Government charges, the CPI and monetary policy

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Conceptually, inflation is best understood as on-going erosion of the purchasing power of money. Consumer price inflation is generally measured as changes in the weighted average of the money prices of a basket of selected goods and services. This raises questions concerning the choice of goods and services which constitute that basket, what sort of price changes should be counted as part of the general 'inflation process', and whether all price changes should be viewed in the same way, irrespective of why they have occurred.

One question that arises in this regard is how prices which are set or considerably influenced by the government should be taken into account. Are movements in these prices part of the inflation process that monetary policy should be concerned with, or should they be viewed differently?

The following article suggests that what matters for monetary policy is not so much whether it is the government that is the source of the price level disturbance. Rather, the key considerations are the size of the price shock, the sharpness of the monetary policy adjustment that would be required to offset it, and the implications for inflation expectations. In this sense, price level disturbances caused by changes to government-set prices and charges are not fundamentally different from those that originate elsewhere; for example, from foreign price shocks.

1 Introduction: the issue

Since 1984, government reforms have had a substantial effect on the Consumers Price Index (CPI). For example, there has been a shift from direct tax financing of publicly provided goods and services towards user charges, and public trading enterprises have been corporatised or privatised. The latter has resulted in increased competitive pressures on prices in some areas, and the removal of subsidies in others. In addition, some indirect taxes have been reduced or eliminated, while new charges for some government services, and a goods and services tax (GST), have been introduced. The openness of the economy has increased, as a result of reduced tariff protection for domestic industries from external competition. All of these changes have had implications for price movements, both upward and downward.[1]

During the same period, the Reserve Bank has also adopted, as the single objective of monetary policy stability, in the **general level** of prices. This was formalised with the passage of the Reserve Bank of New Zealand Act 1989. One of the issues that has had to be addressed in this context has been how to take account of government policy-led price adjustments that cause a shift in the general, or average, level of prices. The framework within which this issue is addressed in New Zealand is provided by the Policy Targets Agreement (PTA) between the Treasurer and the Governor of the Reserve Bank.[2] This agreement establishes an inflation target (currently 0 to 3 percent annual CPIX inflation, where the CPIX is the Consumers Price Index excluding the credit services group).[3] The PTA also states in clause 3 that:

> "(a) There is a range of events that can have a significant temporary impact on inflation as measured by the CPIX, and mask the underlying trend in prices which is the proper focus of monetary policy. Such disturbances include, for example, shifts in the aggregate price level as a result of exceptional movements in the prices of commodities traded in world markets, **changes in indirect taxes, significant government policy changes that directly affect prices,** or a natural disaster affecting a major part of the economy (emphasis added).

[1] This article is concerned only with the **direct** impact of government pricing and tax policy on the CPI. Macroeconomic implications of government spending for aggregate demand, and hence general inflationary pressures, are not discussed.

[2] The text of the PTA is available on the Reserve Bank website: www.rbnz.govt.nz.

[3] From the inception of the inflation-targeting framework, the Reserve Bank has routinely excluded interest rates from the target measure of inflation.

(b) When disturbances of the kind described in clause 3(a) arise, the Bank shall react in a manner which prevents general inflationary pressures emerging."

Thus, in formulating monetary policy to maintain stability in the general level of prices, the Bank has scope to interpret government policy-led price changes differently from other price changes. This article examines different perspectives on these issues and discusses how the Reserve Bank takes the effects of government charges into account.

2 Perspectives on government policy and consumer price inflation

A useful starting point is to consider why changes to government charges and taxes may pose issues for monetary policy. Two broad strands of thinking can be identified.

a) A question of definition

One approach involves a question of definition: that is, are increases in government charges, and changes to indirect taxes which are reflected in the market prices of goods and services, part of the 'inflation process'?

Inflation is held by many to be, fundamentally, a 'monetary' phenomenon; that is, the result of spending that is excessive in relation to the economy's capacity to supply real goods and services (or, simply, too much money chasing too few goods and services). Understood in this way, inflation is generated from the interaction of demand for and supply of goods and services in the market-place, not from the direct result of the government exercising its legal capacity, through legislation and regulation, to adjust taxes, levies, and charges. One can consider indirect taxes and government charges to be little more than an alternative to income tax as a source of government revenue: the form is different, but the substance is the same.[4] If this is the case, then it is not obvious that one form of revenue raising (charges, levies and indirect taxes) should count as contributing to inflation while others (notably income taxes) do not. According to this view, increases in government charges and indirect taxes, **by definition**, are not inflation.

