16th Series
Australian Consumer Price Index
Review

SUBMISSION

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Reverse Cover

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Summary

The 16th Series Review of the Consumer Price Index is the first major review of the CPI since the 13th Series Review conducted in 1997.

Central to this submission is an argument that this Review should focus on ways forward rather than simply reprising old arguments. Central to this I consider is that it should not limit its consideration to options such as determining a simple primary purpose for the CPI so as to have a single iconic CPI, for its own sake. Such a decision will ensure that these arguments will continue without resolution, and as a distraction to many other important questions that should be considered.

It is clear, historically, and in current debate, that there is no single consensus role for the CPI. The two key purposes of the price index are as a measure of changes in the cost of living of households and as a measure of generalised price increase for macro-economic purposes. In addition the CPI is used more widely as a measure of inflation for commercial and other purposes, for which it is often very poorly suited.

In these circumstances the underlying emphasis of the ABS consultation on seeking to determine a "Principal Purpose" and its concern "about publishing measures that could be viewed as competing with the headline CPI measure" does not provide a useful framework for considering the issues. This stance does not present the agency with a basis for a real decision on the best approaches to the development and delivery of robust statistical series, but is rather concerned with taking a decision on whose interests should dominate.

This is clearly not a statistical decision and in this submission I strongly suggest that the ABS should rather take an approach of developing a series of measures which appropriately respond to these different needs.

This submission is also concerned with the distribution of price change. While it is well recognised in index theory that price change does not impact across the population in a homogeneous manner, this is often an issue largely ignored in the production of price statistics, and poorly communicated to the public. Proposals in this submission suggest that greater attention be given to this. While recognising that this approach may place a heavier burden on some users, especially those who use the CPI in largely formulaic ways, at the same time it will work to improve the credibility of these data as they will more accurately reflect the reality of price change in the community.

The need to better understand, and publish data on, the distribution of price changes for different groups in the community was also specifically addressed in the *Report of the Commission on the Measurement of Economic Performance and Social Progress (*Stiglitz, Sen & Fitoussi 2009). The report concluded in this regard that: "A price index for (actual) private consumption of major groups in society (by age, income, or place of residence such as rural vs. urban population) is necessary if we are to appraise their economic situation."

The question of bias in the CPI is also addressed. Specific issues include the impact of substitution bias in the use of a fixed basket of goods over an extended period, and the extent to which the current focus on 'constant quality' does not take full account of the possibility that actual consumer gain may be much less. The discussion of distribution also highlights the difference between the plutocratic nature of the CPI as an index of price change for the household sector as a whole, a concept which more highly weights higher income households, with the average experience of households.

In discussing bias I would emphasise that this submission does not conclude that the actual rate of price change recorded by the CPI is biased in one direction or another. Rather there are biases which operate

both upwards and downwards, the net impact of which is difficult to ascertain without much more detailed analysis, which is not generally possible with the data available to the public.

While it is often argued that some of these issues are peripheral and of academic interest as in the longer term there is often convergence, this is not a persuasive argument. The theoretical case for convergence is weak and empirical data is mixed. More significantly this approach ignores the possible need to address variation in the shorter term – when people are affected by it, and the potential for even relatively small divergences to accumulate over time. Such arguments also form a poor basis for the production of good statistics.

This leads more broadly to the need for greater transparency in the CPI. While acknowledging that ABS practice has moved in a positive direction, there is scope for much more. In part proposals for a wider range of indexes will provide much greater insight into the operation of the CPI – or CPIs. In addition there would be considerable benefit from ABS expanding its program of research and publication. This would be greatly facilitated by a move away from the position of having a single CPI to a situation where ABS can much more openly discuss the merits of the different approaches, rather than needing to justify the selection of one particular concept. Within a more open environment the ABS should also allow for the appropriate revision of the CPI in circumstances when later data are available (historically corrected Fisher indexes) or when errors are made (rather than feeding these in at a later point).

In summary:

- The current CPI was specifically selected at the time of the 13th Series Review to be a measure of price change for the purposes of monetary policy:
  - In this capacity it less effectively provides a measure of the changes in the Cost of Living for households in Australia, despite the fact that this is the way in which the measure is most frequently perceived.
  - Notwithstanding this change, the headline CPI is only one of a wide range of indicators used for monetary policy setting, and the sole focus of the CPI on this hence appears neither justified, and risks the measure not only being inadequate for other purposes, but carries the potential for the measure to lose credibility with the population.
- All price indexes are subject to bias. This is also the case with the CPI. Specifically:
  - The use of a fixed basket of goods overstates price change where consumers substitute products and change their consumption pattern;
  - The plutocratic nature of the index, which weights the contribution of households to the CPI by their level of expenditure, while making the index representative of price change in spending across the population, means it can be unrepresentative of the spending of 'average households'; and
  - The approach to quality adjustment may mean that the index is not indicative of the actual change in the cost of living.
  - As the first of these is likely to bias the index upwards, the second two may have biased it downwards over recent years (as a measure of the change in the cost of living of an 'average household'); it is unclear what the overall balance of bias is.
- Decisions such as the primary purpose of the CPI are not statistical decisions, but rather involve ABS deciding which balance of interests it will support relative to other users. This policy is then accompanied by an ABS policy to avoid "publishing measures that could be viewed as competing with the headline CPI measure".
  - This approach is poor statistical practice.

- The need to 'protect the CPI from competition' hinders an environment of openness and critical review of the CPI.

- Reflecting this the specific issues raised in this submission encompass:
  - Weighting:
    - Reliance upon fixed weights which do not reflect substitution and changing patterns of consumption between the 6 yearly HES.
    - An inappropriate treatment of the costs of home purchasers and owners which means housing costs are underweighted.
    - Use of a weighting pattern which is unduly reflective of the consumption patterns of higher income households.
  - Prices:
    - Whether the 'constant quality' adjustments of some items do not realistically reflect either the utility individuals gain from changes in quality not their capacity to meet needs in the market.
  - Openness and transparency:
    - A less defensive approach to a 'headline measure'.
    - Greater variety of indicators reflecting the differing needs and interests of users.
    - Reforms to the approach to revision.
    - Further improvements to the amount of information provided on the CPI and its components.
    - An active program of research and analysis the results of which are available to users.

Summary of responses to Information Paper Questions

Section 2

The Review should focus less on the objective of choosing a single headline measure through an arbitrary decision, albeit based on a weighting of the claims of different interested parties, and be more concerned with what might be a range of measures of price change which reflect the range of different needs and conceptualisations.

If there is to be only a principal purpose for the CPI it should be as a measure of the Cost of Living.

ABS should produce, with the introduction of each new series, an estimate of substitution bias in the previous series – for example by estimating a Fisher Ideal Index – and generate a chained index correcting for this. A long term historical series should also be derived on this basis.

Additional analysis should be published on the relative characteristics of the CPI and national accounts measures including the degree to which differences in the measurement of price change between the HFCE indices and the CPI relate to differences in methodology and scope. The ABS should consider developing versions of these limited to households (and potentially for the non-household element of the broader household sector).

ABS should consider ways in which greater balance can be achieved in its presentation of alternative indexes and in the information available to users to determine the most appropriate.

Where there are specific price events, such as occurred as a consequence of Cyclone Larry where it is clear that the level of consumption of the product has significantly reduced, the ABS should provide an alternative estimate of price change, taking into account the changes in the extent to which the assumption of a fixed basket is clearly unrealistic.

Section 3

There is not a compelling case for increasing the frequency of the CPI, especially in a low inflation environment.

Moving to a monthly series would not just involve a more frequent updating of the CPI but would have a range of other implications for the way in which the series is operationalised.

It does not appear to be a value for money change.

Section 4

The specific questions concerning the evaluation of the deposit and loan facilities index cannot be separated from the wider question on the treatment of owner occupied housing and the more fundamental question of the purpose of the CPI.

In line with discussions elsewhere in this submission I would address these in terms of the need to focus the CPI on being a COLI and the adoption of an acquisitions approach, or potentially for owner occupied housing a use approach.

Section 5

As part of the Review the ABS should examine, including using international benchmarking, the issue of the lag between the completion of the HES data collection and the preparation of the CPI weights.

There is a good case to increase the frequency of the HES to every four years. Such a change would however have to be fully funded and not at the expense of the scope of the HES or other household surveys. It is important that the HES cycle continues to be integrated with that of the Survey of Income and Housing.

ABS should examine the opportunities of using external sources of data to develop an IPD type approach to the CPI. As reweighting of population subgroups is difficult to achieve between the HES, it would be important to also maintain a comparable series.

In line with producing a CPI which is a measure of change in the cost of living that the ABS:

- Revise the approach to quality adjustment to take account of the actual utility consumers achieve from changes in product 'quality'; and also consider an approach which reflects the extent to which products actually exist in the market place for consumers to purchase
- Provide more public information on the adjustment process including sub-expenditure class indexes and comparisons of retail price indexes of particular products
- Utilise data collected for the CPI to develop and publish additional indexes – akin to retail price indices for 'standard products' in particular in the areas of consumer electronics, motor vehicles and housing.

Section 7

The existing range of analytical indexes are a useful set of tools and should be expanded. In particular:

- To provide a link series between the series and the CPI (for example an ALCI for the same population covered by the CPI)
- Additional series are needed covering key family types, housing tenure status and income levels
- A democratic CPI should be constructed
- Depending upon the decision on the main purpose, indexes representing different approaches; and
- Series excluding the impact of government subsidies and charges

The collection of data on retail prices should be expanded and produced as a time series with appropriate link series where products change.

The initial steps to considering the need for a seasonally adjusted series should be to establish the extent to which there is identifiable seasonality, and the contribution made to this by approaches adopted by the ABS in the compilation of the CPI.

Section 8

The concept of a constant weighted spatial index of relative price levels has no validity on either empirical or theoretical grounds.

It is difficult to see in what way such indexes could contribute to better policy making.

There is a case for greater transparency in the treatment of government subsidies in the CPI which might be achieved by measures such as:

- The publication of an analytical series that excludes government subsidies. Comparison with the CPI inclusive of these would permit the effect of changes in these programs to be more accurately judged.
- An accessible database or chronology of changes that allows users to more rapidly assess the factors, other than market prices, that impact on the CPI.

The quantity and quality of published analysis and research should be one of the internal performance indicators used within ABS with clear expectations that areas such as those involved in price indexes have a strong public profile.

If changes are required to the HES for the purposes of the CPI arising from the Review, that these are not at the expense of other aspects of the survey and are undertaken in consultation with other users.

1 Introduction

In this submission I present my views from the perspective of extensive use of the CPI in social policy analysis. Central to this is a very strong interest in understanding the trends in well-being, and the capacity of households to maintain or improve their living standards. The CPI plays a critical role in much of this analysis. Since the index also has a role in determining, at times very directly, the level of income many households receive, the appropriateness of the construction of the CPI for this purpose is again a central consideration.

While I recognise that the question of the 'primary purpose' of the CPI will very much exercise the minds of those undertaking the Review, and the advisory group, in this submission I argue that the Review, and the ABS, should not inappropriately focus on this.

My reasons for this are that the concept of a principal purpose is largely irresolvable on any purely statistical grounds, and is rather about arbitrating between different groups and taking a decision to favour one group of interests over the other. This is clearly reflected in the outcome from the 13th Review which noted "it is clear that no consensus on principal purpose can be reached". (ABS 1997a)

There seems little reason to anticipate that consensus across users will emerge this time, and I consider that good statistics in Australia would be better served through the development of appropriate measures to meet the needs of all users of the CPI, which reflect the accepted diversity of possible statistical approaches to index construction, rather than on debating which of these should be set above the others.

1.1 Structure of submission

In large part the structure of this submission reflects the chapters of the Information Paper issued by the ABS, but in a number of sections I have extended my comments to the broader theme of the chapter, rather than limiting them to the more restricted topics on which user's views were requested.

In particular:

- Section 2 raises the question of how the ABS approach to the CPI should address the distribution of price changes across the community especially the possibility that the experience of the 'average household' may be different to the measured change in prices of the household sector overall, and the extent to which the CPI may be affected by substitution bias due to reliance upon a fixed basket of goods.
- Section 4 considers both the issue of the treatment of financial services and of home purchase.
- Section 5 contains a lengthy discussion of the quality adjustment methodology.
- Section 7 draws on previous discussion to suggest a number of additional analytical series.
- Section 8 extends discussion to encompass the treatment of government subsidies, the ABS analytical and publication program and the Household Expenditure Survey.
- Sections 3 and 6 are more limited in their scope.

1.2 The challenges for ABS

In addition to the specific question of the nature of the 16th Series of the CPI this submission also raises aspects of the approach of ABS to its work and its relationship with users. In raising these I would emphasise that this should not be taken as a critique of the Bureau, and I recognise the many constraints, including resources and the need to maintain a heavy program of surveys and other data collections and the release timetable for these. The three main themes of these are:

1.2.1 Openness/diversity and transparency

This submission has two central themes concerning the approach of the ABS to the CPI:

- That, to the extent issues of purpose and approach do not reflect purely statistical choices, the ABS should accept this diversity, either through the CPI itself or through the range of analytical series produced.
- Effective use of the CPI and related price data requires users to be well informed about the data, how it is compiled, what alternatives exist and about issues associated with its use, including its goodness for use in particular situations.

While I acknowledge that ABS have made some serious improvements in this regard, as discussed at various points of this submission, there is much more that can, and should be done. Some aspects of the CPI process, especially below the expenditure class, are quite opaque to users, as is much of the detail of the constant quality adjustments. There is little produced by ABS on issues such as substitution bias, while in other areas, although ABS assure users that they believe problems of bias are low, there is little analysis provided. Even when information is made available on changes this is often difficult to use – for example appearing at one point in time in quarterly bulletins, but without any consolidated documentation. As discussed later, sometimes relatively small initiatives would benefit users – such as the compilation of an ALCI on the CPI population to allow users to assess to what degree the variance of the sub-population ALCI from the CPI are a product of the circumstances of the sub-population, or the differences in approach between the ALCI and the CPI. At times, there would be some benefit in ABS being somewhat less defensive in its approach.

