The CPI purpose and definition - the Australasian Debate

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Abstract

Both Australia and New Zealand convened advisory groups to review their Consumer Price Indexes in 1997. In Australia, the advisory group was unable to reach agreement on the primary purpose of the CPI, and in New Zealand a level of agreement was only achieved by proposing that additional indexes be produced.

This paper will review the traditional links between the two countries, the recent debates in both countries and highlight the areas of disagreement in the debate which could have wider interest. It will also look at the similarities and differences between the two countries eventual approaches, and the relationship to international practises.

1. Introduction and background

Historically Australia and New Zealand have quite similar practices in many areas of their Consumer Price Indexes, but have also had some quite fundamental differences.

Both Australia and New Zealand developed indexes of retail prices around 1912-14, a time when price indexes were attracting attention world-wide. The price changes had 'passed from the region of merely academic questions in Australia and is influencing the decisions of Industrial Tribunals and Wage Boards' (Knibbs, 1912). In New Zealand, from 1894, the Arbitration Court had been taking note of price changes in fixing wages. This focus on the use of price indexes to fix wages was considered the primary use of the CPI in both countries for a very long time. New Zealand modified this view with the advice of the 1972 CPI Revision Advisory Committee that the major use of the CPI was a measure of inflation. However the interests of wage negotiators were also considered with the continued inclusion of interest rates in the CPI.

More recently, Australia has been looking at the question of wider inflation measures, and through this arrived at a proposal to move to an acquisitions based measure as well. There are now quite a lot of moves to try and bring the two indexes closer together, with the aim of better comparability and the potential to share development work.

Both countries convened advisory groups to review their CPI's in 1997. These advisory groups represented a range of the user community with a diversity of uses of the CPI and a diversity of views as to their construction. In both Australia and New Zealand the advisory group was unable to reach agreement on the primary purpose of the CPI. The level of disagreement meant that the statisticians involved had to propose solutions to try and meet a wide range of needs.

Australia and New Zealand co-operated closely in developing the ideas for possible changes to the approach to the CPI. This resulted in a lot of similarities in the final proposals. The work on Harmonised Indexes of Consumer Prices by Eurostat has also had some influence on the approaches taken to the index review, as did the interest generated by the Boskin Report in the United States.

Both countries have decided to adopt the expenditure - acquisitions approach to calculating their Consumer Price Index, and exclude interest from this measure. In New Zealand a level of agreement about the future form of the CPI was only achieved by proposing that additional indexes be produced. In Australia, the Statistician proposed that the acquisitions index would be adopted, with ongoing outlays based indexes for subgroups of the population produced annually. The main differences between the CPI's will be as a result of the difference between the countries consumption patterns.

2. The purpose of the CPI

This section covers the points of debate in New Zealand. The views expressed in the Australian debate are well covered in their report, Outcome of the 13th Series Australian Consumer Price Index Review, 1997.

In summary, the New Zealand CPI Revision Advisory Committee (RAC) expressed a divergence of views on the following issues:

- The treatment of interest in the CPI. The committee was divided on whether interest should be included or excluded from the CPI.
- The treatment of housing. There was a strong view by a minority that housing costs should be measured using imputed rents, rather than current methods.

A number of conceptual positions were actively disputed by members of the committee, notably:

- whether the form of the CPI should be driven by the objective of approximating a constant utility index;
- whether debt was a commodity or not; and as a consequence
- whether or not interest is a price paid for services.

It was agreed by most of the committee that the credibility of the CPI is enhanced by its use of prices paid in actual market transactions and is reduced by the use of imputed prices and notional transactions. The credibility of the CPI is also enhanced, particularly in relation to its use in monetary policy, by its consistency with international practice.

The divergence of views reflected the RAC concerns about the appropriate form and scope of the CPI given the different roles the index plays in economic life.

2.1 Monetary Policy

As part of the economic reforms initiated in the mid 1980s, monetary policy has emerged as a central instrument of economic management. The Reserve Bank Act of 1991 explicitly focuses on inflation, and the resulting agreement between the Minister of Finance of New Zealand and the Governor of the Reserve Bank sets explicit limits for inflation as measured by the CPI. As a result of this, including interest rates in the CPI was strongly debated as they:

- are a key instrument of monetary policy; and
- tend to exhibit short term cyclical volatility which masks the trend in the level of inflation.

