proprietors and the self-employed, especially by those compiling national and regional accounts, there was wide support amongst those who use the data for wage setting to keep working proprietors and the self-employed out of the LCI and QES. Uncertainty over paid versus unpaid hours and the difficulty in deciding between labour income and capital income lie behind this stance. For research purposes the HLFS/NZIS generally provides adequate data, although disaggregation is limited.

A possibility is that changes in charge-out rates for occupations characterised by a high prevalence of self-employment (such as those in the building trades) could be published in place of wage movements, on the assumption that these would be a reasonable proxy for movements in self-employed labour income. Presumably the PPI series could be of use in this regard.

Gross versus net

On the issue of whether gross wages or net wages should be measured, there is a unanimous preference amongst wage negotiators for the former. Gross wages are seen as representing the cost of labour.

The concept of a wage-tax trade-off under tripartite negotiations on wage increases between employees, employers and government seems to be all but forgotten. In any case the Working for Families tax-benefit regime has probably made it too complicated to bring tax rates into collective wage negotiation, although a few cases

[13] We understand that this may be because industry is self-selected in the survey. Statistics NZ are currently looking to asking for the name of the employer and then matching this against the Business Frame in order to obtain the correct industry code.

were mentioned where workers looked at their post-tax and benefit change in income when negotiating gross wage rises. Related considerations such as student loans and the imminent introduction of the Kiwisaver scheme are likely to lead to more such behaviour.

Researchers can see the benefits of having reliable data on net income, rather than having to calculate it from data in the HLFS/NZIS, but it is well understood that most direct measurements of net income (after both taxes and benefits) tend not to correspond that closely with the net income that is implied by the characteristics of the individual or family. The Working for Families package is likely to exacerbate this discrepancy.

A first step in the direction of obtaining net income data would be the re-introduction by Statistics NZ of a Real Disposable Income Measure.[14]

3.6.3. Timeliness

The HLFS/NZIS and HES are seen as slow to be released, but users are generally happy with the timeliness of the other series. There is no desire to see increased timeliness at the expense of reliability. As noted above though, some users, notably those involved in forecasting, would like to see interim or 'flash' estimates, provided that error margins were known and that the estimates would be unbiased.

3.6.4. Access

Accessibility is rated highly by most users and the cost of access is perceived as low except for researchers wanting special runs. Access to unit record data such as via the Datalab is greatly valued by researchers, though there are still issues around the Department's overzealous attitude to confidentiality. While there is universal agreement with the need to protect privacy, current protocols are seen as unwieldy, bureaucratic and overly restrictive. It was noted by a number of researchers that access to Statistics NZ's wage data seems to be more geared to the public sector. A "one size fits all" approach does not encourage use of the data. Reflecting a similar sentiment, it was noted that Statistics NZ's Statement of Intent does not include encouraging the use of statistics. Doing so would generate positive feedback and lead to better data quality over time, certainly in comparison to making the data less accessible.

Too date, experience with Confidentialised Unit Record Files has been far from encouraging. And indeed there have been cases where the Department has deliberately, albeit randomly, swapped fields among survey respondents. This practice is intolerable as its potential to distort analysis is enormous.

Documentation is seen as generally good, but:

1. Operational details on the production of the adjusted and unadjusted LCI are still not entirely clear, even to experienced users.
2. Headline results need more explanation, especially when different measures are released. This is tied up with the notion, which is widespread amongst users, that they should be able to trust whatever Statistics NZ produces.
3. Staff references listed in releases as contact points for follow-up are often out-dated.
4. The search facility on the website is inefficient.
5. It is difficult to access time series on line.

[14] See for example Stroombergen (1998).

Most users are reasonably well informed about the wage series with which they work, but not about the other wage series. Thus while the official documentation is generally good there is perhaps a need for a succinct description of each measure that lists its strengths and its weaknesses. In fact this ties in with the second point above because headline results do not convey enough information for the non-expert user. Whilst one is reminded of the adage about a horse and water, perhaps the existing trough of documentation is not quite accessible enough – both in terms of locating it and understanding it – to persuade users to sample it.