1.2.2 Revisions

One ABS practice in the construction of the CPI is that the series is not revised, even when an error has occurred in the compilation, except potentially in cases of 'serious distortion'. Rather, the usual ABS practice, upon identifying errors is to enter corrections into the series at a future point in time to bring the index to its appropriate value. [1,2]

[1] The formal policy stated in the ABS publication"Consumer Price Index: Concepts, Sources and Methods" (ABS 2009a) is: "13.11 The ABS strives for accuracy in all of its publications. The accuracy of the CPI is of particular importance to the ABS, and in recognition of the use of the CPI in determining economic policy and in contract price indexation, the ABS makes an effort to eliminate the need for revision. However, if revision is required, the ABS's revisions policy is based on the Resolution on Consumer Price Indices issued by the International Labour Organization in 2003:

> "When it is found that published index estimates have been seriously distorted because of errors or mistakes made in their compilation, corrections should be made and published. Such corrections should be made as soon as possible after detection according to publicly available policy for correction. Where the CPI is widely used for adjustment purposes for wages and contracts, retrospective revisions should be avoided to the extent possible.""

A consequence of this is that the CPI, and in particular component indexes, may not necessarily reflect the actual price pressures at a particular point of time. While such an approach may be argued on the basis that such retrospective changes would cause considerable problems for contract and payment indexation, it is difficult to see that this is justification for not providing correct data.

The problems of this strategy can be considered in the following example. If a researcher wanted to look at the impact of the GFC (or some other change) on the cost of credit to the household sector they may conceivably wish to use the 'Deposit and Loans facility' expenditure class index. This though would be a fraught exercise as the index over this period contained both the estimated change in the cost of deposit and loans – and corrections for previous underestimates in the series. Such changes are relatively thinly documented, for example in June 2008, the information provided to users on changes was simply: "the ABS is continuing to work with data providers, and reviewing and updating where necessary, a range of methods relating to the collection and compilation of financial sector output, income, transactions, positions and prices. As a result of this work, this quarter's results include a correction for under–estimation in the previous quarters' estimates. This work is continuing and further improvements in sources and methods may lead to additional corrections" (ABS 2008).

Very clearly there is a need for the ABS to produce revised CPI series with these corrections allocated to the appropriate time period – not the period in which they were finally resolved.

1.2.3 Research

Closely associated with the need for greater transparency and openness is the conduct of more research on the CPI, and the implications of this for users, and for index construction. While a small number of papers are available from the ABS, and ABS officers at times produce some research in the context of international collaborations such as the Ottawa group, and there have been some collaborations with academic researchers, the overall volume of this material is quite low.

In this submission a number of avenues for research are identified. In some cases it may well be that there has been work undertaken for internal purposes – but of course this is not available to users, or more widely. I am sure other submissions, and the work of the Advisory Group, will identify other subjects where there is similarly a need for research to understand both the choices that need to be made, and to better understand the CPI.

In Section 8 I propose that the ABS adopt a much more active approach to the undertaking, support and dissemination of research. A range of the specific subjects for such additional research are identified in other parts of the submission.

The question of what constitutes a "serious distortion" is not addressed, and whether this is distortion of the headline measure alone, or also the component indexes.

[2] One exception to the rule on non-revision relates to the RBA measures which contain seasonally adjusted estimates and are hence subject to revision arising from the re-estimation of seasonal effects.

2 Principal Purpose of the CPI

Chapter 2 of the ABS Information Paper poses two questions for users. The first is what should be the principal purpose of the CPI. The second concerns the usefulness of supplementary indexes.

In addressing these questions this submission also specifically considers, in some detail, two questions of index construction: The distribution of price change; and the use of a Laspeyres Index. Conceptually these are central components of any discussion of the purpose of the CPI.

2.1 Principal Purpose of the CPI

The purpose of the CPI has been the subject of debate over a considerable period of time, with the ABS having taken different tacks at different times. Most notably in the 13th Series Review it took a decision to shift the focus of the index to being a "general measure of price inflation for the household sector".

Notwithstanding this, what is clear from the continuation of the debate on purpose, is that there are a range of diverse purposes for the CPI and inherent in these there are considerable differences in approach to index construction.

The purposes of a CPI have been classified in many different ways[3]. In this submission I would suggest 4 main purposes:

- As a measure of change in the cost of living of households, including for the purposes of indexation or otherwise informing decisions on payments including income support and wages, as well as evaluating trends in incomes over time;
- As one of a range of measures of inflation used for monetary policy setting;
- As a measure of price inflation for various other purposes including commercial contracts; and
- In a more symbolic way as a measure of good or poor government.

Considering these in more detail it is clear that as a measure which is derived from the expenditures of the household sector it is not appropriate to focus the purpose of the CPI on the third purpose. A rejection of this role however clearly raises the question of the potential need for an index for this purpose[4].

Similarly, despite the focus of much public debate on the 4th application, this should not be the purpose of the index.

This leaves the potential focus on the first two. As implied in the above categorisation the role of the CPI in monetary policy setting is contributory and not determinative. That is, policy is made on the basis of consideration of a wide range of measures of price inflation (and components of this) as well as other information including that of inflation expectations. This qualified role of the CPI was recently stated in the RBA February 2010 statement on monetary policy:

[3] Diewert (2001) suggests 4: A compensation index; a cost of living index; as a consumption deflator; and as a general measure of inflation. In the 13th Series Review ABS (1997) suggest: as input to income adjustment processes; for general indexation of public and private sector contracts; and a measure of inflation for macro-economic adjustment

[4] While in this submission I do not seek to examine what such alternative indexes should be, it is a subject that the Review could usefully consider. Particular issues include a need to consider a wider consumption base than households (or even an alternative base) and to deal with the cost of capital.

> "CPI inflation can, at times, be heavily influenced by movements in particular prices that are not representative of the broader trend in inflation. In 2009, year-ended CPI inflation was held down by the large falls in the ABS estimate of deposit & loan facilities prices and to a lesser extent by falls in automotive fuel prices. Given the influence that particular items can have on CPI inflation, RBA staff monitor a range of measures of underlying inflation, as well as attempting more broadly to understand the various factors driving the CPI at any point in time. Measures of underlying inflation include some that exclude particular items such as automotive fuel, fruit & vegetables and deposit & loan facilities prices and various trimmed mean and weighted median measures. As has been noted previously, typically these measures will provide a range of estimates and there can be no single measure of underlying inflation that is best at all times." (RBA 2010)

Similarly the Statement on the Conduct of Monetary Policy issued by the Treasurer and the Governor of the Reserve Bank of Australia on 6 December 2007 (Swan and Stephens 2007) does not specify the CPI as the measure of consumer price inflation: "In pursuing the goal of medium-term price stability, both the Reserve Bank and the Government agree on the objective of keeping consumer price inflation between 2 and 3 per cent, on average, over the cycle."

In contrast to this contributory role in monetary policy the CPI has a determinative role in providing estimates of changes in the living costs of households through processes in both the public and private sector.[5]

While on these grounds it is tempting to simply argue for this cost of living purpose for the CPI, I consider that this is not an appropriate response for the ABS to take in constructing price indices.

Specifically I consider that the approach of the ABS in paragraph 2.22 of the Information Paper to be inappropriate. In this discussion ABS, while recognising that a single measure of CPI does not meet all user requirements, it expresses 'concern' about publishing what it sees as 'competing measures' to any headline measure.

My reasons for taking this position is

- As recognised in the discussion paper and noted above, there is no single 'correct' CPI given the diverse purposes to which it is applied and the degree of contention around some aspects of index construction;
  - Hence while I would argue most strongly for the CPI to be a COLI, I acknowledge that others will have strong, and legitimate, reasons for taking a different stance.
  - It is very difficult to see what the role is of the ABS (or even a reference group of experts and interested parties) in making a decision on whose needs and preferences it should meet[6].
- The argument concerning 'competing measures' neglects the extent to which multiple measures exist in many countries, including the US, the UK and indeed the co-existence of both national and EC wide measures within the European community[7].

[5] It is recognized that reference to the CPI is enshrined in a large number of legislative instruments and in public and private contracts. While this may be seen as a constraint on the capacity of the ABS to have more than one measure of price change, any move in this direction would also provide a catalyst for a more systematic review of these approaches, including an assessment of what may be the appropriate measure to use, rather than simply using the CPI despite the fact that it has had several different conceptual bases over time.

[6] In making this comment I emphasise that the issue here is neither one around the independence of the ABS in determining, on statistical grounds a good measure, nor around the question of how it should utilise its resources, but rather, in a case where there are quite valid and competing conceptualisations which in large part would not involve significant additional resources, whether it should favour one over the other.

  - Equally there is little evidence that there has been any particular confusion in Australia with regard to the publication of both the CPI and the four ALCIs, and most definitely not a level of confusion that could be considered as injurious to the public interest.

- More generally, to couch the argument in terms of ensuring "that the broader user community is not confused" is quite patronising. The broader user community would be much better served by having a choice of clearly defined different measures which they can then use as appropriate for their purpose, rather than a single measure which may be primarily designed to measure a quite different concept.
  - Indeed the idea of a single iconic CPI, regardless of what it specifically measures, seems to have a very strong element of the 4th 'symbolic' use of the CPI.
- The appeal in paragraph 2.1 of the Information Paper to the RBA's monetary target perhaps overstates the role of the CPI which is neither specified in the Statement on the Conduct of Monetary Policy, nor is it the sole measure relied upon in making assessments against the target.

For these reasons I strongly argue that this Review should focus more on the range of measures needed by different users than on the simple objective of having a single icon-like CPI. This approach to using multiple indexes was articulated in the 13th Series Review by Professor Neutze, a member of the Advisory Group, who noted that as "the CPI is used for two distinct purposes … there is a need for two separate indexes" (ABS 1997a). Any decision on the purpose of the CPI has strong implications on how the index is constructed.

One argument that was advanced against the development of multiple measures (including by some in the 13th Series Review) is that these indexes are unnecessary as they often tend to converge with each other over time and hence debates about one rather than another is largely academic. I reject this. Firstly while some analysis shows convergence, this is not always the case, and indeed there are few theoretical grounds for assuming such convergence. Secondly even small differences between series can have considerable impact over time. Thirdly short term divergence can be important, including in some cases where income levels are adjusted by an index[8].

Summary

The Review should focus less on the objective of choosing a single headline measure through an arbitrary decision, albeit based on a weighting of the claims of different interested parties, and be more concerned with what might be a range of measures of price change which reflect the range of different needs and conceptualisations.

If there is to be only a principal purpose for the CPI it should be as a measure of the Cost of Living.

2.2 More specific design issues

Two specific questions are asked in paragraph 2.23 of the Information Paper. These address the appropriateness of the acquisitions conceptual basis; and the usefulness of supplementary indexes.

[7] Indeed in the case of the Netherlands de Haan (2006) reports on the work of Statistics Netherlands in the development of a separate National CPI directed at measuring changes in the cost of living to complement the European Harmonised Index of Consumer Prices and various national accounts measures. In this case the Netherlands statistical agencies see the idea of having differing indexes for different purposes as an opportunity – rather than a risk.

[8] It is in fact curious that the argument of convergence is at times most strongly articulated by those advocating the specific adoption of one particular approach.

As the first question primarily concerns the treatment of owner occupied housing and financial services I have made comment on these in Section 4 which deals with the matters raised in Chapter 4 of the information paper.

In addition to these there are some other important design questions which should form part of the Review's deliberations:

- The conceptual nature of the CPI as a measure of the change in the cost of goods for the household sector in aggregate; and
- The focus of the CPI on a fixed basket of goods and more generally the use of a simple Laspeyres index and the chaining of these to determine a long term price index.

2.2.1 A price index for households or the household sector

Consumption is not homogeneous across households. Depending upon household circumstances and preferences, different households will purchase different combinations of goods and services. As the rate, and indeed often the direction, of price change of these products vary, so does the experience of price change of these households.

The CPI as a plutocratic index

The CPI is a price index based upon the expenditure pattern of the household sector as a whole. Because the weighting pattern is based upon total expenditure the composition of the index, and the actual estimates of price change, are more heavily influenced by the expenditures of more affluent households. In the 2003-04 Household Expenditure Survey the 20% of households with the lowest gross incomes accounted for just 9.3 per cent of total goods and services expenditure, while the top 40% of households accounted for some 58 per cent. (ABS 2005b)[9]

An index based on this type of construction is often referred to as a plutocratic index, that is it represents the expenditure pattern of higher income households. Conversely an index that is equally weighted by the number of households is referred to as a democratic index.

Whether or not a plutocratic index is representative of the experience of households as a whole depends upon the degree to which households have homogeneous patterns of consumption, or if they do not, whether price changes are homogeneous across expenditure items.

In general the evidence is that neither of these are the case. Typically, as illustrated in Table 1 lower income households spend more on recurrent housing costs and food, while higher income households spend more on recreation and transport including motor vehicle purchase.

[9] These shares of expenditure potentially underestimate the actual relative levels of spending by high and low income households. It is well established that a proportion of households that report low incomes in household surveys have significantly higher levels of resources.