New house prices and section prices, it was also argued, were subject to short term speculative pressures which in turn created volatility, or "noise" in the index. However, no agreement was able to be reached among all parties of the committee as to how housing should be treated. this was one of the primary factors behind the proposal to produce three different indexes.

In both these cases there was a perceived risk of inflationary expectations changing with these short term effects.

2.2 Maintaining Purchasing Power

The CPI is also used to assess the impact of inflation on households, for purposes of maintaining the purchasing power of welfare benefits, as an input into remuneration negotiations and as a price level adjuster in contracts for supply of goods and services. In this role a CPI which excluded major components of household expenditure such as housing and interest payments would not be credible.

2.3 Deflators

There is a need for a price index to deflate household consumption expenditure in National Accounts and in macro-economic forecasting. An index which measures the changing price of the goods and services consumed by households (as distinct from purchased) fits this role more exactly.

2.4 Disposable Incomes

Social policy is concerned with the real purchasing power of the disposable incomes of households characterised by income level, prime income source, and degree of attachment to the labour market. An index of disposable incomes, adjusted for price level change, tax and benefit changes would be more appropriate for this objective. New Zealand produced a series of indexes of real disposable income(RDI) from 1981 to 1994 which was widely used to understand the overall impact of tax and benefit changes on the different income quintiles. The RDI was discontinued because it did not cope with the deregulation in the 1990's, and was no longer an accurate guide to changing real purchasing power. It is proposed to develop a set of measures to replace this index, with a wider breakdown of household types. These measures are yet to be developed and may not be index numbers.

3. Appropriate indexes for different purposes

In the literature on consumer price indexes there are three main approaches to defining the consumption expenditure basis of a CPI:

- Net Acquisitions. NZ has used this approach since 1974, but has included current interest rates in this index.
- User Cost (also referred to as the consumption or cost of living (COL) approach).
- Payments or Outlays approach. This approach is currently used in Australia.

It is often argued that identifying the primary use of the index should enable the choice of the appropriate approach to use in constructing the index. A comparison of some views on the different indexes to be used for some different purposes shows that this is not agreed by the users of the indexes. In New Zealand, the Revision Advisory Committee's lack of agreement on what types indexes were suitable for the different purposes simply reflects these differing views.

Use of index	**Objective**	**Cunningham**	**ILO Resolution concerning consumer prices/Turvey**	**NZ Revision Advisory Committee views**
Economic / Monetary Policy and analysis	Strong economic growth (NZ) Maximise social welfare (Cunningham) Assessment of economic policy achievements, forecasting	Either an empirical measure or constant cost of living measure	Not payments (outlays) or User costs - therefore acquisitions	Either consistent with SNA concepts, therefore COL, or best measure of inflation, therefore acquisitions.
Social Policy/ social analysis	Enhancing the ability of people to actively participate, evaluate real disposable incomes (NZ)		Payments	Payments, or COL
Indexing benefits or pensions	Maintain living standards (Cunningham) or maintain purchasing power	Constant cost-of -living (relevant to population sub-group)	Payments	Payments, or COL
Indexing wages or spending	Maintain spending level (Cunningham) - maintain purchasing power	Constant cost of living measure relevant to spending	Payments	Acquisitions or outlays, relevant to spending
Indexing gilts or bonds	Offer a hedge against inflation (Cunningham)	(no comment)	(no comment)	Acquisitions most accurately measures inflation
Use of index	Objective	Cunningham	ILO Resolution concerning consumer prices/Turvey	NZ Revision Advisory Committee views
Cross-country comparisons	Macroeconomic analysis	A measure consistent across countries	Index excluding shelter costs	A measure of inflation consistent across countries, eg similar to HICP
Deflation of National Accounts	Inflation adjusted measures of national production, income and expenditure		Measure as close as possible to SNA concepts	Measure as close as possible to SNA concepts, such as IPD

Sources Cunningham (1996), Turvey(1989), NZ government strategic result areas (1997), NZ CPI Revision Advisory Committee Report (1997)

It is not possible to reconcile these conflicting objectives, and views of what indexes will meet those objectives, in a single price index. The NZ RAC agreed that the smallest set of household price indexes that would meet these objectives would include:

- Household Acquisition Price Index
- Household Outlays Price Index
- Household Consumption Price Index
- Real Disposable Income Index

There was also some debate about general measures of inflation in New Zealand. It was argued that the CPI is not a general measure of inflation and that potentially wider measures were of interest. However recommendations on developing wider measures of inflation were considered outside the scope of the committee.