3.6.5. Compliance

There is concern about whether survey respondents know or care about what they are doing, which is probably tied up with respondent burden. Cases of non-response, guessing and rough estimation were noted, leading of course to inaccurate and unreliable results. With regard to the QES this could be another possible reason for the volatility discussed above. The question was raised as to whether Statistics NZ's employer surveys could be electronically linked to payroll systems. Most major corporates use one of only a handful of commercial payroll services such as People Soft. This may be an option that could be linked in to the LEED project.

Compliance with Statistics NZ surveys is seen as less burdensome than compliance with IRD and ACC requirements, but reductions from any quarter are welcome. Outside of the research community, however, there is not much understanding about the LEED project.

3.6.6. Recommendations

A number of recommendations follow from the above:

1. *Data on wages and hours worked should be collected, compiled and published in a manner that is consistent with the development of a quarterly GDP Income measure.*
2. *If possible the NZIS should be released more quickly.*
3. *Consideration should be given to expanding the range of non-wage benefits in the LCI to include bonuses, incentive payments and stock options.*
4. *The LCI should be published with more measures of spread such as quintiles and standard deviations, with and without zero values.*
5. *Greater industrial and occupational disaggregation needs to be available from the LCI, QES, and the LEED project. The latter should also allow users to obtain more regional disaggregation.*
6. *Data on job tenure is scarce. It is worth investigating whether a question or two could be incorporated into the HLFS, perhaps as part of the annual income supplement.*
7. *Demand for monthly data is almost non-existent, but where it does exist it is because of a desire to have up to date data, rather than a desire for monthly data per se. Statistics NZ should consider whether flash estimates for the LCI and QES are feasible and worth doing.*
8. *Confidentiality protocols for non-government users are much more restrictive than necessary. We strongly urge Statistics NZ to assess what is necessary to preserve confidentiality rather than falling back on what is sufficient. Swapping of fields in unit record information must be stopped.*
9. *We encourage the on-going development of the LEED project, as the LCI, QES and NZIS all suffer from inaccurate responses.*

4. THE WAY FORWARD

We began this investigation with the 1992 Rose Report. When Dennis Rose was undertaking his research in 1992 the macroeconomic environment was very different. He noted:

"...it echoes the nightmare of working and living in a society which is stuck in a no growth situation, in an economy in which we have unemployment rates up to 30% among some young people. And the only advice we can offer them on how things might get better is that they should train themselves. If they ask "what for" or "what's the point", we don't have any answer at all."[15]

Against this context Rose identified three main uses of earnings (labour) data:

1. wage negotiation
2. research on the distribution of earnings
3. quantum of inputs for national accounting and productivity analysis.

The macroeconomic picture is very different in 2005, but it has not undermined these uses of earnings data. Wage negotiation still constitutes a significant use of the data. In fact the evidence from the consultations shows that official series have not kept up with what is required in a more dynamic economy with many skill shortages.

Research on the distribution of earnings is still widespread and has been extended into related areas such as the minimum wage, wage-benefit migration, labour market participation, returns to different skill levels, and so on. In addition, more wage data is used in research that feeds into monitoring and forecasting.

The data demands of national accounting are not familiar territory to most users of wage data, but with ever increasing pressure for more robust measures of national – and regional – growth and productivity, there has been no abatement of the use of wage data for these purposes.

So, are Rose's recommendations still relevant? Rose made 17 recommendations, of which the following four relate most to wage measurement:

1. Investigate the introduction of an individually focused survey of establishments, or enhancement of the Labour Cost Index sample, to provide information on occupational earnings, hours worked and contractual conditions.
2. Pilot test both annual and pay period income questions for possible inclusion within the Household Labour Force Survey.
3. Further develop the "data laboratory" concept, under which outside users can apply standard and experimental analytic techniques to data bases of the Department of Statistics, and review the procedures used by the Department's Australian and United States counterparts to protect the confidentiality of unit record data released on tape, to see whether they could be adapted to meet New Zealand circumstances.
4. Cooperate with Quest Rapuara in developing indicators on current occupational labour market conditions and trends for inclusion in career

[15] Rose and Brown (1992)

leaflets. This information should desirably include up-to-date information on trends in occupational incomes.

The essence of the first recommendation is even more relevant than it was in 1992; better information on hours worked is absolutely critical to complement wage rate data. Whether Rose's suggested method is the best way to obtain this information is not clear, but it is certainly worth investigating.

The second recommendation has been implemented. Improvements to the HLFS/NZIS are on-going and welcome, provided that consistency over time is maintained.