Table 1 Composition of Household spending on goods and services, by equivalised net disposable income quintile, 2003-04

	Equivalised net disposable income quintile				
	Lowest	2	3	4	Highest
Current housing costs (selected dwelling)	16.1	15.1	15.6	13.8	12.0
Domestic fuel and power	3.7	3.3	2.7	2.3	2.0
Food and non-alcoholic beverages	19.6	20.2	18.9	18.1	16.6
Alcoholic beverages	2.1	2.5	2.7	2.9	3.5
Tobacco products	1.9	2.2	1.8	1.4	1.1
Clothing and footwear	3.7	3.8	3.8	4.7	5.5
Household furnishings and equipment	6.3	6.2	5.9	5.6	6.3
Household services and operation	7.9	6.6	5.9	5.7	5.2
Medical care and health expenses	5.0	4.9	4.4	4.7	4.5
Transport	14.0	15.0	16.2	18.2	17.8
Recreation	10.8	12.0	12.1	12.3	14.1
Personal care	2.0	1.9	1.8	2.0	2.1
Miscellaneous goods and services	6.7	6.3	8.1	8.4	9.3
	100.0	100.0	100.0	100.0	100.0
Total goods and services expenditure ($pw)	342.85	482.58	648.04	851.03	1171.40

Source: ABS 2005b

The distribution of price change

As noted above individual households, and groups of households, may experience price change quite differently to that recorded in a measure of price inflation for the household sector overall. This section reviews some of the research on this. Possible options to address this are canvassed in Section 7.

Previous research

The UK Retail Price Index was analysed by Crawford and Smith (2002) who noted considerable dispersion of actual inflation experiences, and report that "on average over the period from 1976 to 2000, only about one third of households at a point in time faced inflation rates within 1 percentage point of the average rate". The study found, in the UK over this period, the average annual inflation rate generally increased with income. That is, higher income households experienced higher rates of inflation than lower income households. On average the inflation rate for the poorest 10% of households was just under 6.8% while that of the richest 10% was a little over 7.1%. Other analysis undertaken by the Alliance Trust (2007) in the UK suggests that over a two year period to the end of 2006 prices for the lowest income groups rose more rapidly than those in the middle of the income distribution, with these in turn rising more rapidly than prices for higher income households.

A 2008 study by Leicester, O'Dea and Oldfield (2008) from the Institute for Fiscal Studies, using the approach of the UK Retail Price Index found that, although the overall rate of inflation faced by pensioners was not all that different from the population as a whole (an annualised rate of 5.8 per cent compared to 5.9 per cent between 1977 and 2008), there were, at various times considerable differences in the experience of particular groups of pensioners, and between pensioners and non pensioners. Other analysis by these researchers suggests slight differences between income groups, with those in the top decile of the income distribution experiencing an annualised inflation rate of 6.1 per cent compared with 5.7 per cent for the poorest group over the same 21 year period. (IFS 2008)

This pattern of smoothing over time was also seen in US research by Hobijn and Lagakos (2003) who report: "Household specific inflation rates tend to vary substantially around this mean [of price change]… To our surprise we find that individual households that are confronted with high inflation in one year do not generally face high inflation in the subsequent year as well. That is, we do not find much

household specific persistence in inflation disparities … This combination of results leads us to believe that the CPI–U is a reasonable measure of aggregate inflation". This research builds upon earlier work of Michael (1975) who found considerable dispersion in individual inflation rates, although he found there was some persistence of disparities, despite the reduction of the extent of dispersion over longer time periods.

Research undertaken by Murphy and Garvey (2004) in Ireland focused on price changes for low income urban and low income rural households relative to the CPI between 1989 and 2001. Over the initial seven years the index for low income households tracked closely, although on average a little lower, than the CPI. In the second five year period, in part as a consequence of rising urban rents, the price index for low income urban households rose much more rapidly than the CPI, with that of low income rural households moving in line with the CPI. A similar mix of patterns was identified in South Africa (Bhorat and Oosthuizen 2005). In this case the period concluded with a steep rise in the CPI for low income households as a result of a leap in inflation especially in food products.

While this has been less researched in Australia, recent analysis (Nicholas, Ray and Valenzuela 2009) concluded that relative price movements in Australia over the period between 1988 and 2003 were regressive, as well as being higher for renters than non renters.

A subset of analysis of the distribution of price change across households concerns the differences in trends between plutocratic and democratic CPIs, that is the experience of households, or the experience of the household sector. In line with the above results, analysis of the 'plutocratic bias' – the extent to which the index reflects the experience of higher income rather than average households, shows no consistent pattern, although a review by Ley (2002) suggests it is slightly more commonly negative. This implies that prices rose more rapidly for the majority of households than suggested by the CPI although the extent of this was small. In the US the Bureau of Labor Statistics (Kokoski 2003) concluded "The results show that there is little difference between the democratic and plutocratic index values for the period 1987-1997, and that one index need not always exceed the other". A similar result was found for Canada (Brzozwski 2005).

The Harmer Review (2009) reported analysis of a distributional CPI[10] for Australia which concluded that over the decade to June 2008 while a plutocratic index reported a rate of price increase of 2.7 per cent, when an equal weighting was applied to all households, the resultant democratic CPI was 3.1 per cent. In looking at the distribution the estimated CPIs for individual households indicated that a quarter of households experienced a rate price change, based on their consumption pattern at the time of the 2003-04 HES, of less than 2.5 per cent, and a quarter experienced price changes of over 3.5 per cent.

These results, while best seen as being indicative due to the limitations of using the HES data and its limited recall periods, suggest for Australia, over the time studied that:

- The cost of living of most households rose faster than the CPI measure;
- There was a wide dispersion of actual experiences of price rises, depending upon the actual spending patterns of households.

While the existing body of research shows diverse trends across countries, groups and time periods, most of the research identifies the extent to which, at any one time, price change can affect different households differently, with at time the emergence of systematic patterns in this. This clearly establishes the need for greater attention to be paid to this issue in Australia. It is a need that was also

[10] This analysis excluded home purchase costs and the cost of financial services, and hence the data are not directly comparable with the CPI. The Review also noted that the dispersion of outcomes may have been exaggerated because of the nature of the HES where only products purchased within certain recall periods are included, although some attempt was made to minimise the impact of this.

highlighted in the recent *Report of the Commission on the Measurement of Economic Performance and Social Progress* (Stiglitz, Sen and Fitoussi 2009), an extract from which is at Attachment B.

Recommendations on approaches to the development of such distribution measures of price change as part of the suite of ABS price indexes are discussed in Section 7.

2.2.2 Issues associated with the use of a Laspeyres index

The CPI is based upon a Laspeyres index that uses a fixed basket of goods and services. Essentially this approach results in the CPI being a Cost of Goods Index – a COGI rather than a Cost of Living Index (COLI). The reason for this difference is that households respond to changing prices of goods with changing patterns of consumption and hence the effect of any price change on their cost of living is a result of these two factors[11].

The nature of the problems which can arise from this can be seen in the case of the increase in the cost of bananas associated with Cyclone Larry. Between March 2006 and September 2006 the index for fresh fruit increased from 160.2 to 293.4 (an increase of 83.1 per cent) (ABS 2009c). In large part this was due to the strong increase in the price of bananas because of the massively reduced supply due to the destruction of banana plantations[12]. Using the fixed basket of goods approach as an index to measure the impact of price change however assumes that households continued to consume the same quantity of bananas as they did before, despite the fact that this was not possible because of the reduced supply. Hence while the CPI may have reflected the cost of goods over this period it did not reflect the actual change in the cost of living.

In discussing the impact of this on the CPI ABS indicated:

> "The rise in fruit prices was mainly attributable to an increase of approximately 250% in the price of bananas during the June quarter 2006 due to shortages created by Cyclone Larry in March 2006. Prices also rose for citrus fruit, apples, melons and strawberries, in part reflecting increased demand for alternative fruit as consumers looked for a substitute for bananas. The fruit expenditure class contributed 0.79 index points to the change in the All Groups CPI in June quarter 2006 and 0.90 index points to the through the year change.
>
> In calculating the CPI, the ABS does not make any allowance for short-term substitution effects such as those that may have occurred between bananas and other fruit in recent months. The methodology used to construct the CPI is by reference to a 'fixed basket' consisting of goods and services acquired by households. For the current (15th series) CPI, this is the pattern of household expenditure in 2003-04. The methodology holds the composition of this basket fixed from quarter to quarter. While the increase in the price of bananas has contributed to an increase in the CPI in June quarter there are likely to be offsetting falls in the CPI in future quarters as their supply and price return to normal." (ABS 2006)

[11] It should be emphasised that this behaviour is a natural part of individuals and households seeking to maximise their utility, and should not be conceived of as households being forced to change their consumption patterns because of increasing prices. Furthermore, in terms of the construction of a price index it needs to be recognised that the original basket of goods upon which the index is based is nothing more than the actual maximising pattern of expenditure in response to the prices in place at the time the survey is collected and not some 'ídeal' or neutral pattern of consumption.

[12] In 2006 Australian Banana production fell to 105,054 tonnes, compared with 264,583 in the previous year. For the period between mid April 2006 and end September 2006 North Queensland, which provides around 75% of Australian Bananas reported shipping volumes of some 5 to 10 per cent of usual production levels. (ABGC 2010)

In terms of providing an estimate of the change in the cost of living at a particular time the underlying argument – which would appear to be that 'it doesn't matter if it overestimates now since it will correct itself in the future' does not seem to be persuasive.

More curiously while the explanation provided by the ABS reports that the prices of other fruit rose because of consumption substitution, and included the rise in these prices in the Fruit expenditure class CPI, there was no regard given to applying the underlying process of substitution to the weighting.

While this is an extreme, and largely short term, case this issue is serious when there are systematic changes in patterns of demand, in particular where this is in response to price changes. Specifically the structure of the CPI as a COGI leads to an over-estimate of the actual change in the COLI. That is, the CPI as a Laspeyres index, overestimates the increase in the cost of living of the household sector as it fails to take account of the changes in the pattern of consumption.

The extent of this can be estimated by utilising the weights of two consecutive series of the CPI, and the price change over the period, to estimate a Laspeyres Index, and to use the weight of the incoming series to estimate a Paasche Index. From these the Fisher Index can be derived. While this latter is not necessarily a totally unbiased series, it is generally considered to have less compositional bias than the other two methods.

Using these approaches over the period June 2000 to June 2005 as detailed in Attachment A (excluding Deposit and Loan Facilities and Other Financial Services for which a price series is not available) provides an estimate of price increase over the 5 year period of:

- 17.6 per cent using a Laspeyres index;
- 15.1 per cent using a Paasche index; and
- 16.4 per cent using a Fisher index.

On an annualised basis the Fisher index suggests that the rate of price increase was 3.08 per cent and not the 3.30 percent recorded in the Laspeyres index.

While this difference may be relatively small in this case, it clearly highlights the extent to which substitution bias needs to be taken into account. Furthermore this type of overestimate in the CPI as a measure of the cost of living accumulates over time through the chaining together of the individual price series (although each new price series by using a new basket corrects for the extent to which the previous basket has failed to respond to these changes in consumption.) This has implications for the use of the CPI to derive longer term estimates of well being. Using Engel curves to estimate substitution bias in the Australian CPI Barrett and Brzozowski (2010) conclude "Our findings indicate that the Australian CPI overstated the change in the general cost of living between 1975/76 and 2003/04 by 34 percent".

An example of why this can have a marked impact can be seen in social policy research where frequently attention is paid to changes in 'real income'- that is income adjusted for the differing cost of living at different periods – as a measure of social outcomes. This is typically done through the use of the CPI as a deflator. In this type of analysis, especially over some periods which have seen relatively low levels of earnings growth, even quite small differences in the rate of price increase can make appreciable differences in the rate of real income growth and hence in the interpretation of the data[13]. Very clearly because of the focus of the CPI on a COGI rather than a COLI, such an estimate, assuming no other issues

[13] The use of the CPI as a deflator in this type of analysis is fairly universal in Australian analysis, and is a practice used also by the ABS. For example in publications from the Survey of Income and Housing (ABS 2009e) ABS presents tables of the real incomes of households over time using the CPI as the deflator.

with the CPI, will be an underestimate of the real increase in the potential living standards of households.

The Household Final Consumption Expenditure (HFCE) chained index and implicit price deflator

The ABS produce two alternative price indices that can be used to consider the impact of prices of households. These are:

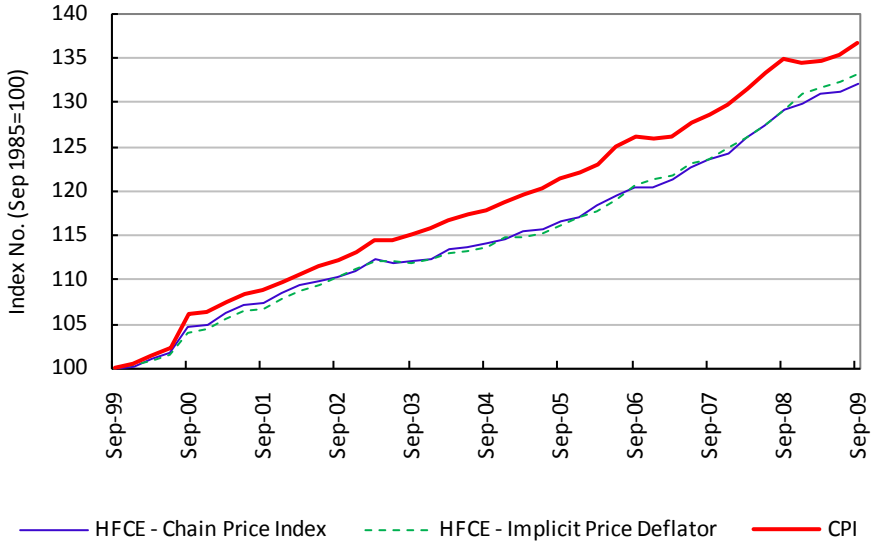
- The Household Final Consumption Expenditure chained index. As with the CPI this is a Laspeyres index, but with an annual re-estimation of the weights;
- The Household Final Consumption Expenditure implicit price deflator. In contrast to both the CPI and the HFCE CI this uses the Paasche formula (end of period weights) with these also being re-estimated annually.

The scope of these two measures differ from the CPI.

