



SEMINAR

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2. The Boskin Report and Price Measurement in Australia

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INTRODUCTION

The Australian Bureau of Statistics (ABS) and key users of the Australian CPI were keenly interested in the work being done in the United States by the Advisory Commission to Study the Consumer Price Index (the Boskin Commission) and welcomed the release of its report in December 1996. The timing of the release of this report was providential in that it coincided with the most comprehensive review of the Australian CPI undertaken by the ABS since 1960.

The Boskin report dealt extensively with the issue of possible bias in the US’ CPI and resulted in similar concerns being raised by users of the Australian CPI. Although the existence of any bias in the Australian CPI was (and continues to be) a matter of concern for the ABS, the key focus of the 1997 review was to determine what the primary measurement objective of the CPI should be. The review of the CPI undertaken in 1997 resulted in a fundamental change in the measurement objective of the CPI and set the scene for subsequent and future enhancements.

This paper outlines the key issues considered by that review, the conclusions drawn and decisions taken². It describes the methodological changes implemented following the review and those that are planned for in the short to medium term.

MEASUREMENT OBJECTIVE OF THE CPI

The CPI has always been, and will continue to be, used for a variety of purposes. However, from its inception up until the early 1990’s it was generally agreed that its most important use (or principal purpose) was as an input to the highly centralised wage and salary determination process then existing in Australia. Accordingly, its measurement objective was to measure the impact of ‘price’ change on the purchasing power of the after tax money incomes of wage and salary earner households.

¹ The author is the Director of price index research and development at the Australian Bureau of Statistics.

² See ABS 1997(b), ABS 1997(c) and ABS 1998 for more detail.

The methodological consequences of adopting this measurement objective for the CPI prior to 1997 were twofold. One, the population coverage of the CPI was constrained to employee households (and for reasons of cost, further restricted to only those employee households residing in the eight capital cities – accounting for approximately 29% of Australian private households). Two, the item domain was defined by reference to the expenditures incurred by households to gain access to consumer goods and services (i.e. the CPI was constructed according to the so called ‘payments’ approach).

Over time, previous periodic reviews of the CPI had served to reaffirm the objective of measuring changes in the purchasing power of money incomes and changes in item coverage and measurement techniques were targeted at improving the reliability of this measure. At the time of the 1997 review, items included in the CPI accounted for approximately 95% of the target population groups’ expenditures. In this respect it is particularly relevant to note that the CPI included mortgage interest and consumer credit charges.

The 1997 review acknowledged a number of changes in the operation of the Australian economy since the previous review in 1992. Namely that:

- Containing inflation, and the shaping of inflationary expectations of the Australian population, was attracting much more focus as an economic policy imperative.
- The Reserve Bank of Australia (RBA) had formally adopted an inflation target for the administration of monetary policy (with the objective of keeping underlying or core inflation within the range of 2% to 3% over the business cycle).
- There had been a progressive move away from a centralised wage and salary determination process towards decentralised, enterprise level arrangements with the outcomes focussed on the commercial circumstances of individual businesses. The move away from centralised processes has continued over the past eight years.

The ABS concluded that, on balance, the Australian community would now be better served by a CPI designed specifically to provide a general measure of price inflation for the household sector as a whole.

The issue of how best to measure ‘inflation’ is very complex³. Despite universal usage of the term ‘inflation’, there is no generally agreed definition that is sufficiently precise to develop an unequivocal measure. Nevertheless, there is some convergence of views as to the conceptual properties that would be possessed by an index designed for the analysis of price inflation for the household sector.

- Taking the view that inflation is a phenomenon peculiar to the operation of markets, it would encompass only market transactions.

³ See ABS 1997 (a) and Woolford, K. 1999 for more detail.

That is, government services which are not marketed, and notional transactions such as those where homeowners are deemed to rent dwellings from themselves as landlords, would not be included.

- It would capture the contemporary rate of change in the prices of all goods and services acquired by households. As such it would not include interest rates, which are more correctly viewed as representing the price of money or the relative price of consuming today rather than in the future.
- It would incorporate very recent weighting information.

The methodological consequences of taking this course of action were that, from September quarter 1998, the population coverage of the CPI was expanded to cover all private households in the eight capital cities (an increase from approximately 29% to 64% of Australian private households) and the item domain was defined as all those goods and services acquired by households in monetary transactions (i.e. the adoption of the so called ‘acquisitions’ approach).

The practical implications of implementing the outcome of this review were:

- Mortgage interest and consumer credit charges were dropped from the CPI.
- The basis for calculating weights for property insurance (motor vehicles, dwellings and household contents insurance) was changed from a gross premiums basis to an insurance services basis to reflect the value of the insurance service acquired by households rather than the gross outlays made to gain access to insurance services.
- The inclusion of expenditures on the net acquisition (including alterations and additions) of dwellings (excluding land).