4. The Choice of an Acquisitions Index for the CPI

Peter Hill's papers for Eurostat on the Harmonised Indexes of Consumer Prices argue very convincingly that a measure of inflation should be a measure of actual monetary transactions, and based on the acquisitions principle.

The acquisitions index is a measure of prices paid for goods and services transacted by households. The domain of prices covered by this index is all monetary transactions undertaken by households, regardless of when the item acquired is used or paid for. Only prices for actual market transactions are included in the index - no notional prices.

It is therefore considered to be the nearest to an “inflation” measure and appropriate for monetary policy. This is because “inflation is essentially a monetary phenomenon in prices denominated in units of currency” (Hill, 1996).

Capital items are included in the acquisitions index. The household completes a monetary transaction when acquiring capital goods. These goods provide a flow of services in the future and the goods should therefore be part of any inflation measure.

The weight for housing would include the expenditure on all new houses during the base period as well as those sections purchased and built on in the year. The pricing measure would include the price of new houses (including the price of the section built on).

Subsidised goods and services would be included but only the price paid by households in monetary transactions would be collected. This would mean that services provided free of charge are conceptually included with a zero price and zero expenditure weight while those partly subsidised would have an expenditure weight representing the household expenditure on that good or service. Assets purchased principally for investment purposes would be excluded from an acquisitions index, even though a monetary transaction occurs at the time of purchase.

Interest is included in the current CPI which is acquisition based. Previous advisory committees have believed that interest was the price paid for the acquisition of credit. However there is debate internationally about whether interest rates represent a market price for an actual transaction in goods and services, and there is no consensus on this that would confirm that view.

The difficulty arising when interest is included in a price index designed for monetary policy due to its cyclical and volatile nature has lead to an emerging consensus internationally that interest should be excluded when the price index is used for measuring inflation and for monetary policy. Even if interest was regarded as appropriate for inclusion conceptually, the volatility of the measure in practise may differ from the price variability experienced by households.

The ABS, also argued that in practice an acquisitions index excluding interest is more appropriate for indexing superannuation because most retired people do not pay interest.

5. Alternative indexes for other uses

5.1 Price Index of Household Outlays

A price index of household outlays focuses on monitoring the price change in the actual monetary outlay of a household in any given period. This focus makes it the best measure for maintenance of household purchasing power and for the uses of income, benefit and contract adjustment.

The price index of household outlays includes only that proportion of the price of capital items outlayed in the base year. Assuming no change in the rate of savings, the change in money outlayed must be matched by an equivalent change in disposable income to maintain the same purchasing power. For this reason this index is considered the appropriate measure to use for indexing income, benefits or escalation of contract charges to be in line with changes in money outlays.

An outlays index would include:
- all actual monetary outlays on goods and services;
- money outlayed on interest payments in the base period; and
- money outlayed on the purchase of capital items (other than items purchased principally for investment purposes) in the base period. This index would view house purchase as a shelter cost rather than an investment, so the capital costs of house purchase would be included.

The index would exclude:
- any money outlayed for investment purposes only; and
- any notional outlays.

The main difference between the outlays approach and other approaches is the treatment of items purchased on credit. For example the purchase of a car involves a series of payments of interest and a portion of the principal over the term of the loan. The money outlayed by the household is the amount of interest payment made in the base period and the amount of principal repaid in the same period, rather than the total cost of acquiring the item.

The pricing of the credit charges which are outlayed each period would include two parts:
- the interest payment; and
- the principal repayment.

This could be difficult to measure, particularly for housing. Developing this price measure without double counting is one of the more difficult parts of implementing an outlays index.

5.2 Price Index of Household Consumption

The consumption approach attempts to measure the change in the price of the goods and services consumed rather than monetary outlays or transactions. In its purest form it focuses on the flow of services generated and consumed.

The main difference between the consumption approach and other approaches again is the treatment of durables, ie items purchased in one period but consumed over a number of future periods.

The main use of a consumption index is in economic analysis, including deflation of household consumption expenditure in the National Accounts, in economic models used for forecasting of national accounts components such as Gross Domestic Product (GDP), and as an approximation a "cost of living" index.

Notional prices are included in this index. The National Accounts framework allows for notional transactions in some areas which require prices be measured on a consistent basis for accurate deflation. For example, notional prices could be required for capital items which are purchased to provide a flow of services in later periods. The household is consuming these services and the index requires the flow of services to be valued. These capital items include houses, motor vehicles and household durables.