There are also conceptual difficulties with the inclusion in the CPI of those government charges that represent a 'price' for a composite bundle of goods and services. An example is the rates charged by local government. In practice it cannot be known whether an increase in local government rates reflects a 'pure' price change, or whether there has also been a change in the quantity (or quality) of the goods and services provided. If the nature of the goods and services provided has changed, true 'inflation' will be mis-stated. Therefore some argue that rates should be excluded from the CPI altogether, reasoning that including local government rates is analogous to including income tax, which is also a 'price' for a composite bundle of goods and services.

b) Interaction with monetary policy

A second strand of thinking about government charges, indirect taxes, and inflation abstracts from whether government-led price changes are part of the inflation process by definition. Rather, it tends towards the view that 'a price is a price', regardless of who sets it. Certainly, the government has legislative and regulatory powers to set prices, but other agents in the economy, such as those that are natural monopolies, also enjoy substantial degrees of market power. Certainly the OPEC oil-exporting nations, for example, enjoyed a large measure of market power in the 1970s.

This perspective suggests that it is a sudden, large change to an important price, or group of prices, in the economy that may create an issue for monetary policy – irrespective of the source. In this circumstance, to maintain strict stability of the overall level of prices, monetary policy would have to drive down the average level of other prices in the economy. If, as is likely, this would result in a sizeable contraction of economic activity, then consideration should be given to whether it would be better for monetary policy not to attempt to hold the overall price level stable, but rather look through the price 'shock'.

[4] Of course, this is something of a simplification. The choice of revenue base does have implications for microeconomic incentives: choices between consuming and saving, and the pattern of consumption between competing goods and services.

An important additional consideration, however, is the implications of the 'shock' for inflation expectations and wage and other price-setting behaviour. It does not automatically follow that large, one-off, relative price changes should be ignored by monetary policy. If it is thought likely that there exists scope for those affected by a price rise to 'pass on' the increase, then monetary restraint will be required to prevent a one-off relative price shock from developing into on-going, generalised inflation. An example is the way in which higher oil prices following the oil shocks of the 1970s were passed on throughout the economy for a prolonged period. Monetary policy at that time accommodated that 'second round' effect of the oil shocks and high on-going inflation was the result.

By contrast, the introduction of GST in 1986 did not generate the same on-going inflation process. This was doubtless in large part because compensating cuts to income tax were made at the same time, meaning that wage demands should not have been adjusted upward to compensate for a perceived drop in the spending power of nominal income. Wage inflation and goods price inflation are closely linked, and this can lead to an on-going inflation process well after the original shock has dissipated. Hence, when considering the effect of increases in government charges (or any other large relative price change in the economy) consideration needs to be given to whether there are any offsetting influences on the overall level of prices, either within the government sector or more generally.

These considerations suggest that, when increases in government charges and indirect taxes occur, the appropriate monetary policy response turns not so much on the fact that it is the government that is involved, as on the magnitude and nature of the price level 'disturbance', and the implications for inflation expectations. According to this view, incremental increases in government charges should be treated no differently to the multitude of other relative price changes that occur in the economy. Unless the changes are relatively large and abrupt, monetary policy should still be able to maintain a stable overall level of prices, without sharp, activity destabilising, adjustments to policy settings being required. An additional consideration is that incremental, on-going price adjustments are just as likely as one-off changes, if not more so, to feed into inflation expectations.

Large price adjustments, however, might appropriately be 'looked through' by monetary policy, at least to the extent that a feed-through to inflation expectations is not a concern.

3 Methods of measuring the effect of government policy on the CPI

There are two basic approaches to taking account of the direct effect of government policies on the measured level of prices. They correspond to the two different perspectives outlined in the previous section. Firstly, one can attempt to **define the boundary** between government charges and market prices. Alternatively, one can take a more flexible approach, and focus on the **nature, size, and implications** of the price shock and of any monetary policy response to it, without being concerned with whether it emanates from the government or private sector.

a) A defined boundary

There is no single, correct definition of the boundary between government-determined or influenced prices and 'market' determined prices. Some prices are clearly set by government bodies. These include, for example, Housing New Zealand (HNZ) and local government housing rents, local government rates and transport charges, the public broadcasting fee and motor vehicle re-licensing and registration fees.