MEASUREMENT BIAS

Turning now to the issue of bias investigated by the Boskin Commission. In recent years the ABS has focussed on two of the five sources of bias identified by Boskin, namely elementary aggregate formula bias and quality adjustment bias. Investigations of the potential for upper level or item substitution bias concluded that the risk was small due to the relatively frequent higher level weight update program in place in Australia and the ongoing sample review program which allows for even more frequent updating of individual item weights.

Elementary aggregate formula bias.

The ABS, in common with the majority of statistical agencies, traditionally used the Arithmetic ratio of Price Relatives (APR or Carli) formula for the

calculation of price change for the majority of elementary aggregates in the CPI. As concern mounted about the potential for this formula to overstate the rate of price change⁴, in the early 1990's the ABS commenced work on developing a new processing system for the CPI which would provide for the use of different formula at the elementary aggregate level. This processing system was brought into production just prior to the commencement of the 1997 review of the CPI. Since that time, the ABS has moved to adopt the Geometric Mean (GM or Jevons) formula for all elementary aggregates with the exception of those for which zero prices may be encountered (due to subsidies) or for those where institutional barriers effectively prohibit substitution (e.g. local government charges).

Quality adjustment bias.

In compiling the CPI the ABS continues to place a high priority on the detection of and appropriate adjustment for any quality changes in the individual items priced. Later this year hedonic quality adjustment will be introduced for the construction of the price measure for personal computers based on domestically collected prices – replacing the current procedure of using an exchange rate adjusted hedonic index published by the US Bureau of Labor Statistics. Research is also well advanced on the development of hedonic quality adjustment techniques for use in compiling price measures for new motor vehicles – to replace the current reliance on the expert judgement of the commodity analysts.

FINANCIAL SERVICES.

One of the outcomes of the 1997 review of the CPI was that the ABS committed to the development of a price index for financial services for eventual inclusion in the CPI. A research program to develop such a measure⁵ commenced in 1998. Consistent with the objective of the CPI to measure price inflation for the household sector as a whole, the aim was to construct a price index covering all those services acquired by households in relation to the acquisition, holding and disposal of financial and real assets. It was considered essential that the index be able to reflect changes in the total cost of any service and therefore it needed to cover both those fees and charges levied directly on households and those paid indirectly via differences in interest rates on loans and those on deposits ('interest rate margins').

The construction of a measure of price change that includes both the direct and indirect charges is not a straightforward process. However the ABS believes that it has solved the methodological problems and commenced publishing an experimental series in July 2004 with data extending back to September quarter 1998⁶.

⁴ See Woolford, K. 1994.

⁵ See Woolford, K. 2001.

⁶ See ABS 2004.

There are many services acquired by households that have the potential to be regarded as financial services. Some common examples are: financial advice; currency exchange; deposit and loan facilities; services provided by fund managers, life insurance offices and superannuation funds; stockbroking services; real estate agency services etc. Coverage of the current series has been restricted to those services for which the ABS has been able to construct reliable measures of price change, namely:

- deposit and loan facilities provided to households by deposit-taking institutions, and
- services provided by stockbrokers and real estate agencies in respect of the acquisition and disposal of equities (shares) and real estate.

The ABS has yet to turn its attention to how best to construct price indexes for services provided by fund managers, life insurance offices and superannuation funds. The complexities of the charging arrangements for services provided by these organisations are such that a satisfactory solution will require a major research effort. However, services covered to date are significant in terms of the aggregate volume of financial services used by households and are used by virtually all private households.

The ABS believes these experimental indexes are robust and fit for purpose and that extending the coverage of the CPI to include financial services would make the CPI a more comprehensive measure of price inflation for the household sector as a whole. The ABS plans to include financial services in the CPI from the introduction of the next weight update in the September quarter 2005.

FUTURE CHALLENGES

The ABS believes that the reliable measurement of price change for services is likely to present the greatest challenges for price statisticians. Service providers are seen to have an almost unlimited capacity to tailor products to suit individual consumers and are increasingly bundling together services that would have once been sold independently. Providers of telecommunication services provide particularly good examples of this behaviour – bundling of fixed line, mobile telephony and internet services is now prevalent with some providers also bundling electricity and home entertainment such as movies on demand.

With the amounts payable by individual households determined by complex charging regimes which take into account a customer's overall spend with a provider, traditional index construction techniques based on linear charging schedules for micro services (such as a local telephone call) are proving to be incapable of reliably capturing overall price development.

In order to construct price indexes for deposit and loan facilities (a component of the Australian financial services index) the ABS built a processing system to emulate the differing charging regimes of the service providers. This system

takes as inputs samples of customer accounts covering a full 12 months activity and current period pricing schedules. The output being the calculation of the annual amounts payable at current prices for a full years activity for each of several thousand individual customers⁷.

The ABS is currently working on the development of a similar facility to construct price indexes for telecommunication services, which can then be extended to other services.

⁷ See ABS 2004 for details.

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