- The HFCE adopts a broader concept of the household sector. In addition to households it includes the expenditure of private non-profit institutions (a diverse group of institutions including hospitals, private schools, clubs, and religious and charitable organisations)
- The scope of expenditure included in the HFCE encompasses items not included in the CPI such as spending on gambling and a wider range of financial expenditure including charges associated with stock trading and superannuation as well as households spending overseas.
- The HFCE measures use imputed rent as an estimate of the housing costs for home owners and differentially treats government rebates.

A comparison of the trends in these series is shown in Figure 3. Over the 10 year period to September 2009 prices as measured by the CPI have increased at an annualised rate of 3.2 per cent; as measured by the HFCE implicit price deflator by 2.9 per cent, and the HFCE Chain Price Index by 2.8 per cent.

Figure 1 Comparison of the CPI, the HFCE Chain Price Index and HFCE Implict Price Deflator, September 1999 – September 2009



Source: ABS 2009c, 2009f

It is however difficult to determine the extent to which variations between these measures reflect the methodological issues concerned with index construction (that is the shorter periods between reweighting in the case of the Chain Price Index, or the use of a Paasche index for the Implicit price deflator, as well as the differences in approach to housing costs) or the scope of the measures (the much broader definition of the household sector). Research in New Zealand (Liyange 2007) suggested that in that country, between 1999 and 2006, the measure of HCE-IPD price increase was around 5.9 per cent lower than the CPI, and of this difference 61 per cent could be ascribed to issues of scope and coverage, 10 per cent to the formula effect with an unexplained residual of 19 per cent. These results however are unlikely to be directly transferable to Australia.

While it is possible for analysts to use these alternative indices this is less frequently done for a number of reasons:

- The pre-eminent status ABS provides for the CPI (including, as demonstrated above, by its own use of the series to deflate household incomes);
- The broader definition of the household sector used in the HFCE measures reduces their relative value for many purposes including looking at earnings and household income.
- The limited information available to users on the details of the HFCE measures, including the specific details of series revision;
- A lack of clear comparative information on the extent to which variations in these different series arise from the differences in scope or the differences in methodology; and
- The lack of information for users on the extent to which bias exists within the CPI and hence a lack of understanding of the possible need to consider the relative merits of the alternative measures.

Summary – design issues

Possible actions to address the question of the plutocratic bias of the CPI are discussed in section 7.1 which concerns analytical series. With regard to the impact of substitution bias, while as discussed in the Section 5.1 there may be some benefits from a more frequent reweighting of the CPI, it is unlikely that this will be undertaken frequently enough to overcome the problem of a fixed basket, and does not address the historical CPI series.

Summary

ABS should produce, with the introduction of each new series, an estimate of substitution bias in the previous series – for example by estimating a Fisher Ideal Index – and generate a chained index correcting for this. A long term historical series should also be derived on this basis.

Additional analysis should be published on the relative characteristics of the CPI and national accounts measures including the degree to which differences in the measurement of price change between the HFCE indices and the CPI relate to differences in methodology and scope. The ABS should consider developing versions of these limited to households (and potentially for the non-household element of the broader household sector).

ABS should consider ways in which greater balance can be achieved in its presentation of alternative indexes and in the information available to users to determine the most appropriate.

Where there are specific price events, such as occurred as a consequence of Cyclone Larry where it is clear that the level of consumption of the product has significantly reduced, the ABS should provide an alternative estimate of price change, taking into account the changes in the extent to which the assumption of a fixed basket is clearly unrealistic.

3 Compilation frequency of the CPI

The ABS information paper notes that Australia is one of the few advanced economies that does not have a monthly CPI and specifically asks users for their views on whether or not user needs would be better served by a monthly CPI and whether such a change is warranted on a cost effectiveness basis.

3.1 Is a quarterly CPI adequate?

For most social policy purposes, the perspective which I am reflecting in this submission, a quarterly CPI is adequate. This is particularly true in an economy which is facing relatively low rates of inflation[14].

In making this observation a number of specific issues are noted:

- The question of the timing of the CPI is somewhat different to that of other data required for economic purposes such as labour force data which is derived from household surveys which are subject to considerable, and to a large degree independent, survey error[15].
- The use of the CPI for indexation purposes, in both contract and rate setting of payments, is usually annually or semi-annually.
- The use of CPI as a deflator in the analysis of income data is usually in the context of data which is either identified by the quarter of collection or for a previous financial year.

One argument that has been advanced in favour of moving the CPI onto a monthly basis is that this would facilitate the identification of turning points in the economy. If this is the objective, the issues to be considered go well beyond the actual frequency of the series.

- If the data are to be used to determine turning points it would not be appropriate for the ABS to make corrections to the series other than through retrospective series revision;
- Much greater attention would need to be given to the modelled components of the CPI. This issue is discussed under seasonality in section 7.3; and
- There may be a need to pay further attention to the classification structure of the index given the extent to which this type of 'turning point analysis' may be more focused on sectors rather than commodities.

3.2 Value for money

Given the range of other areas for additional work on the CPI discussed in this submission, the production of a monthly series is considered to be a low priority.

[14] Although basing a decision such as this simply on the basis of current conditions is perhaps less than robust, the experience of recent decades suggest this is not an unreasonable assumption, at least for the medium term.

[15] Because these household surveys are subject to sampling variability with relatively high Relative Standard Errors when used for policy analysis, doubts often exist whether a single monthly result represents a real change, or is just variability. In these circumstances more frequent surveys can be used to improve the interpretation of movements, including turning points. In contrast in the CPI the main sampling variability impacts on the weightings used for the index. Since these are held constant between periods this does not impact in the same manner.

Summary

There is not a compelling case for increasing the frequency of the CPI, especially in a low inflation environment.

Moving to a monthly series would not just involve a more frequent updating of the CPI but would have a range of other implications for the way in which the series is operationalised.

It does not appear to be a value for money change.

4 Evaluation of the deposit and loan facilities index

Because of the methodological decisions taken in the redevelopment of the CPI following the 13th Series Review of the CPI, the question of the deposit and loans facility is closely associated with the question of the treatment of owner occupied housing and hence both these issues are considered here. This approach hence extends to the generality of the underlying factor, rather than simply focussing on the two specific questions posed by ABS[16].

In effect the current treatment of these components in the CPI can be characterised as:

- As most house purchases involve a transaction between two households there is no net impact and account needs only to be taken of additional housing stock consumed by the household sector. As land is a capital item which is not consumed it is excluded.
- Since household borrowing and lending is largely net across households it is only the cost of the financial services which needs to be incorporated.

4.1 Context – Home purchase in the CPI

Over time the treatment of homeownership in the CPI has varied (Woolford 2005).

- Prior to 1960 only rental housing rents were included in the CPI;
- In 1960 in addition to local government rates, repairs, maintenance and insurance, the cost of home purchase and alterations was included (but not interest rates);
- In 1986 house purchase costs were removed and replaced with mortgage interest costs; and
- In 1997 mortgage interest costs were removed and replaced with the net cost of additional housing stock (excluding land but including alterations and additions) and a net measure of financial services over all.

These changes in practice need to be seen in the context of both the debate over the purpose of the CPI and the complexity of conceptual issues around how best to measure price change for homeowners. This complexity is identified in the Consumer Price Manual. This also emphasises the linkage between decisions on the treatment of the homeownership debate on the purpose of the CPI. The manual states:

> "10.4 The treatment of owner-occupied housing in consumer price indices (CPIs) is arguably the most difficult issue faced by CPI compilers. Depending on the proportion of the reference population that are owner-occupiers, the alternative conceptual treatments can have a

[16] In considering the presentation of this aspect of the CPI in the Information Paper I would also note that the short quotation from the ILO Consumer Price Manual on the treatment of nominal interest is in fact part of a much more nuanced discussion "It is very difficult to disentangle the various components of interest. It may be practically impossible to make realistic and reliable estimates of the implicit service charges embodied in most interest payments. Moreover, for CPI purposes it is necessary to estimate not only the values of the service charges but changes in the prices of the services over time. Given the complexity of interest flows and the fact that the different flows need to be treated differently, there seems to be little justification for including payments of nominal interest in a CPI, especially in inflationary conditions."(ILO 2004)

Furthermore, despite this statement, the later chapter of the Manual has an extensive discussion on how nominal interest rates are best included in the payments approach to housing costs.

The situation is thus much less clear cut than the Information Paper implies.

significant impact on the CPI, affecting both weights and, at least, short-term measures of price change.

10.5 Ideally, the approach chosen should align with the conceptual basis that best satisfies the principal purpose of the CPI. However, the data requirements for some (or even all) of these options may be such that it is not feasible to adopt the preferred treatment. Equally important, it may be difficult to identify a single principal purpose for the CPI. In particular, the dual use of CPIs as both macroeconomic indicators and also for indexation purposes can lead to clear tensions in designing an appropriate treatment for owner-occupied housing costs. In these circumstances, it may be necessary to adopt a treatment that is not entirely consistent with the approach adopted for other items in the CPI. In some countries, the difficulties in resolving such tensions have led to the omission of owner-occupied housing from the CPI altogether or the publication of more than one index." (ILO 2004)

Given earlier discussion on the purpose of the CPI as a COLI, there is a very strong argument for the development of an index which utilises a use or a payments approach. Under the first, the cost of owner- occupied housing could be measured either by an imputed rental component, under the second, by the pre 13th Series methodology.

4.2 Context – Financial services

The difficulties encountered in developing this component of the CPI discussed in the ABS Information Paper are again a focus of discussion in the ILO manual:

"10.117 The construction of reliable, comprehensive price indices for financial services in CPIs is in its infancy. Given the increasing use of financial services by households, however, national statistical agencies are coming under pressure to account for at least some financial services in their CPIs. There is a particularly strong demand for CPIs to include those fees and charges faced by households in respect of deposit and loan accounts held with financial institutions.

10.118 The construction of price indices for financial services is inherently difficult, as there is no unanimous view about which financial services ought to be included in the CPI, or indeed about precisely how they should be measured." (ILO 2004)

This statement also emphasises that the work being undertaken by ABS on this involves as much pioneering an approach in a technical sense as well as conceptually.

4.3 Limitations of the current approach

In large part the specific questions raised in the Information Paper address some of the detail of the Deposit and Loan facility rather than the more significant underlying issues and the extent to which the item is being successfully implemented. Clearly as evidenced by the revisions made to the series there have been considerable issues with the implementation. This information needs to be provided much more transparently.

More generally there are issues that relate to the underlying conceptualisation of the methods including the implication of assumptions about the net impact on households. These questions which can clearly be seen in the ILO Consumer Price Manual, tend to be absent in the information paper.

In the case of the existing treatment of housing:

- As the CPI seeks to be a measure of prices and price change it is difficult to see the justification for the underlying assumption that since housing transactions take place between households they can simply be excluded from the measurement of price. Such an approach confuses the concept of income and expenditure. That is, while some households may gain a quantity of capital or income

from the sale, others incur an expenditure. Since the CPI is concerned with the measurement of the prices this is what should be recorded. That is the CPI should address consumption and expenditure and trends in income and wealth should be separately measured.

- Once price indexes are considered for population sub-groups the net argument falls over completely, in that the transactions are no longer between the households within the population and hence the net approach can no longer be justified.
  - This is a strong argument for the continued use of an outlays approach in the Analytical Living Cost Indexes and other price indexes for subgroups.

A similar set of questions arise in the treatment of the Deposit and Loans Facilities. Furthermore, given the extent to which loan facilities are underpinned by overseas capital flows, there is a clear disequilibrium between the interest paid and interest received which goes well beyond the interest rate margin.

These treatments of both housing and financial services have implications for the use of the CPI as a deflator for income analysis. In most income series interest income is included within household income with the corresponding assumption that interest payable forms part of household spending. The use of a deflator which does not take this into account will clearly be misleading. Equally with the ABS now producing household income estimates which include the value of imputed rent as a broader measure of household income, there is a need for an appropriate deflator which takes this into account.

Summary

The specific questions concerning the evaluation of the deposit and loan facilities index cannot be separated from the wider question on the treatment of owner occupied housing and the more fundamental question of the purpose of the CPI.

In line with discussions elsewhere in this submission I would address these in terms of the need to focus the CPI on being a COLI and the adoption of an acquisitions approach, or potentially for owner occupied housing a use approach.

5 Maintaining the relevance of the CPI

This section considers the questions raised in the Information Paper regarding the frequency of updating the expenditure weights and quality adjustment.

While it does not address the specific issues raised in the discussion on continuous improvement and the measurement of services, I would note that one aspect of the latter, that of bundling, has some parallels with the discussion of quality adjustment. In the case of bundled services it is important to maintain a focus on the overall utility derived from these by the individual, and not assuming that this equals the sum of the individual items included in the bundle. In many cases people face a choice between a series of bundles, none of which specifically represent the combination that they seek. In such cases the inclusion of components that they do not consider to be of value (but are accepted to obtain other components) do not necessarily represent an improved quality of good.

5.1 Frequency of updating expenditure weights

Given the discussion in Section 2.2.2 of this submission on the problems which arise from the current use of a Laspeyres index for the CPI, I consider there is a strong argument in favour of the more regular revision of the expenditure weights if the CPI is to operate as a COLI rather than a COGI, in particular in limiting the extent to which the CPI is distorted by substitution bias.

Options for increasing the frequency of the updating of the weights fall into two groups:

- Those which involve the HES:
  - The frequency at which the HES is conducted – discussed at 5.1.1; and
  - The time taken to process the HES and derive expenditure weights.
- Utilising other data sources on changes in the composition of consumption to revise the weights – that is moving towards an Implicit Price Deflator this is discussed at 5.1.2.