The third recommendation has also largely been achieved. The data laboratory and other avenues of access to unit records have developed a long way since 1992 and are of considerable benefit to users. However access protocols are still overly bureaucratic and overly restrictive.

The fourth recommendation has been partly implemented, but *Kiwicareers* has very little information on occupational incomes. However, this recommendation is beyond the power of Statistics New Zealand to implement.

Thus the main outstanding recommendation is the first one. It is also one of the recommendations arising out of this review, as noted in sections 3.2 and 3.3.

An accompanying paper prepared by Statistics NZ staff members (SNZ, 2006) provides an overview of wage measurement practice overseas, notably in Australia, Canada, the United Kingdom, the United States and Europe (Eurostat). It also presents a useful summary of all of the measures that are available in New Zealand.

While other countries tend to have more data and more detail (such as on occupation and region), the essence of their measures is similar to those produced in New Zealand, namely QES type measures that calculate wage rates as total wage bills divided by hours, measures based on personal surveys similar to the NZIS, and progressively more use of administrative data sources similar to LEED. Price index type measures such as the LCI are rare and only two jurisdictions appear to produce a quality adjusted measure of wages – Australia and the United States. And only Australia uses worker qualifications as one of the dimensions of quality adjustment.

There does not appear to be any fundamental aspect of wage measurement *per se* in which New Zealand is internationally deficient, but one striking difference is with regard to the complementary measurement of hours worked. Most other countries provide measures of hours worked that are obtained from employer surveys, as recommended above and in the Rose report.

Accordingly we do not see any pressure for future enhancement of New Zealand's wage measures coming from international best practice, that has not already been identified in the consultation. Indeed the qualification-based quality adjustment in LCI rather puts New Zealand out of step with other jurisdictions. We see this as one more reason for eventually discarding the quality adjusted LCI and using whatever resources are thereby saved to further meet the needs identified in the consultations. Foremost amongst these is probably the development of measures of hours worked, particularly measures that are consistent with the information coming from the LEED project. Other priorities include more disaggregation of the LCI by occupation and region, on-going refinement of the LEED, and better user access to confidentialised unit record data.

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APPENDIX A

Discussion Guide for
Review of Wage Measures

Research by Infometrics on behalf of Statistics New Zealand

INFOMETRICS

This project is being undertaken as part SNZ's Official Statistics Research programme to improve the official statistics system. Statistics New Zealand is interested in strengths and weaknesses of existing wage measures, and future directions for new wage measures.

Organisation:_____ Contact:_____ Date:_____

1. Which wage and income series are used currently?

2. What are their main uses (eg wage negotiation, cost escalation in contracts, research)?

3. Are users familiar with the source/derivation of these series (eg LCI, QES, HLFS)?

4. Are there any likely future uses of the existing data series?

5. What wage/income data needs are not being met?

6. For the wage and income series that you use, please rate from 1 (low) to 5 (high), your opinion on the following characteristics:

	Names of Series Used				
Validity: Coverage and measurement framework should align with user requirements and be based on accepted economic principles. Series should have a high degree of continuity.	☐	☐	☐	☐	☐
Robustness: Few and small revisions, narrow error bands.	☐	☐	☐	☐	☐
Timeliness: How soon after the period to which it relates the data becomes available.	☐	☐	☐	☐	☐
Degree of disaggregation in coverage – industry, occupation, hours worked, region, business size, age of worker etc.	☐	☐	☐	☐	☐

Comments

Further issues for discussion.

Measurement basis

7. Gross or net wages/income.

8. Changes in wages versus actual wage rates per hour/week/year.

9. Frequency: monthly, quarterly, annual etc.

10. Fixed quantity of work (eg. fixed hours) and/or quality of work.

Coverage

11. Inclusion of working proprietors and self-employed.

12. Qualifications and work experience.

13. Distributional information – medians, quartiles etc.

Access

14. Cost of data or of access to data.

15. Importance of direct access to (confidentialised) unit record data.

16. Quality of explanatory documentation and best way to improve user understanding.

Miscellaneous

17. Possible trade-off between timeliness and robustness.

18. Student loan repayment or child support payments in relation to wages.

19. Respondent load with respect to data acquisition for the measures concerned.

20. Any other issues?

APPENDIX B

Comments on to Statistics New Zealand's Responses to Recommendations

Recommendation 1:
The LCI should be based on the concept of "substantially similar" with regard to job specification so that there is no adjustment to ensure identical positions.