The usual approach to measuring housing in a consumption index, is to impute a value for the shelter services that owners obtained from houses they own, by measuring rents for similar rented properties. This approach is difficult to implement accurately in New Zealand because of the relatively small size of the private housing rental market and the distinct differences between the rental population and the home ownership population. This sort of difficulty has lead Australia and the United Kingdom to reject the rental equivalence approach, but it has been implemented in some other countries with small rental markets.

Motor vehicles and other household durables could be treated in a similar manner to housing.

The treatment of non-market government provided services also is different because the value of the service consumed is that of the price paid by the household plus any subsidy provided by the government. Any change in government subsidy levels would result in a change in the price paid by the household, but would not change the value of consumption. A shift to user pays with no change in the overall costs would not affect a consumption based index.

5.3 Real Disposable Income Index (RDI)

A Real Disposable Income Index (RDI) focuses on the impact of market changes in income and prices, and government policy decisions, on households' ability to maintain a standard of living. It incorporates changes in prices, interest rates, income, taxation and benefit levels to derive a measure of the changing disposable income.

A family of real disposable income indexes for households would allow for changes in purchasing power and in the distribution of income to be monitored for groupings of households characterised by factors such as income level, prime income source and labour market attachment.

The RDI measures changes against the standard of living in its base period. It will provide a measure of the ability of households to maintain this standard of living over time. Because an RDI encompasses income as well as price change it provides a more complete measure of household well-being than a "cost of living" index.

An RDI thus provides a useful measure for social policy analysis.

6 Summary of Recommended changes in New Zealand

(extract from the report of the 1997 Revision Advisory Committee)

> The New Zealand Consumers Price Index Revision Advisory Committee reviewed the use, methodology, calculation, and release to users of the Consumers Price Index. The committee, in its deliberations, took into account the wide ranging uses of the CPI and, more particularly, the changing economic environment in which it is used. As a consequence, some fundamental changes in the approach to the Consumers Price Index were recommended. The committee was mindful of the need to maintain public confidence in the CPI and the recommendations for change are intended to do this. Although there are some substantive conceptual changes recommended, the majority of the recommendations reconfirm the essential soundness of the current CPI and the way it is calculated.
>
> The fundamental principle that the CPI should continue to be a price index of goods and services purchased by private New Zealand households was reconfirmed. In particular it was agreed that shelter costs should continue to be represented in the CPI.
>
> The major recommendation for change however was that Statistics New Zealand should move to producing a set of three measures of consumer price change. No single conceptual approach can generate a measure which satisfactorily meets the needs of all users.

Each of the new measures of price change will be constructed on a different conceptual base. The official NZ CPI is recommended to remain an acquisitions based index, but will move to exclude interest costs. The introduction of an outlays based index will retain a measure comparable to the current CPI in the public domain. A new consumption based index will include the application of an imputed rental approach to housing costs.

In conjunction with the new measures of price change, the development of a set of real disposable income indexes is recommended. These index series will address the need for an appropriate and comprehensive measure of changing consumer purchasing power.

Considerable importance was placed on retaining public confidence in the CPI. In order to maintain an ongoing measurement of the impact of price changes on households, the committee also recommended that the CPI should remain in its current form until the new measures, particularly the set of real disposable income indexes, are available.

The committee recognised that changing technology and international research could mean that improvements to methods of collection and processing of the information used in the CPI would be possible in the near future. Several recommendations were made to help focus Statistics New Zealand in its research and implementation of appropriate changes. Recommendations were also made to extend the range of analytical series currently produced to potentially include a series without any seasonal adjustment, series calculated using alternative index formulae, and series for the tradeable and non-tradeable sectors.

The changing retail environment and wide availability of some new items were recognised through a series of recommendations to include new commodities (items) and new purchase sources (outlets) in the index, such as a wider range of telecommunications items and suppliers. Changes were also recommended which would give Statistics New Zealand more flexibility to bring in new items as they gain a significant market share.

The variety of views expressed by committee members on the form of the CPI was more diverse than had occurred in any of the previous five reviews; public submissions reflected the same diversity of views. In reaching the recommendations outlined in this report, the balance of opinion expressed by committee members did not fall strongly in favour of specific direction with regard to any single measure. The mix of measures proposed reflects the form of consensus that was achieved and attention was given to arriving at a position which would be received with confidence by New Zealanders.