While a reduction in the time taken to process the HES and derive and implement new weights does not impact on the actual frequency of reweighting, it does improve the relevance of the CPI by making it more contemporary. As it currently stands, while the HES was effectively conducted between July 2009 and June 2010, updated weights for the CPI will not be implemented until the September quarter 2011 – a 15 month lag from the completion of the survey and 27 months after the commencement of data collection. In broad terms this represents an average age of the basket data of 21 months by the time it is used for the CPI, and at the end of the CPI series, on the current timing of the HES, the data is almost 8 years old.

Summary

As part of the Review the ABS should examine, including using international benchmarking, the issue of the lag between the completion of the HES data collection and the preparation of the CPI weights.

5.1.1 Changes to the frequency of HES

In discussion the ABS notes that the ILO recommends a minimum of a 5 year cycle for the reweighting of the CPI and that some countries, including New Zealand, operate on a three yearly cycle. In considering the options for Australia it should be noted that a balance needs to be struck between:

- The cost of conducting the HES

- The need to maintain the HES as a robust survey which goes beyond simply providing the raw weights for the CPI (see Section 8.4), and indeed the benefits that could be obtained from the expansion of the survey;
- Maintaining the relationship between the HES and the Household Income Survey.

This would suggest that if there is a change to the frequency of updating expenditure weights, moving the HES onto a 4 yearly cycle may be appropriate, although there would be a clear need for this additional survey load to be fully funded and not to be at the expense of other surveys.[17]

5.1.2 Use of alternative sources of data for reweighting the CPI

As a matter of principle the use of alternative sources of data for adjusting the weights in the CPI in order to reflect changing consumption patterns has much to commend it. There are also increasing opportunities for this data to be relatively easily acquired and analysed given the improving check out and stock control systems adopted by major and minor retailers, as well as service outlets and the opportunities to use this data in an electronic format.

There are though limitations inherent in the 'whole of household sector expenditure' information that this type of data collection involves. While it is relatively easy to use this information for adjustments to the pattern of consumption across all households, it offers much less for the updating of CPI weights for population subgroups.

The capacity of users to comment on this option is restricted by the limited information available on what data ABS has at its disposal and the extent to which adjustments to weights can be taken on this. Hence while the ABS presents in paragraph 5.6 a discussion of 'between reweighting' changes to weights for items below the expenditure class, information on these are not available to users as a whole.

Summary

There is a good case to increase the frequency of the HES to every four years. Such a change would however have to be fully funded and not at the expense of the scope of the HES or other household surveys. It is important that the HES cycle continues to be integrated with that of the Survey of Income and Housing.

ABS should examine the opportunities of using external sources of data to develop an IPD type approach to the CPI. As reweighting of population subgroups is difficult to achieve between the HES, it would be important to also maintain a comparable series.

5.2 Quality adjustment

The discussion paper states in paragraph 5.13 "The quality adjustment process is sometimes subject to criticism. The argument against the use of pricing to constant quality is that it reduces some price movements. Hence, the quality treatment of some items in the CPI does not reflect common perceptions of consumer price changes that can be seen on shelf prices".

The presentation of this observation in terms of 'common perceptions'[18] is misleading and appears to be an attempt to downplay the issue, rather than seeking to address the more fundamental issues that

[17] Although there is a good case for Australia to conduct an annual survey of income, as it has in the past, a decision which would also make this question of the timing of HES more flexible, this is beyond the remit of this Review.

have been raised in the debate on how quality change should be taken into account. It also is reflective of the focus of the CPI as a narrow COGI and the extent to which this varies from a COLI.

The perspective in the statement that "The argument against the use of pricing to constant quality is that it reduces some price movements" is not correct, and again it is hard to see the rationale for the ABS presenting it in this way. Rather the argument is concerned about the meaning of the CPI as a measure of the cost of living.

Specifically two conceptual issues are raised in the quality adjustment debate:

- The question of the utility[19] provided by changes in quality; and
- Whether or not consumers can actually purchase such quality adjusted goods and services, and hence whether the CPI relates simply to a theoretical cost of a good, rather than whether or not a good of this nature can be obtained[20].

In addition there are questions as the processes which are used to make quality adjustments. These issues are considered in the following three examples:

Computers

Computers are part of the CPI expenditure class index "Audio, visual and computing equipment". As illustrated in Figure 2, this component has shown a marked fall over time. While between September 1980 and December 2009 the All Groups CPI has increased by 254 per cent (the index number having increased from 47.8 to 169.5), this particular expenditure class index has fallen by 86.2 per cent (with the index number dropping from 121.8 to 16.9). Put another way, real prices for these items is around 3.9% of what they were thirty years ago. Even over the past decade the fall has been marked – with current real prices just over 20 per cent of the level they were in December 1999.

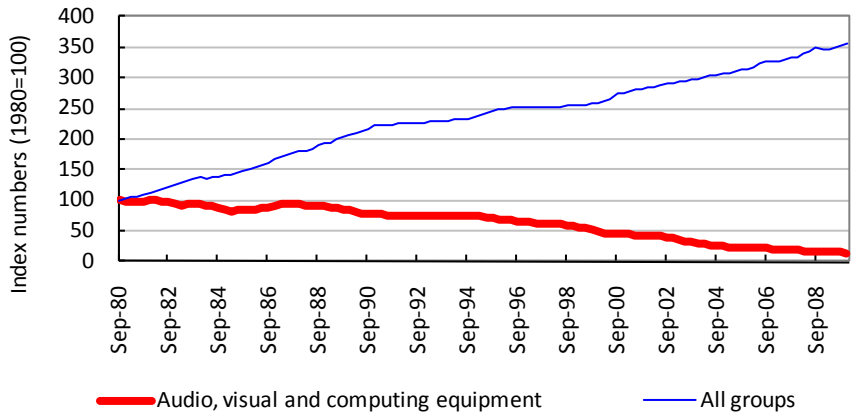
[18] The main argument on the issue of perceptions is that suggested by Bradbury that the prices of what he describes as 'regular' products, those most frequently purchased by households, have risen more rapidly than those products which are purchased less regularly. (Bradbury 2008). The focus of this work is not on the issue of whether policies on the construction of the CPI act to 'reduce price movements' but rather it seeks to provide an explanation as to why perceptions of price change may not coincide with movements in the CPI.

[19] While in general the construction of the CPI ignores the question of utility, one exception applies where there are changes in government regulations "9.18 One important area of quality change is that arising from governmental regulations. It is ABS practice that, unless these changes clearly affect the level of household utility, they are not treated as quality changes. An example of this practice is that any higher price for motor vehicles occasioned by mandatory pollution requirements is regarded as a price increase, not a quality improvement." (ABS 2009a)

This approach does not however apply universally, and it is unclear whether it is actually applied in areas such as obligatory safety standards (where these may have been offered as options) and housing where building and urban development regulations have had a marked impact on the products produced, and available to households.

[20] This is particularly relevant where consumption of a product is generally unitary rather than being on a quantity spectrum. Hence the reference to this issue in particular with products such as housing, motor vehicles and computers where the decision to consume at the household level is most frequently binary and not continuous.

Figure 2 Index numbers 'Audio, visual and computing equipment' and 'All Groups', September 1980 to December 2009



Source: ABS 2009c

Note Index has been rebased to be 100 in September 1980.

The price of computers is calculated by ABS using a double imputation model which incorporates both matched pricing and a hedonic component based upon computer specifications such as quantity of RAM etc. This is discussed in an ABS information paper (ABS 2005) and Liaw and Lane (2009).

While the actual contribution of the cost of computers to the 'Audio, visual and computing equipment' expenditure class of the CPI is not revealed in ABS publications, nor is the sub-component index, it would be anticipated that it is not an inconsiderable element and that its price fall would be greater than the index overall.

While is true that the cost of computing components have fallen dramatically, and this is reflected in the index, this alone does not address the impact on the cost of living. A certain quantum of RAM or number of gigabytes of storage is not the only factor which determines the value of a computer in terms of a constant product.

Rather a computer's quality is more usually judged by an individual in the context of what they can do with it. This is determined by both the hardware and the software. At the same time the cost of individual hardware components have fallen – or the capacity of processors etc have improved, the demands of software have increased. This is illustrated in the case of basic operating systems in Table 2.

Taken from a user perspective the question of how to value computers in terms of their cost of living is thus a question of utility. How much does it cost an individual to achieve the same level of utility. That is, a person who wishes to purchase a computer to be able to undertake word processing will consider a constant quality product to be a basic computer with appropriate 'standard' software (for example the current versions of the windows operating system and Microsoft Office). While it can be argued that this approach ignores the greater capacity of successive operating systems and enhancements to the word processor software, the question which needs to be answered in this context is how much does the individual value these changes. An 'improved' product which contains capabilities which are not used by a person, or are considered as being marginal, do little to enhance individual well-being, and a price index which does not take this into account does not reflect the way in which the person's cost of

living has changed. This is more so, as, in most cases, they have little option but to purchase a package of hardware and software from what is currently available on the market[21].

Table 2 Comparison of basic computer system configuration required for Windows 3 and Windows 7

	Windows 3 (1990)	Windows 7 (2009)	Magnitude of increase
Processor	8086/8088 processor (16-bit 4-10 MHz) or better	1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor	
Memory	640K conventional memory, though 1 MB of extended memory recommended.	1 gigabyte (GB) RAM (32-bit) or 2 GB RAM (64-bit)	1,562 times
Hard disk	6-7MB of free space	16 GB available hard disk space (32-bit) or 20 GB (64-bit)	2,667 times
Video capacity	CGA/EGA/VGA/Hercules/8514/A graphics and an appropriate and compatible monitor	DirectX 9 graphics device with WDDM 1.0 or higher driver	

Source: Microsoft 2005 and 2010

In terms of index construction this would lead to considerations such as:

- Pricing components on the basis of product capacity, ie basic entry level computer, gaming computer, etc; rather than on the basis of the cost of RAM and processors;
- Developing more sophisticated approaches to identifying the relationship between apparent improvements if software etc and the actual increase in utility which individuals derive.[22]

Housing - Rents

The Information Paper discusses, in paragraph 5.14 the fact, highlighted in the Report of the Harmer Pension Review, that alternative measures of market rent have grown more rapidly than the CPI rental component. Specifically the report indicated: "While the CPI rental component increased by 22.9 per cent between December 1994 and December 2005, the average rent paid by private tenants, as surveyed in the ABS Survey of Income and Housing over the same period, increased by 41.2 per cent" (Harmer 2009)

Comparisons between the CPI rental component and private rents can also be made using data collected by state governments from rental bond boards. Such comparisons are made in Figure 5 for Sydney and Figure 6 for Melbourne. In both cases the rent indices from bond lodgements have increased considerably faster than that of the CPI component.

- In Sydney, between March 1990 and December 2009 the CPI element for rent increased by 83.6 per cent, an annualised increase of 3.1 per cent. In contrast an index constructed by equally weighting

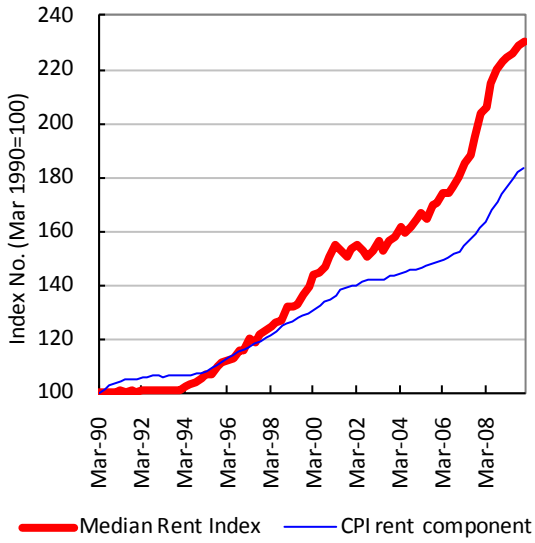
[21] It is noted that there are options available such as open source software etc. However in large part these are not the usual items consumed by the population.

[22] For example it might be considered that the extent to which people upgrade their software upon the release of a new product, relative to the proportion of people who merely adopt the new software upon the purchase of a new computer gives an indication of the value that the community places on these upgrades.

the median rent for 1, 2 and 3 bedroom properties based on new bond lodgements, increased by 130.7 per cent, an annualised rate of growth of 4.3 per cent. The difference is even more marked over the last decade with this median rent index growing by 5.2 per cent per annum, and the CPI element at 3.6 per cent.

- For Melbourne in the decade to December 2009 the State's Metropolitan Rent Index increased by 77.9 per cent, an annual rate of increase of 5.9 per cent, compared to an increase of just 35.9 per cent in the CPI element for that city – an annualised rate of 3.1 per cent.

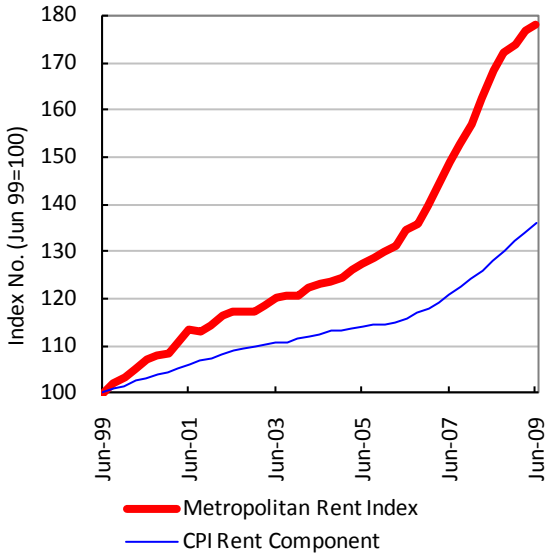
Figure 3 Sydney, Median rent index and CPI rent component, March 1990 to December 2009



Source: NSW DHS 2009, ABS 2009c

Note Median Rent Index is an index constructed by equal weighting the median rents of 1, 2 and 3 bedroom dwellings (both flats and houses) for the Sydney Statistical Division.