Agreement to investigate.

Statistics New Zealand could investigate publishing a third LCI based measure that incorporates this concept. This could be included as part of the LCI rebase. Some work is required to done on scoping the extent of implementing this recommendation. Any major system or survey redesign changes required to implement would require funding to be made available.

Comment: Supported

Recommendation 2:
The unadjusted LCI series should become the predominant LCI measure of the price of labour. (It should ideally include overtime as an option.)

Not accepted

Statistics New Zealand believes that the adjusted LCI has benefit and does not accept completely the arguments outlined in the paper. We also believe that one the primary benefits of the adjusted and unadjusted LCI is the ability to compare one to the other. This would remain even if a *"substantially similar"* series is developed. Given the acceptance of the unadjusted series by users it is recommended the "experimental label" be dropped.

Inclusion of overtime in the unadjusted will be considered. Statistics New Zealand questions whether it will produce any significantly different result. This is due to:

- The relatively small weighting of 2 percent for overtime. It is believed that there would be little difference between ordinary time and 'all salary and wage rates' unadjusted LCI

Some respondents do not report the same set of overtime hours every quarter. (This would mean these rates would be excluded from the unadjusted calculation due to a change of hours.)

Comment: If the unadjusted LCI is given status equal to that of the adjusted LCI, we believe that the greater merit of the former will eventually become more widely recognised. The marginal value of including overtime is accepted.

Recommendation 3:
The adjusted LCI series should be marginalised and eventually discontinued, and replaced with a unit labour cost series based on the Statistics New Zealand's new productivity series, the RBNZ's methodology, or something similar.

Not accepted

Statistics New Zealand believes that the adjusted LCI has benefit and does not accept completely the arguments outlined in the paper. We believe that having an LCI that aligns in concept (i.e. quality adjusted) to other prices indexes (VCPI, PPI, CGPI) is a primary benefit. We also believe one benefit of the adjusted and unadjusted LCI is the ability to compare one to the other. This would remain even if a "substantially similar" series is developed.

The need for a unit labour cost measure is acknowledged. This may be an output of the productivity work in the future.

Comment: We agree that quality adjustment is desirable in principle, but our position is that adjusting for changes in worker qualifications is a poor proxy for changes in worker quality – assuming that quality is component within the wider concept of productivity.

Recommendation 4:
The LCI will probably need to be based on a proper statistical sample so that measures of actual wage rates, not just changes in wage rates can be produced. Disaggregation with regard to industry and occupation is also desirable.

Not accepted, not possible in current environment.

The lack of an occupation based sampling frame means any survey currently must be on a purposive basis (with respect to occupation). The lack of a means to produce a sample survey for occupation means that any levels produced may not be robust for publication. Confidentiality issues may also preclude publication at detailed levels. This need is noted and will be monitored.

This may be possible at some stage from LEED but:

- LEED would need to include occupation data (it currently does not): and
- approval to use LEED data for this purpose would need to be obtained.

Comment: We understand the difficulty of pursuing this recommendation with current data.

Recommendation 5:
A complementary robust quarterly series on hours worked covering all industries is absolutely essential.

Currently met.

In concept the HLFS collects actual hours worked for the whole economy. Users have commented adversely on the volatility of the HLFS hours measure. The QES collects Paid hours using employers' payroll data and does not cover the entire economy. An extension of the QES coverage could be considered as part of any redesign of the QES. More examination of the user comments around this recommendation is required.

Comment: The key word in this recommendation is 'complementary'. The hours worked data should match the LCI series at a disaggregated level. The HLFS and QES do not do this.

Recommendation 6:
The LEED initiative should eventually produce the labour income information that is required for national and regional accounting. If so, then the QES could probably be

abolished or reformulated to collect data on hours worked. If not then the QES should be redesigned and the sampling organised to address the specific needs of national and regional accounting.

Aligns with current Statistics New Zealand Strategy

This recommendation aligns with Statistics New Zealand thinking. The redevelopment of the QES will incorporate looking at the extent that LEED can replace or supplement the QES data. National Accounts (and the regional GDP) project has already used LEED in their work. The one concern in the future for LEED to produce labour information for National Accounts is whether the reduced timeliness can be overcome (e.g. via modelling). If so, it could be a better source of information than QES, especially for low level breakdowns.