The Government Statistician in New Zealand has stated that he agrees with the recommendations of the committee

7 Comments

The decision in both New Zealand and Australia that the Consumers Price Index will be an acquisitions based index is based on an assessment that although there are a wide range of uses of price indexes, the use as a measure of inflation is now the most dominant. It is also based on an assessment that the mostly widely accepted view is that inflation is best measured using an acquisitions concept. This view will continue to be debated.

The publication of supplementary indexes for other purposes reflects a change in attitude towards CPI's which has been occurring gradually. It is now much more widely accepted that value is added by the calculation of analytical series of different sorts, and the additional indexes proposed in New Zealand will be presented as analytical series. It will be very important to ensure that the various series are not misused, and sufficient information is made available to enable this.

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Comparison of index types

	Household Acquisitions Index	Household Outlays Index	Household Consumption Index
Definition	Measures the full price of goods or services acquired in the base period regardless of when it is consumed or paid for.	Measures the payments or outlays made for goods or services in the base period regardless of when they are actually purchased or consumed.	Measures the cost of the amount of goods or services consumed in the base period, regardless of when they were purchased or when payments were made.

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Comparison of index types

	Household Acquisitions Index	Household Outlays Index	Household Consumption Index
Major uses	Main measure of inflation or price change as it effects households. Possibly some forms of indexation.	Indexation of wages or benefits. Most indexation in legal agreements relating to households	Uses in relation to economic forecasting. Considered to measure the 'cost of living'.
Justification for uses	Inflation can only be observed in monetary transactions relating to purchases of goods or services for consumption.	Index which most closely relates to day to day expenditure of households.	Match to National Accounts concepts. Relates to day to day consumption, rather than actual expenses.

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What are the main practical differences?

	Household Acquisitions Index	Household Outlays Index	Household Consumption Index
Treatment of housing - weighting	Net additions to the housing stock and possibly expenditure on sections that were built on in the base period. Sections purchased but not built on would be excluded.	All net outlays on home ownership during year - including house and section purchase, if agreed that, conceptually, houses are purchased for consumption purposes.	Estimate shelter value of existing housing stock. Alternatively value of user costs. Both represent the expenditure on shelter and exclude the investment component of housing.

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What are the main practical differences?

	Household Acquisitions Index	Household Outlays Index	Household Consumption Index
Treatment of interest	Included in current CPI, but will be excluded in future. Charges relating to monetary transactions such as credit card and hire purchase costs are included.	Includes interest. Charges relating to monetary transactions such as credit card and hire purchase costs are included.	Interest is excluded as it does not represent current consumption. Charges relating to monetary transactions such as credit card and hire purchase costs are included.

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What are the main practical differences?

	Household Acquisitions Index	Household Outlays Index	Household Consumption Index
Treatment of housing - prices	Both new and previously occupied house prices would be collected. Changes in section prices would be included in the price indicator for new houses.	Prices collected for interest rate paid (similarly to the current CPI). Also include principal repayments.	Prices of rents would be used to indicate movements of shelter costs. Or user costs of depreciation and appreciation, local authority rates, repairs and maintenance, insurance, opportunity cost of equity finance.

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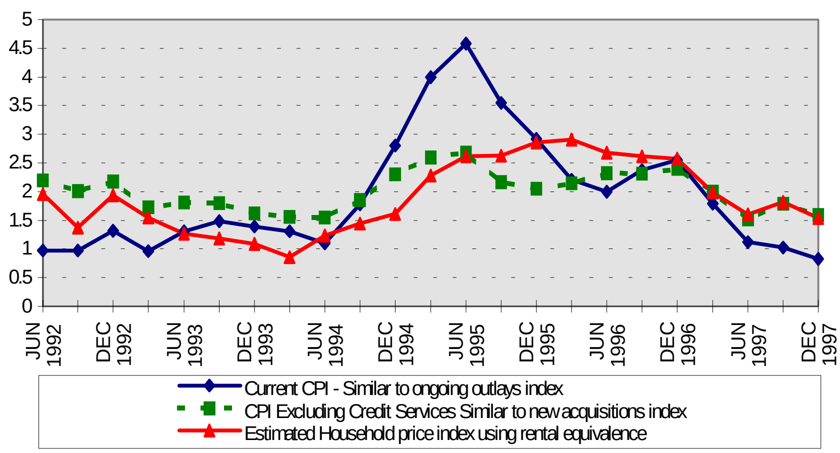
Three Indexes of Consumer Prices

Percentage Change from previous year



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