Figure 4 Melbourne, Metropolitan Rent Index and CPI rent component, June 1999 to June 2009



Source: DHSV 2009, ABS 2009c

There are a range of possible reasons for these differences:

- The index based upon rental bonds is a leading index and does not reflect the stock of rents. (Although this is less of an issue over a longer term, and also does not explain the difference between the ABS survey data, which does cover all stock, and the CPI, that was identified by Harmer.) Alternatively it could be that the bond data is disproportionately composed of a small market segment with high turnover.
- The rental component of the CPI includes public housing and other non-market rent. However it is unlikely that these sectors are large enough to explain the differences[23].
- There are changes in the quality of the housing stock which are discounted in the ABS constant quality index. If this is the case, then the data suggests that the quality of the complete stock of rental housing is improving by some 1 to 2 per cent per annum.

[23] A further issue is that the private rent is estimated on a net basis, after account is taken of the payment of Rent Assistance which is considered to be a subsidy. Again the impact of this is likely to be relatively low.

If the last of these interpretations is correct then these differences need to be considered from the perspective of a Cost of Living Index. If the composition of housing stock is changing to this extent then households have only a limited, and indeed reducing opportunity to obtain a 'constant quality stock' but rather have to buy into the improved stock mix which is currently available on the market. As with the case of computers, a central question is whether they gain utility from the apparent improvement of stock.

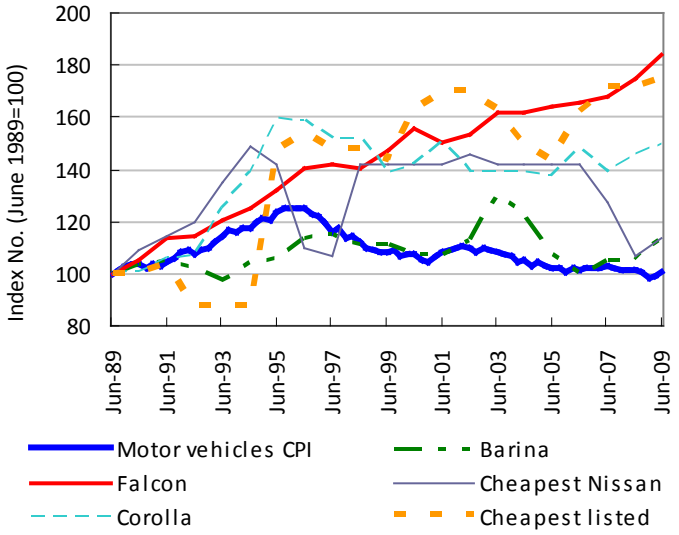
In addressing this question attention needs also to be given the impact of building regulations which may limit the capacity of the market to provide stock of a constant quality[24] and the extent to which particular locations may gain a land price gradient premium with an expansion of an urban area, with no actual change in the absolute amenity of the location.

Looking at a Cost of Living Index the question is what does it cost a household to actually achieve housing to meet a set of specific needs. Such a concept is not reflected in the CPI given the focus on a 'constant quality' which disregards the question of whether or not such a product is actually available in sufficient quantities to satisfy demand.

Motor vehicles

A similar set of issues arise with the price of motor vehicles. Figure 5 shows the relationship between the price of new vehicles and the expenditure class CPI for motor vehicles.

Figure 5 Expenditure class index for motor vehicles, compared with trends in new vehicle prices[25], 1989 to 2009



Source NRMA various, ABS 2009c

Data for 5 different vehicles are shown on the chart along with the CPI component. While the data shows that the price of the (cheapest listed model) Ford Falcon and Corolla have increased substantially

[24] For example many low cost housing developments – such as 'six packs' of flats are no longer able to be built in the Sydney market. This type of housing hence represents a decreasing proportion of the available stock.

[25] Data on new car prices is taken from vehicle listings In the NRMA Journal – The Open Road. Generally the data are for June of each year, although in some years data was not published for that month and in these cases the closest month to June was selected.

over the period, as has the cheapest vehicle listed, less change is seen for the 'cheapest Nissan' and for the Holden Barina.

Very obviously over the period there has been considerable change in the features of the vehicles, and indeed in some cases, while the model name has been maintained, the nature of the vehicle marketed under the name has substantially changed. In addition, in some series such as the cheapest vehicle and cheapest Nissan there have been different models in the market at particular times.

The purpose of the data is however not to go into detailed argument – but rather to again raise the question of the need for at least one measure of the CPI to reflect, in terms of a COL the cost of available commodities, and not theoretical constructs which may not be available in the market place.

The extent to which quality adjustment is responsible for these discrepancies is difficult to assess and few specific details are available in ABS publications. The CPI ABS "Concepts, Sources and Methods" publication indicates:

> "Quality adjustment
>
> 8.91 Whenever any specification change is made to a vehicle that affects its motoring performance, economy, comfort, safety, or durability, an adjustment should be made to the car's reported price. In practice, these quality adjustments are made at the time that new models are released.
>
> 8.92 Quality adjustments for motor vehicles are based on consumer utility and measures are derived from a variety of sources, including:
>
> - Industry conducted market research to determine consumers' perceived values for new accessories or improved feature; and
> - Price lists for options which may in future be offered as standard accessories.
>
> 8.93 Consistency of adjustment practices is maintained across vehicles and over time, but allowance is made for changing community perceptions of utility." (ABS 2009d)

Again there is considerable scope for ABS to publish much more information on the adjustments made. For example the 'option price' approach, under which the inclusion of previous options as standard features is priced on the basis of the previous cost of these options, has considerable weaknesses. It ignores the extent to which such options (including differences between models) are mechanisms for product differentiation, and the economies of scale which result from standard features. Without information on the extent to which this approach is used, it is difficult to consider whether this factor is an issue that needs more consideration.

Summary – quality adjustment

The above discussion highlights some of the issues with the current quality adjustment processes undertaken by the ABS. It is emphasised that these are examples of the issues and not an attempt to comprehensively address the range of items for which such adjustments are made.

In general it is considered that the quality adjustment processes adopted by ABS result in the CPI underestimating the actual increases in the cost of achieving a constant standard of living. It is however not possible, without detailed access to analysis of the data collected by ABS to estimate the extent of this.

Summary

In line with producing a CPI which is a measure of change in the cost of living that the ABS:

- Revise the approach to quality adjustment to take account of the actual utility consumers achieve from changes in product 'quality'; and also consider an approach which reflects the extent to which products actually exist in the market place for consumers to purchase
- Provide more public information on the adjustment process including sub-expenditure class indexes and comparisons of retail price indexes of particular products
- Utilise data collected for the CPI to develop and publish additional indexes – akin to retail price indices for 'standard products' in particular in the areas of consumer electronics, motor vehicles and housing.

6 Commodity Classification

I have no significant comment on this other than to emphasise the importance of ensuring that series can be adequately linked through the Household Expenditure Classification and that ABS produce appropriate concordances that effectively allow the use of detailed HES data and the lower level CPI aggregates.

As identified in Section 3.1 for some analysis a sectoral approach may be more appropriate. However, as in the case of the tradable/non-tradable classification, this may be able to be constructed from the existing expenditure class data.

7 Analytical series

The Information Paper identifies a range of current analytical series produced by ABS and seeks comments on the usefulness of these, and of the Average Retail Price series and the possible demand for a seasonally adjusted CPI.

In addition I would raise:

- The need for additional analytical series for other population subgroups, and distributions of price change;
- Analytical series which adopt different approaches to the construction of the index; and
- The importance of providing linking series which permit users to better understand the differences between analytical series where these apply to specific populations and adopt different methodologies and the headline CPI.

The specific issues of spatial indices and analytical indices with respect to government subsidies are discussed in Sections 8.1 and 8.2 respectively

7.1 Analytical series

While there are some cross-overs between types of analytical series, for convenience these are discussed in three groups: Component specific (such as tradable goods); sub-populations (such as the ALCI) and different approaches to the CPI.

7.1.1 Component specific

These are series such as what are termed 'exclusion based measures', and split series such as tradable and non tradables, and the various RBA measures (although it is noted that these do involve at times some alternative construction).

In general these series should all be maintained, although there may be questions as to whether or not they all need to appear in the 6401.0 publication or simply need to be released as electronic publications.

7.1.2 For sub-populations

The main sub-population indexes are the Analytical Living Cost Indexes, although it might be appropriate to also include the individual capital city indexes in this grouping.

Issues with existing sub-population analytical series

The current series of Analytical Living Cost Indexes are a very useful product, as is the publication of the additional component price index data (Indexes for Mortgage Interest, Consumer Credit and Gross Insurance) which are used to construct these series that are based on an acquisitions approach.

One limitation however in using these series is the extent to which users cannot determine whether the differences between the analytical series and the CPI are a result of the differences in methodology, or the different populations and the specific expenditure weights used for these. A useful addition would

therefore be a compilation of the equivalent to the All Capitals CPI utilising the same methodology as the ALCI. This would be a relatively easy task to undertake.

Scope for additional analytical series

In this submission the need for a range of additional sub-population analytical series has been identified. These would include:

- Separate indexes for home purchasers, renters and owners.
- Distributional analytical indexes, including a democratic index, and across the income distribution – say for households classified by decile or quintile of equivalised disposable income.
- Separate indexes for families with dependent children.

In each of these cases the derivation of the series should be relatively simple given the data collection already undertaken for the CPI including the HES[26] and the ease which each of these household types can be relatively simply identified. In each of these cases there would appear to be a relatively large sample size.

In addition the ABS should construct a democratic CPI to complement the plutocratic construction of the main CPI series.

7.1.3 Alternative constructions

Discussion in Section 2 highlighted the problematic nature of seeking to produce a single CPI which was appropriate for the diverse set of use of a price index, and of taking decisions on the appropriate methodology for an index.

Under these circumstances, notwithstanding the ABS view of the problems of having 'competing measures', it seems far more sensible to accept this diversity and respond to it by producing a series of valid approaches and allowing users to take the decision on the approach they consider most appropriate, rather than imposing a single measure upon them[27].

This could include:

- Measures that incorporate both a COGI and a COLI approach, and acquisitions and outlays;
- Alternatives to the use of a fixed basket of goods;
- Indexes that differentially treat government taxes and subsidies.

[26] This process will be facilitated by the research already being undertaken on the pattern of use of different retail outlets for population sub groups.

[27] For example both Treasury and the RBA have in the past generated their own series of 'underlying inflation' and the ABS have included RBA measures as analytical series. It is difficult to see that any of these processes resulted in particularly adverse results in terms of competing measures.

Summary

The existing range of analytical indexes are a useful set of tools and should be expanded. In particular:

- To provide a link series between the series and the CPI (for example an ALCI for the same population covered by the CPI)
- Additional series are needed covering key family types, housing tenure status and income levels
- A democratic CPI should be constructed
- Depending upon the decision on the main purpose, indexes representing different approaches; and
- Series excluding the impact of government subsidies and charges

7.2 Average retail price data

It is likely that the real value of this series is in the one form that ABS does not provide it, that is as a long term time series of the price of a particular range of commodities.

As a by-product of the CPI collection process it should be possible to construct a more comprehensive database of such prices covering a wider range of commodities, with appropriate matching links in those cases where product characteristics change. Such a public database would be a useful tool for a range of research and other purposes.

Summary

The collection of retail price data should be expanded and produced as a time series with appropriate link series where products change.

7.3 Seasonal adjustment

In large part the answer to this question is one of pragmatics. If there is strong seasonality in the CPI there may be merit in issuing a seasonally adjusted series. This general approach though needs some balance concerning the additional effort required, relative to other priorities, and a question on the extent to which some of the seasonality is a result of the actual construction of the CPI (see discussion in Section 8.2). Further considerations include:

- The degree to which other analysis undertaken, at that time concluded: “seasonal and irregular contributions to the CPI were small, each being about 1% of the original series” (Zarb 1991 cited in ABS 1997).
- The current use of seasonal adjustment in analytical series including the RBA measures Weighted median and Trimmed mean. [28]
- The capacity of individual users to seasonally adjust the series. (This is also related to the level of data made available by the ABS which would enable this to be done.)

Summary

The initial steps to considering the need for a seasonally adjusted series should be to establish the extent to which there is identifiable seasonality, and the contribution made to this by approaches adopted by the ABS in the compilation of the CPI.

[28] In calculating these series the ABS estimates quarterly price changes on a seasonally adjusted basis for those components identified as having a seasonal pattern.

8 Other issues

Chapter 8 of the Information Paper is primarily concerned with the question of the development of spatial indexes. In addition to addressing this, given the encompassing title, this section considers three other matters:

- The treatment of government subsidies;
- The ABS analytical and publication program; and
- The Household Expenditure Survey.

8.1 Spatial indexes

The proposal in the discussion paper for spatial indexes is primarily directed at suggesting the introduction of Spatial Price Indexes (SPI) with the objective of providing information on relative price levels in different locations.

There are two criteria I would suggest form the basis of decisions on whether or not spatial indexes of the CPI should be created:

- The extent to which accurate spatial weights can be created in order to price the actual consumption patterns of households in these locations; and
- What actual use these indexes would have.

From the discussion it would appear that ABS propose to ignore the first of these issues, with its primary concern simply being the regional collection on prices which would then be applied to a common basket of goods.

This is a totally atheoretical approach and contradicts the wealth of data from the HES which shows there are marked differences in consumption patterns in different locations. At its crudest it ignores the impact of different geographic locations on consumption, such as the need for heating, or the actual availability of particular services such as transport. In economic terms it ignores the extent to which local patterns of consumption will be affected by the different relative pricing of products, and the degree to which individuals make trade-offs between locational amenity and opportunities and expenditure on other goods and services.

In effect without an underlying basket representative of local expenditure, any spatial CPI and even more so in the case of the spatial costing of a basket of goods for the purposes of comparison across locations, is a totally arbitrary and artificial concept rather than a substantive and valid statistical measure[29] of relative prices.