In addition, some private sector prices are strongly influenced by government policy. Many government regulatory policies affect pricing behaviour in the private sector. Examples include the recent removal of restrictions on parallel importing, and district plans established under the Resource Management Act that restrict the supply of land available for residential development. Also, there is government funding or subsidies for a range of privately-provided goods and services, such as prescription medicines and general practitioner visits for some categories of patient. Conversely, some goods and services are provided by publicly owned trading enterprises (eg New Zealand Post), and in these cases prices are set mainly in accordance with normal commercial practice. Consequently, ownership of the provider is not a reliable

guide as to whether prices are primarily policy-led or market-determined.

The government influences other prices through taxes (eg cigarettes, alcohol and petrol). The prices for these items are the result of a combination of policy and market forces. Below the retail level many prices are influenced, directly and indirectly, by tariffs (such as prices for clothing and, until recently, motor vehicles), also making for an unclear division between government policy-induced price changes, and those determined in the market.

This ambiguity has lead to statistical definitions of 'government charges' with varying breadth of coverage. One approach is to define 'government charges' as only those prices which are set **directly** by government agencies. This approach is used by the Australian Bureau of Statistics (ABS) in calculating a "CPI excluding selected state and local government charges" series. The series excludes fees actually set by government agencies, rather than attempting to capture all price effects of government policy. This definition covers such prices as rents for government-owned housing, electricity generated by government-owned generators, and rates charged by local governments (see ABS Consumers Price Index Quarter 1 1996, p. 11).[5]

An alternative demarcation is to identify those prices that are determined **primarily** by government policy rather than by market forces. Statistics New Zealand (SNZ) use this broader concept to define 'government charges' as "any charge that could be subject to government intervention" (SNZ 1997, p. 34). Table 1 lists the prices included in the series.[6]

Taken together, the series covers 9.7 percent of the total New Zealand CPIX regimen.[7]

Table 1
SNZ 'government charges'

HNZ and local authority rents
local authority rates
television licence fees
vehicle re-licensing and registration fees
prescription charges
electricity charges
New Zealand Post delivery charges
government credit card charges
tertiary education fees
primary and secondary school donations
public hospital charges
medical general practitioners' fees
oral contraceptive prices.

(SNZ: Consumers Price Index, June 1998 quarter, Table 3.1).

Clearly, in practice, defining a boundary between prices that are set chiefly by policy, and those set in the market, is far from straightforward.

b) A more flexible approach

The approach to these issues reflected in the Policy Targets Agreement is based more on the concept of 'policy disturbances' or 'shocks' than on a precise definition of the boundary between the government and private sectors. The PTA does not define which price changes resulting from changes to government policy are excludable.

The vagueness of the PTA is not the cause of the ambiguity regarding the appropriate monetary policy response to the effect of government charges and indirect taxes on inflation, but a reflection of it. In essence, changes to government-set, or government-influenced, prices in the economy have to be assessed on a case by case basis. Account should be taken of:

- The **'significance'** of the price adjustment. This must be judged, in practice, by such factors as the size of the shock, the importance of the expenditure item in the economy (particularly, its weight in the CPI regimen), and whether the price adjustment is sudden or gradual.
- Whether there are any **offsetting relative price shocks** (in the government sector or elsewhere).
- How the price adjustment in question might impact on inflation **expectations** and downstream price and wage-setting behaviour.

[5] By contrast, the Department of the Treasury in Australia defines 'core inflation', which tends to be used as the central inflation measure for monetary policy purposes, as excluding all prices "significantly affected by exogenous factors" (ABS 1997, p.64). Prices are excluded for three potential reasons: volatility, seasonality, or because they are policy-influenced.

[6] Prior to September 1995, the series covered only the first six of these prices.

[7] The ABS also publishes an index of "private goods and services". For the purposes of calculating this index, it takes a view of the scope of the public sector to be excluded, which roughly corresponds to that adopted by Statistics New Zealand, but is even broader (for details, see ABS 1996 p. 13).

In the interests of transparency, the Reserve Bank calculated and published a (quarterly) measure of 'underlying' inflation prior to November 1997. This measure was derived by estimating the magnitude of relative price shocks falling within the scope of the sorts of events mentioned in clause 3(a) of the PTA (quoted above). These estimates were made according to a standard set of criteria. In order to derive the measure of underlying inflation from official CPI inflation, any qualifying relative price shock estimated to contribute one quarter of a percentage point or more to the annual rate of inflation (in either direction) over a four quarter period was removed.