Options for optimising the QES sample design to produce regional data could be investigated during any redesign.

Comment: Supported

Recommendation 7:
Data on wages and hours worked should be collected, compiled and published in a manner that is consistent with the development of a quarterly GDP Income measure.

Aligns with current Statistics New Zealand Strategy

It is believed that this recommendation refers to the publication of wage measures on an ANZSIC basis and GDP measures on and ANZIND basis. The implementation of ANZSIC06 will incorporate agreed outputs categories for all statistics removing this inconsistency. This recommendation will be noted in the development of the GDP income measures and redevelopment of the QES.

Comment: Acknowledged

Recommendation 8:
If possible the NZIS should be released more quickly.

Agreement to investigate

This desire is noted. This may be possible when Computer Assisted Interviewing (CAI) is 100 percent implemented into the HLFS/NZIS. Any improved timelessness would depend on availability of editing staff. At this stage Statistic is not yet prepared to commit to any improved timeliness.

Comment: Acknowledged

Recommendation 9:
Consideration should be given to expanding the range of non-wage benefits in the LCI to include bonuses, incentive payments and stock options.

Agreement to investigate

Implementation of this suggestion would require a major re-design of the LCI. The Australian Bureau of Statistics does collect information on bonuses for the equivalent measure. Prices unit undertakes to will look at scoping this as part of the LCI rebase. Should this require major system or survey redesign changes it would be subject to funding being made available?

Comment: Supported

Recommendation 10:
The LCI should be published with more measures of spread such as quintiles and standard deviations, with and without zero values.

Agreement to investigate

This will be investigated. It appears that producing more tables will not add much additional work. This could be incorporated as part of the LCI redesign. This may also reduce the number of queries the LCI team subsequently answers

Comment: Acknowledged

Recommendation 11:
Greater industrial and occupational disaggregation needs to be available from the LCI, QES, and the LEED project. The latter should also allow users to obtain more regional disaggregation.

Agreement to investigate

There are confidentiality issues here and it's unlikely that Statistics New Zealand would change policy on this. In this regard the occupational data currently only exists in the LCI and we are not prepared to release at a lower occupational level. However, further regional disaggregation from the LEED data at Territorial Local Authority level is being worked on at the moment**.**

Comment: Acknowledged

Recommendation 12:
Data on job tenure is scarce. It is worth investigating whether a question or two could be incorporated into the HLFS, perhaps as part of the annual income supplement.

Already addressed.

LEED will be releasing first official job tenure statistics on 25 October 2006. Any extension of the HLFS questions to wait until assessment of LEED data is complete.

Comment: Acknowledged

Recommendation 13:
Demand for monthly data is almost non-existent, but where it does exist it is because of a desire to have up to date data, rather than a desire for monthly data per se. Statistics NZ should consider whether flash estimates for the LCI and QES are feasible and worth doing.

Not accepted

Unless the frequency changed to a monthly collection cycle, the effort that goes into producing quarterly statistics and 'flash' estimates would be counter productive. This appears counter to the message we are receiving from ACES that "good data later is better than bad data early".

Comment: The recommendation was only to consider producing flash estimates. It seems that this has been considered and that the decision is negative. That has our support.

Recommendation 14:
Confidentiality protocols for non-government users are much more restrictive than necessary. We strongly urge Statistics NZ to assess what is necessary to preserve confidentiality rather than falling back on what is sufficient. Swapping of fields in unit record information must be stopped.

Not accepted

Statistics New Zealand only confidentialises where necessary and is very aware of the effect we are having on data. It is believed this comment is related to the NZIS CURF.

Comment: We completely support the need for preserving confidentiality, but we still believe that SNZ's practice is too restrictive. For example, withholding a company's ANZSIC code is unwarranted. If the department must swap fields in CURF data – a practice with which we vehemently disagree – then at the very least each swapped field should be so noted.

Recommendation 15:
We encourage the on-going development of the LEED project, as the LCI, QES and NZIS all suffer from inaccurate responses.

Aligns with current Statistics New Zealand Strategy

This matches Statistics New Zealand on going policy. The degree which LEED can supply data needs in this area is untested at the moment. Additional variables (e.g. occupation, Wage rates) may be required to be added to the dataset.

Comment: Acknowledged.