Box: Underlying Inflation and Taxation Changes

The introduction of the major elements of the new tax system in July will lead to temporarily higher CPI inflation in the September quarter 2000, followed by a period of time during which reductions in various taxes flowing through to prices will reduce measured inflation. Once the effects of the tax changes on prices have flowed through, inflation is expected to return to rates consistent with the Bank's target, but there will be a permanent effect on the level of the CPI relative to the path that it would otherwise have followed.[1] Measures of underlying inflation, which are designed to abstract from the volatility inherent in the CPI, cannot remove the effects of the wide-ranging changes to prices associated with the tax changes. Consequently, all published measures of inflation are expected to increase temporarily in the September quarter.

Underlying inflation measures, which, along with the CPI, tend to produce similar average inflation rates over a run of years, fall into two broad categories (Table 1).[2] The first two underlying measures in the table are *exclusion-based*, with prices that either have a high average volatility, or which are not market-determined, permanently excluded from the CPI basket. The other two measures are based on *statistical criteria*, which are designed to limit the influence of extreme price changes irrespective of the source. These measures are calculated by excluding a proportion of extreme price changes, but unlike the exclusion-based measures, no judgement needs to be made about which particular items to exclude each period. However, judgement is required as to what *proportion* of price changes to exclude; the trimmed mean excludes a fixed proportion of items (by weight) at the extremes of the distribution of price changes, while the weighted median excludes all but the middle price change in each period.

The tax changes will not necessarily affect the CPI and underlying measures of inflation to the same extent. For the *CPI excluding volatile items*, the effect of the tax changes can be expected to be slightly larger than for the CPI, as the prices of the excluded items – namely fresh fruit and vegetables and automotive fuel – are not expected to be significantly affected by the tax changes. The net tax effect on the *private-sector goods and services* measure may be somewhat larger,

Table 1: Measures of Inflation		
	Average since mid 1993	**Year to June 2000**
CPI	2.1	3.2
Underlying measures:		
CPI excluding volatile items[a]	2.3	2.6
Private-sector goods and services	2.2	2.4
Weighted median	2.1	2.4
Trimmed mean	2.1	2.7

(a)   CPI excluding fresh fruit and vegetables and automotive fuel.

1. Statement 3 in Budget Paper No 1, *2000-01 Budget Papers* presents estimates by the Commonwealth Treasury of the effect of the new tax system on prices.
2. See 'Measuring 'Underlying' Inflation', Reserve Bank of Australia *Bulletin*, August 1994 for more details on the concept of underlying inflation and the definitions used here.

since a greater proportion of the CPI basket is excluded, for which the net price effect of the tax changes is also expected to be negligible. In the case of the two statistically based measures of underlying inflation, the expected relative impact of the tax changes is less clear. Although we have some idea of the distribution of tax-related price changes across different items of the CPI, this is not sufficient to determine whether the effects on the *median* and *trimmed mean* measures of inflation will be greater or less than the total effect on CPI inflation. It is the distribution of *overall* price changes in the CPI basket – the combination of tax-related price changes and persistent inflation – that will determine the precise effect on the median and trimmed mean.

Since all published measures of inflation will be affected by the tax changes, the ABS proposes to calculate a 'constant tax rate measure' for the September quarter CPI. In November, the ABS intends to publish the proportion of the change in the September quarter CPI attributable to changes in tax rates between the June and September quarters 2000. The constant tax rate measure can abstract only from the first-round effects of tax changes on prices, arising mainly from the introduction of GST and the removal of WST on final goods.[3] Accordingly, this approach will provide an upper limit of the first-quarter price effect of the tax changes, because it does not take into account the downward influence on prices from reduced transport costs and the removal of WST at intermediate stages of production. However, these second-round effects are not expected to be fully passed through to retail prices in the September quarter, thereby reducing the degree of overestimation. Additional uncertainty in these calculations arises from the assumption that a 10 per cent GST has the same effect on the retail price as a 10 per cent WST, even though the WST is levied at an earlier stage of production and therefore represents a smaller amount of tax for a given tax rate. This provides a possible source of offsetting downward bias in the estimate of the net tax effect.

As has been noted in the Bank's policy statements, the Bank will seek to look through the wide-ranging, but temporary, effects of the tax changes on the published measures of inflation. Monetary policy will be based on assessments of developments in 'ongoing' inflation – that is, inflation net of the effects of changes to the tax system. Thus, the conduct of monetary policy in coming quarters will require careful interpretation of the data on price developments and assessment of the various estimates of the net tax effect on prices that are available.

3.   See *Price Indexes and The New Tax System*, ABS Cat No 6425.0 for further details.