Table 2 lists the adjustments, originating from a change in government policy, that the Bank made to underlying inflation between 1989 and 1997.

Table 2
Government policy-related adjustments to underlying inflation

Tariff reductions	1988-91
GST	1989
Public broadcasting fee	1989
Land tax	1989-91
Health charges	1989-92
Vehicle registration and re-licensing fees	1989, 1991, 1995
Local authority rates	1990, 1993-94
Tertiary education fees	1990, 1993-95
Regional petrol levy	1992
HNZ and local authority rents	1992-94

This approach highlighted that monetary policy is properly concerned with the trend rate of increase in prices on average, and that short-term aberrations caused by significant relative price shocks should be looked through. In November 1997, the Bank stopped calculating and publishing underlying inflation. There were two main reasons behind the decision. Firstly, few adjustments to the standard measure of CPI inflation had been made in the preceding two to three years. Secondly, there was increased recognition that calculation and publication of a standard underlying inflation series did not sit comfortably with the 'case by case' approach suggested by the PTA.

Indeed, in a number of respects, the Bank's methodology for calculating underlying inflation had many of the hallmarks of an approach based primarily on the assumption of the existence of a reasonably precise boundary between government sector and private sector prices. The difficulties inherent in such an approach became increasingly evident with time. For example, health charges were removed from underlying inflation between 1989 and 1992. Over this period it was relatively straightforward to divide health charges into those determined by government policy, and private prices. Today, however, this is a difficult exercise, with the boundary becoming increasingly murky. Tracing changes in policy through into measured prices becomes a perplexing problem.

The move away from routinely calculating a measure of underlying inflation does **not** reflect a fundamental change to the way in which the Bank views government-led price changes (or other relative price shocks). Such disturbances remain an issue for monetary policy when they are judged not to be part of the general inflation process, and when adjusting monetary policy to counter their short-run general price level effect would impose unjustifiable costs on the economy. When such disturbances occur in future, the Bank will provide an overall assessment of the implications of the shock for inflation and give account of the judgements that lie behind the chosen monetary policy response. Clearly this will involve quantifying the shock, and providing estimates of the shock-exclusive 'core' or underlying rate of inflation. However, it is recognised that there are a number of ways to do this, and that a more complete picture can often be gained by looking at the data from different angles. Indeed the Bank already publishes in its quarterly *Monetary Policy Statements* alternative measures of core inflation, as well as of inflation expectations. The principal core inflation measures are a weighted median and a trimmed mean measure. These are measures of central tendency which focus on the typical rate of increase in prices, and either exclude or de-emphasise the more extreme movements.[8]

[8] See Roger (1995) for further discussion of these measures.

4 Placing the impact of government charges on the CPI in context

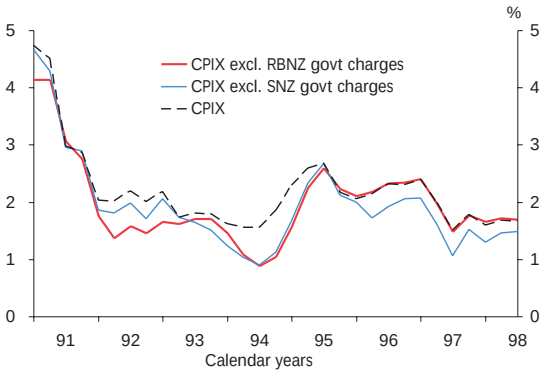
a) The government sector contribution to inflation

A common perception is that changes in government policy have, on balance, boosted CPI inflation. For example, the Canterbury Manufacturers' Association (CMA) stated in March 1997 that "central and local government can't stick their heads in the sand and ignore the effect their monopoly pricing and big spending plans are having on the local economy. They fuel inflation, forcing the Reserve Bank to keep interest and exchange rates higher than they should be" (CMA *Press release* 26 March 1997). This view implies that, for a given inflation target, the brunt of monetary policy restraint was being placed on the private sector, particularly on the tradeables sector of the economy.

This quote captures the fact that there are two aspects of the government's influence on prices. Firstly, there are government pricing and charging policies which have a **direct** effect on measured inflation (although it is difficult to measure). Secondly, there is the impact which more general government policy has on aggregate demand, and thus, **indirectly**, on inflation. Relevant policies include fiscal spending decisions, immigration policy, and decisions regarding general taxation levels. These effects, although important, are even more difficult to quantify and are beyond the scope of this article.