The second question concerns the use of such a measure. It is difficult to see any credible application. While very obviously some people might seek to use such indexes to claim that one location is 'more expensive' than another, such an interpretation is simply not valid as it ignores the actual pattern of consumption appropriate to the location (which, as noted above, can vary in many different ways, such as purchasing frozen or canned, rather than fresh vegetables in areas where transport and storage of perishable products is problematic), or variations in power usage according to whether or not there is a

[29] In contrast the State Capital City CPIs use city specific weighting patterns derived from the HES which reflect the actual pattern of consumption in that city.

need for heating or cooling. In some cases it would involve an index which had weights for services such as public transport which may not be available in the location, or average levels of fuel consumption totally at odds with the circumstance of the location.

While an obvious extension of these claims would be that incomes should reflect variances in such costs, it is difficult to see this being seriously entertained:

- Given the inadequacies of the approach the indexes would be difficult to take seriously;
- In the case of transfer payments there is a well established tradition of individuals, across Australia, being paid at the same rate and then having considerable[30] flexibility to choose where they wish to live, rather than either being penalised or rewarded for their decision by differing rates of payment.
- To the extent market incomes are influenced by location the primary driver tends to be the supply and demand of labour in the location, with any locational premium being driven by a need to attract or maintain labour to locations, rather than the cost of goods per se[31].
- Spatial mobility is an important component of a flexible labour market and is one of the processes central to an efficient economy. Part of this process is that individuals and firms take decisions on a range of trade-offs, including the cost of particular goods and services in locations. Interventions which have the result of distorting these processes are likely to have a less than optimal result.

Finally, given the range of other priorities, it is difficult to see any strong justification for allocating resources to the development of spatial measures relative to other priorities[32], particularly when what is proposed as some form of pseudo index which may bear little resemblance to location specific consumption. Indeed an index based on a common basket may be highly misleading and be very poor statistical practice, this is also reflected in the Stiglitz, Sen and Fittousi approach to subgroup indices which emphasises the need for these to be based on "actual" consumption. To undertake these indexes properly would have very high costs, including what would be a massive expansion of the HES sample to provide regionally based weights.

Summary

The concept of a constant weighted spatial index of relative price levels has no validity on either empirical or theoretical grounds.

It is difficult to see in what way such indexes could contribute to better policy making.

8.2 Treatment of government subsidies and taxes

Where government charges or subsidies are directly associated with the consumption of a good or service, account of these is taken in the construction of the CPI. Some of the areas where this has an impact include:

- Rental housing where government rebates in the public rental sector and Rent Assistance in the private rental sector are both included as offsets to the cost of housing.

[30] But not complete flexibility as there are restrictions, for example in Newstart, which limit the extent to which people can deliberately move to areas of higher unemployment.

[31] While an employer may be willing to pay an additional premium for people to work in high cost locations with little amenity and where people may otherwise be reluctant to move, the impact of the cost of particular products is less likely to be reflected in a high amenity area which is seen as being a particularly attractive place to live.

[32] One more modest option would be for an expansion of the publication of data on average retail prices across a much larger range of locations. This would clearly allow ABS to provide some information for those users who have an interest in this type of regional data, without however engaging in poor statistical practices to provide it.

- Childcare where parents with children in approved child care centres are eligible to claim a Child Care Benefit (CCB) based on income as well as the Child Care Tax Rebate (CCTR). As a result the price of child care in the CPI is equal to the gross fee payable by the parents, less the amount of CCB and CCTR that they receive.
- The Pharmaceutical Benefits Scheme (PBS) safety net and Medicare benefits.

In terms of measuring the cost of goods this approach can be considered as reasonable. It does however raise some issues:

- It ignores subsidies which do not directly impact on the prices recorded for CPI purposes, hence a wide range of tax offsets in areas such as medical expenses and education, while effectively tied to the consumption of particular goods and services, are not recorded.
- If the way in which subsidies are provided changes this can have a considerable impact, despite having quite marginal impacts on actual levels of well being.
- In some cases subsidies – such as Rent Assistance are commonly included as income in the measurement of household income in income surveys and hence when real incomes are estimated they enter into both sides of the calculation.
- The way in which the subsidies operate and are modelled introduces considerable apparent seasonality into some components of the index.

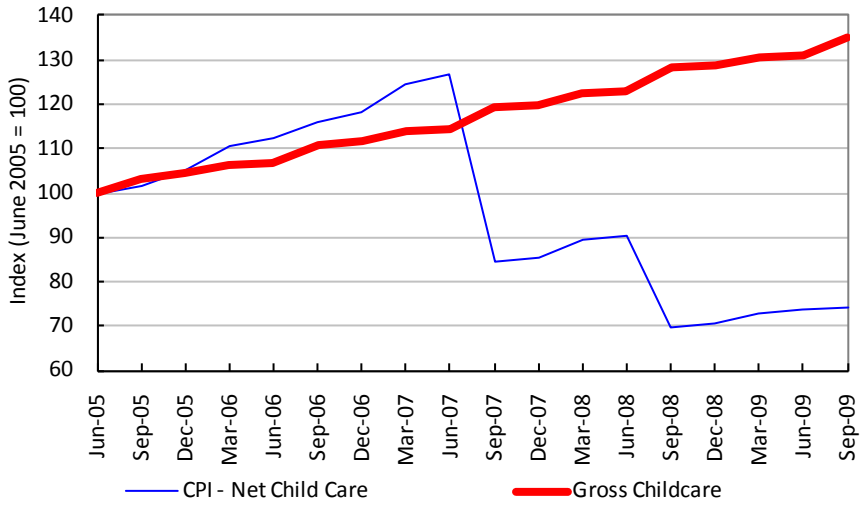
To illustrate some of these issues this section considers two expenditure class indexes – childcare and pharmaceuticals. The first illustrates how a relatively small change in the way assistance was provided had a marked effect on the CPI; the second considers the way in which the treatment of the safety net in the compilation of the index introduces a marked degree of seasonality.

Change in childcare rebate

In May 2007 the government changed the way in which the Child Care Tax Rebate was paid. Instead of being paid through the tax system the payment was to be made through the Family Assistance Office. This change triggered a change in the treatment of the cost of child care in the CPI. As a consequence in the September quarter 2007 the child care index fell by 33.4 per cent, and contributed a reduction in the quarter's total CPI increase by -0.2 percentage points. While this was partially also affected by higher indexation of the Child Care Benefit, ABS estimate that without the change in treatment the Child Care Expenditure Class Index would have fallen by just 4.9 per cent and overall Child Care would have made no impact on the All Groups CPI.

That is, while most of the change made no significant difference to the material outcomes of households, other than timing, the CPI recorded a 0.7 per cent increase in prices for the quarter in lieu of 0.9 per cent. Clearly this is not a reflection of any substantive actual change of the cost of living of households.

Figure 6 CPI Child Care Class Index and gross child care index. June 2005 to September 2009



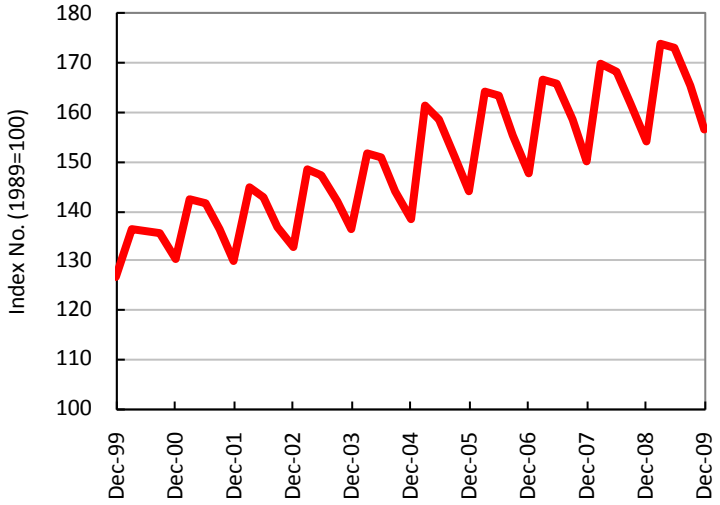
Source ABS 2009b

This impact is illustrated in Figure 6 which also shows a gross child care index published by the ABS. The two large downward steps in the CPI Child Care Index represent the initial impact of the inclusion of the CCR as a rebate for the first time and the additional 10% indexation of the CCB rates on top of the usual annual CPI indexation noted above, and then another reduction in September quarter 2008 due to the increase in CCR from 30% to 50%.

Pharmaceuticals

The modelling of the operation of the PBS safety net introduces, as shown in Figure 7, a marked seasonal pattern. Because the safety net operates to reduce the cost of pharmaceuticals once households have reached a certain level of expenditure within any one calendar year it has a relatively low impact on the cost of pharmaceuticals in the early part of each year, but a dramatic impact as it is assumed (based on take-up figures) more people reach the expenditure threshold at which the safety net operates.

Figure 7 Index Numbers; Pharmaceuticals ; December 1999 to December 2009



Source: ABS 2010

Although this may well be the pattern of take up it is not really clear that the approach in the CPI is warranted given the degree of seasonality it introduces, nor that it has any real contribution to measuring the conceptual objective of the current CPI of a measure of price inflation in seeking to understand the underlying inflationary pressures on the economy.

Government subsidies – Summary

As with earlier discussion the purpose of the above cases is to illustrate, not comprehensively analyse, certain issues that arise in the CPI.

Although it can be considered that there is a strong rationale for the way in which these items are treated this though, as illustrated, is not without problems. In particular, the case of childcare subsidies highlights the extent to which the CPI can record considerable change without any substantial change in the well being of the community.

Summary

There is a case for greater transparency in the treatment of government subsidies in the CPI which might be achieved by measures such as:

- The publication of an analytical series that excludes government subsidies. Comparison with the CPI inclusive of these would permit the effect of changes in these programs to be more accurately judged.
- An accessible database or chronology of changes that allows users to more rapidly assess the factors, other than market prices, that impact on the CPI.

In addition to the treatment of subsidies it is also worthwhile to take a similar approach to tax impacts on the CPI. While this is something which ABS has not done, such indexes have proven to be useful for understanding both the impact of price change as a result of tax, and of the underlying movements in prices, at periods when the CPI has been impacted by changes in the taxation system[33].

[33] See for example estimates of the CPI movements excluding the impact of the 1999-2000 tax changes published by the RBA (2010)

8.3 ABS analytical and publication program

A strong theme in this submission is the need for ABS to expand their analytical program, to extend the range of measures of price change and to provide more information to the user community. Some of the areas which need to be addressed include:

- Greater transparency in some of the components of the index compilation;
  - Including the way in which constant quality is addressed and information on sub element construction and weighting.
- More rigorous analysis of questions such as bias in the CPI and the dissemination of the results of internal analysis.
- Greater exploration of alternative approaches to indexes, and in the analysis of differences between index approaches
  - This would also involve a program of engagement with users – disseminating the result of these analyses and becoming involved, and indeed stimulating informed debates about the use of different approaches.

In addition to the need to substantially boost in-house activities the ABS also needs to engage more widely with academic and other researchers, making greater data available[34] and undertaking collaborative research.

Summary

The quantity and quality of published analysis and research should be one of the internal performance indicators used within ABS with clear expectations that areas such as those involved in price indexes have a strong public profile.

8.4 The Household Expenditure Survey

Decisions taken in the context of this Review of the CPI, as discussed in 5.1, may have implications for the Household Expenditure Survey.

While the weighting of the CPI is one of the major uses of the HES, it is only one of the many ways in which this survey is used. It is important that any changes in the HES as a consequence of this Review are not at the expense of these other uses of the survey, and its links with other household surveys.

In addition to its use for the CPI the HES is a critical source of information to researchers and policy makers interested in aspects of household consumption who can marry the detailed expenditure data in the survey with the extensive information of household income, wealth and characteristics.

In this regard the current ABS description of the HES is a good reflection:

"The general objectives for conducting the HES are to:

- identify the net levels and patterns of expenditure of Australian private households on a comprehensive range of goods and services purchased for private use;

[34] I would note that the ABS has improved the range of information available to users on the CPI with the production of detailed weighting structures, and the release of data on the Indexes for Mortgage Interest, Consumer Credit and Gross Insurance used in the construction of the Analytical Living Cost Indexes, being good examples of the type of improvement which enhances the capacity of users to effectively use Price Indexes.

- determine how these levels and patterns vary according to income levels and other characteristics of households, such as size and composition, location and principal sources of cash income.

More specifically the HES is used to update the weighting pattern of the Consumer Price Index (CPI) to ensure it adequately reflects the spending habits of the Australian population" (ABS 2010)

The review should also consider the scope to enhance the HES to improve its usefulness both for price index and related purposes, and these other applications. One particular area to be considered is the gap created in the information generated by the HES on patterns of consumption of various goods and services where actual expenditure does not occur on a particular item within the specified reference period.

Summary

If changes are required to the HES for the purposes of the CPI arising from the Review, that these are not at the expense of other aspects of the survey and are undertaken in consultation with other users.

Appendix A: Alternate Approaches to Index Construction

The two most common forms of a price index is a Laspeyres Index and a Paasche Index. The difference between the two measures relates to the timing of the quantity of goods included in the index (ie the weights).

In the Layspeyres Index the weight used is that of the base period, while the Paasche Index uses the quantity of goods purchased at the end of the period. Both indexes use the same price values.

$$PI_{Laspeyres} = \frac{\sum(p_{c,t_n} \cdot q_{c,t_0})}{\sum(p_{c,t_0} \cdot q_{c,t_0})}$$

$$PI_{Paasche} = \frac{\sum(p_{c,t_n} \cdot q_{c,t_{n)}})}{\sum(p_{c,t_0} \cdot q_{c,t_n})}$$

In a sense both of these indexes are not a good measure of price change over the period as using the base period weight, as in the Laspeyres Index, does not reflect the actual quantity consumed in the second period, while using the end period weights, as in the Paasche index, does not reflect the actual level of spending in the first.

While the Laspeyres Index tends to overstate the impact of price change on households by ignoring substitution, the Paasche Index understates it by looking only at the final consumption pattern[35]. One option is to use the mean of the two quantities – such as in the Marshall-Edgeworth Index, and an alternative is the Fisher 'Ideal Index' which is the geometric mean of the Laspeyres and Paasche indexes.

$$PI_{Fisher} = \sqrt{PI_{Paasche} \cdot PI_{Laspeyres}}$$

Table 3 shows the calculation of these indexes over the period June 2000 to June 2005. The data excludes the item 'Financial Services' which were not part of the index in 2000.

It is emphasised that the calculation is not exact as it relies upon ABS published data which is only accurate in most cases to a single decimal, and where some components do not add, due to changes in the composition of some expenditure classes.

However, in the absence of any published data from ABS calculating these indexes, it provides some insight into the extent to which the index approach can impact on the CPI, and in particular the problems of relying upon fixed weights in a situation where the pattern of consumption is changing.

The first three columns of the table show the CPI weights:

[35] The shorter the time period between reweighting, or the more uniform price change is, or if consumption has a lower price elasticity, the smaller the difference is between these approaches. This can be seen in estimates of implicit price deflators where Paasche indexes are usually used along with simultaneous estimates of price and volume.

- The initial weights (points contribution) used for the 14th series of the CPI in June 2000.
- The implicit weights at the end of the period (June 2005) – these are not used in the calculation but when used in association with the following column, provide an insight into the extent to which the weighting of the CPI at the end of the series significantly differs from the weighting pattern in the new series.
- The new weighting pattern of the CPI for the 15th series. As part of the chaining the sum of these equal the weight of the implicit weights at the end of the previous series.

The following two columns show the values of the expenditure class CPIs for June 2000 and June 2005.

The final two columns show the calculations of the index.

The index calculations are shown at the bottom of the table:

- In the case of the Laspeyres Index the June 2005 points contributions are calculated by summing the products of the June 2000 weight and the price change (June 2005 price index for the expenditure class over the June 2000 price index), with the resultant figure of 148.198 then being divided by the initial points contribution of 126.02 to generate a price increase of 17.6 per cent over the period.
- The Paasche index basically reverses this to derive the June 2000 index value by multiplying the June 2005 points contribution by the 2000 prices over the 2005 prices. Summing this then provides the base for the index – 128.944, which then serves as the divisor for the 2005 points of 148.47, generating an increase in the index of 15.1 per cent.
- The square root of the product of these two index values (117.6 and 115.1) gives an index of 116.4 – a 16.4 per cent increase in prices using the Fisher Ideal Index.

Table 3 Calculation of Laspeyres, Paasche and Fisher Indexes June 2000-June 2005

	Points contribution excluding financial services			Prices - Index Numbers by expenditure class		Laspeyres (June Qtr 2005	Paasche (June Qtr 2000)
	14th series	14th series	15th series				
	June Qtr 2000	June Qtr 2005	June Qtr 2005	Jun-2000	Jun-2005		
Milk	1.03	1.16	0.89	162.7	184.1	1.165	0.787
Cheese	0.44	0.55	0.52	115.2	144.9	0.553	0.413
Ice cream and other dairy products	0.44	0.50	0.50	139.9	160.5	0.505	0.436
Bread	1.04	1.13	1.02	169.1	183.7	1.130	0.939
Cakes and biscuits	1.10	1.31	1.15	130.3	155.2	1.310	0.965
Breakfast cereals	0.31	0.36	0.32	120.0	141.6	0.366	0.271
Other cereal products	0.32	0.36	0.29	127.2	142.6	0.359	0.259
Beef and Veal	0.68	0.96	0.80	114.0	160.1	0.955	0.570
Lamb and mutton	0.33	0.52	0.42	128.7	202.1	0.518	0.267
Pork	0.24	0.34	0.26	119.9	166.2	0.333	0.188
Poultry	0.62	0.65	0.77	95.4	100.2	0.651	0.733
Bacon and Ham	0.32	0.38	0.37	115.6	136.8	0.379	0.313
Other fresh and processed meat	0.54	0.68	0.61	122.8	152.5	0.671	0.491
Fish and other seafood	0.56	0.62	0.67	113.8	125.2	0.616	0.609
Fruit	1.21	1.51	1.54	118.4	148.3	1.516	1.230
Vegetables	1.69	1.92	1.86	116.6	132.1	1.915	1.642
Soft drinks waters and juices	1.63	1.77	1.46	132.0	143.0	1.766	1.348
Snacks and confectionery	1.50	1.81	1.69	151.2	182.9	1.814	1.397
Restaurant meals	2.57	3.28	3.23	132.4	169.4	3.288	2.525
Takeaway and fast foods	3.65	4.62	4.11	129.4	163.7	4.618	3.249
Eggs	0.16	0.17	0.16	152.8	170.7	0.179	0.143
Jams, honey and sandwich spreads	0.22	0.27	0.24	141.8	175.6	0.272	0.194
Tea, coffee and food drinks	0.40	0.41	0.39	133.3	134.5	0.404	0.387
Food additives & condiments	0.42	0.44	0.44	125.3	128.7	0.431	0.428
Fats and oils	0.27	0.33	0.30	119.0	147.8	0.335	0.242
Food n.e.c.	0.66	0.77	0.88	125.8	145.3	0.762	0.762
Beer	3.04	3.87	3.11	141.4	180.4	3.878	2.438
Wine	2.15	2.43	2.53	131.1	148.2	2.430	2.238
Spirits	1.30	1.53	1.41	139.7	165.0	1.535	1.194
Tobacco	2.86	4.10	3.89	276.5	395.8	4.094	2.717
Men's outerwear	1.03	1.04	1.03	105.8	106.3	1.035	1.025
Men's underwear, nightwear and socks	0.20	0.22	0.18	114.2	121.4	0.213	0.169
Women's outerwear	1.80	1.83	1.83	104.8	106.3	1.826	1.804
Women's underwear nightwear and hosiery	0.47	0.53	0.44	123.7	139.6	0.530	0.390
Children's and infants' clothing	0.60	0.64	0.64	107.6	115.9	0.646	0.594
Men's footwear	0.32	0.32	0.28	89.6	91.2	0.326	0.275
Women's footwear	0.50	0.51	0.55	98.8	101.1	0.512	0.537
Children's footwear	0.23	0.24	0.20	94.1	98.5	0.241	0.191
Accessories	0.78	0.75	0.90	94.8	91.6	0.754	0.931
Clothing services and shoe repair	0.47	0.58	0.26	141.1	174.8	0.582	0.210
Rents	7.07	7.97	8.39	127.0	143.2	7.972	7.441
Electricity	2.10	2.69	2.62	116.9	150.0	2.695	2.042
Gas and other household fuels	0.88	1.23	1.13	126.7	176.1	1.223	0.813
Water and sewerage	1.09	1.29	1.24	106.4	125.7	1.288	1.050
House purchase	9.91	12.97	12.68	111.8	146.2	12.959	9.696
Property rates and charges	1.52	1.97	1.87	108.8	140.9	1.968	1.444
House repairs and maintenance	2.34	2.94	3.51	125.3	157.7	2.945	2.789

	Points contribution excluding financial services			Prices - Index Numbers by expenditure class		Laspeyres (June Qtr 2005	Paasche (June Qtr 2000)
	14th series June Qtr 2000	14th series June Qtr 2005	15th series June Qtr 2005	Jun-2000	Jun-2005		
Furniture	2.91	3.03	3.15	123.9	129.0	3.030	3.025
Floor and window coverings	0.91	1.13	1.25	113.6	140.7	1.127	1.009
Towels and linen	0.69	0.63	0.63	119.0	108.6	0.630	0.690
Major household appliances	1.10	1.14	1.08	105.1	109.1	1.142	1.040
Small electric household appliances	0.36	0.33	0.43	105.1	95.8	0.328	0.472
Glassware, tableware and household utensils	0.61	0.57	0.76	104.8	96.9	0.564	0.822
Tools	0.42	0.42	0.57	113.5	111.2	0.411	0.582
Household cleaning agents	0.55	0.56	0.52	122.5	125.4	0.563	0.508
Toiletries and personal care products	1.77	1.90	1.91	133.3	142.9	1.897	1.782
Other Household Supplies	1.87	2.04	2.26	125.9	137.7	2.045	2.066
Childcare	0.55	0.74	0.73	150.4	201.5	0.737	0.545
Hairdressing and personal care services	0.94	1.18	1.21	139.9	176.4	1.185	0.960
Other household services	0.79	1.00	0.97	163.6	208.6	1.007	0.761
Hospital and medical services	3.42	4.74	4.46	170.0	235.9	4.746	3.214
Optical services	0.20	0.22	0.19	126.3	143.7	0.228	0.167
Dental services	0.87	1.12	1.09	163.7	211.7	1.125	0.843
Pharmaceuticals	1.43	1.67	1.83	135.8	158.5	1.669	1.568
Motor vehicles	7.38	7.00	7.89	104.6	99.2	6.999	8.319
Automotive fuel	5.37	6.90	6.09	141.9	182.6	6.910	4.733
Motor vehicle repair and servicing	2.77	3.38	3.20	119.7	145.7	3.372	2.629
Motor vehicle parts and accessories	1.27	1.38	1.10	106.2	115.8	1.385	1.009
Other motoring charges	1.38	1.68	1.65	164.7	200.8	1.682	1.353
Urban transport fares	1.07	1.33	1.17	164.9	205.4	1.333	0.939
Postal	0.19	0.22	0.18	116.0	134.1	0.220	0.156
Telecommunication	3.44	3.85	5.16	97.0	108.4	3.844	4.617
Audio, visual and computing equipment	1.64	0.84	2.47	56.3	28.8	0.839	4.829
Audio, visual & computing media and services	1.77	1.67	2.23	103.8	98.2	1.675	2.357
Books	0.62	0.73	0.71	106.4	124.0	0.723	0.609
Newspapers and magazines	0.74	0.94	0.65	108.4	136.6	0.933	0.516
Sport and recreational equipment	0.82	0.75	0.89	98.1	89.2	0.746	0.979
Toys, games and hobbies	0.66	0.66	0.83	97.4	97.9	0.663	0.826
Sports participation	1.02	1.35	1.17	109.3	145.2	1.355	0.881
Pets, pet food and supplies	0.55	0.60	0.64	125.0	137.3	0.604	0.583
Pet Services including veterinary	0.41	0.53	0.72	154.6	197.3	0.523	0.564
Other recreational activities	1.79	2.22	1.75	109.8	136.4	2.224	1.409
Domestic holiday travel and accommodation	3.03	3.56	3.66	116.2	136.7	3.565	3.111
Overseas holiday travel and accommodation	2.46	2.97	2.88	102.3	123.5	2.970	2.386
Preschool and primary education	0.64	0.88	0.85	100.0	137.7	0.881	0.617
Secondary education	1.18	1.63	1.52	100.0	138.3	1.632	1.099
Tertiary education	1.58	1.95	2.03	100.0	123.9	1.958	1.638
Insurance services	1.84	2.27	2.41	201.8	248.6	2.267	1.956
All Groups (excluding financial Services	126.02	148.18	148.47			148.198	128.944
						Laspeyres	Paasche
Index Change (over 5 years)		17.6%				17.6%	15.1%
Annualised rate of CPI		3.29%				3.30%	2.86%

	Fisher
Index Change (over 5 years)	16.4%
Annualised rate of CPI	3.08%

Source: ABS 2005c and ABS 2009c

Appendix B: Extract from: Report of the Commission on the Measurement of Economic Performance and Social Progress

Stiglitz, Sen & Fitoussi 2009

98. A point of particular relevance from a welfare perspective is the question about 'whose' price index is evaluated. Often, conceptual discussions about price indices are conducted as if there were a single representative consumer. Statistical agencies calculate the increase in prices by looking at the costs of an average bundle of goods. However, different people buy different bundles of goods (e.g. poor people spend more on food and less on entertainment) and they may buy their goods and services in different types of stores (which sell "similar" products at very different prices). When all prices move together, having different indices for different people may not make much a difference. But recently, with soaring oil and food prices, these differences may have become more marked and people at the bottom of the income distribution may have seen real incomes fall by much more than those at the top of the income distribution.

99. Deaton (1998) relates the income-specific price indices back to the problem of quality measurement. He argues that quality effects are income related and that the "benefits of quality upgrading and of new goods will only be distributionally neutral if the affected goods are neither luxuries nor necessities. While it is true that advances in the technology of consumption have benefitted people in all parts of the income distribution, it is hard to believe that many of the relevant goods are not luxuries. When new goods are consumed disproportionately by the rich, whose price indexes are weighted in the CPI according to their incomes, the quality-corrected plutocratic index can provide a very poor measure of prices for the average consumer."

100. A price index for (actual) private consumption of major groups in society (by age, income, or place of residence such as rural vs. urban population) is necessary if we are to appraise their economic situation. One of the recommendations of the *Commission mésures A pouvoir d'achat des ménages* (2008) (Commission on the measurement of purchasing power of households) in France was to develop consumer price indices for owners of dwellings, for renters and for households that are about to purchase dwellings (Ruiz 2009). Other relevant categories potentially exist. However, such prices indices are not available in most countries. While indices with different weights for different groups of the population are easily computed and exist in several countries (such as the United Kingdom, France, Germany), they tend to show relatively similar movements. A full development of price indices differentiated by socio-economic groups would require, however, the collection of different prices for different parts of the population, so that socio-economic aspects are taken into account in data collection design. This is likely to be difficult and costly. This development should constitute a medium-term objective – a recommendation that echoes a similar conclusion by Schultze and Mackie (2002)29. Such work would not only foster the quality of deflation procedures, but also make it easier for citizens to assess their personal situation through some of the income and price data released by statistical offices.

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