Figure 1 provides a basis for assessing the extent to which government pricing and charging policies have contributed **directly** to inflation. It shows the CPIX inflation rate compared with two 'exclusive-of-government charges' measures. Firstly, the 'CPIX excluding RBNZ government charges' measure excludes credit services and the government charges which were removed from underlying inflation as listed in table 2 (but does not exclude other price disturbances, such as those to oil prices, which have been removed from underlying inflation in the past). The second is the SNZ 'CPI excluding government charges' series with the credit services component also removed to make it comparable to the Reserve Bank measure. Table 1 lists the components which have been consistently removed from this series.

Figure 1
CPIX, and government-exclusive CPIX series
(Source: RBNZ and SNZ)



The difference between CPIX and the government charge exclusive series reflects the extent to which government charges were increasing faster on average than the overall CPIX measure of consumer prices. This captures the effects of the Government's policy of moving towards user charges, or part charges, for the goods and services it provides.

For instance, during 1992 the Reserve Bank's measure 'CPIX excluding government charges' was significantly lower than CPIX. This was because the Bank removed the impact of increases in HNZ and local authority rents, the regional petrol levy, and health charges. This also explains why the RBNZ measure excluding government charges is lower than the SNZ equivalent over this period, as health charges were not a component of SNZ's 'government charges' measure until September 1995.

During 1994, both government-charges-exclusive measures were markedly lower than CPIX inflation. This was primarily the result of the removal of increases in Housing New Zealand rents and local authority rates from both the RBNZ and SNZ series.

From 1996 onwards, the SNZ measure tracks significantly lower than the Reserve Bank's equivalent, which is almost indistinguishable from the CPIX itself. This is because the Bank did not remove any government charges during 1996 and 1997. The impact of government policy on the CPI since 1995 has been more in the nature of incremental adjustments, rather than abrupt shocks. However, the fact that the SNZ measure of inflation that excludes government charges has remained below the CPIX shows that prices set or directly influenced by government policy have still tended

to track above the average rate of increase in the CPIX measure.

Overall, from 1991 to 1998 the CPIX index increased by 20 percent, the RBNZ 'CPIX excluding government charges' series by 17.9 percent, and the SNZ 'CPIX excluding government charges' series by 17.3 percent. This shows that 'government charges', on average, have been rising at a considerably faster rate than have prices in general. Since 1995, the divergence between the alternative measures has narrowed.

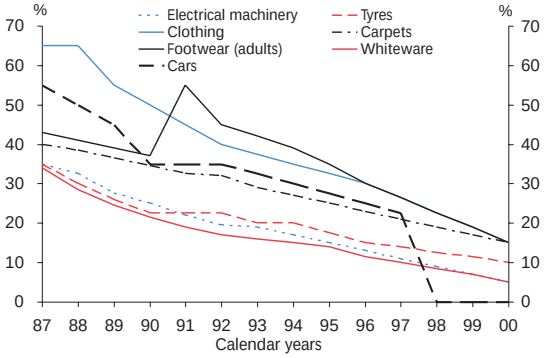
b) Other government influences on prices

Figure 1 shows that government pricing and charging policy has indeed contributed to making CPI inflation higher than it would otherwise have been. In addition to this there is the non-measurable (and highly uncertain) impact that more general fiscal policy has on demand and hence, indirectly, prices. However, other changes to government policy not captured in the above series have placed considerable **downward** pressure on CPI inflation. Previously monopolised industries have been opened to competition (for example, the price of toll calls dropped 37 percent over the six months to June 1998), the ban on parallel importing was removed in the 1998 budget, and tariffs have been reduced. We should therefore consider the **net** effect of changes in government policy on the inflation rate. As an example of an offsetting influence, we examine the case of tariff reductions.

Generally, lower tariffs should feed through into lower prices for tradeable goods, for a given exchange rate. Not only will there be a direct effect, as the price of imported goods falls, but increased competition from imports should ensure that the price of domestically-produced competing goods also falls. In addition, imported goods such as vehicles are an input to many domestic production processes, implying positive supply effects, which act to lower a broad range of prices across the economy.

Figure 2 plots changes in tariff rates for selected goods that were subject to high tariffs in the 1980s.

Figure 2
Tariff rates (July)[9]
(Source: Ministry of Commerce).



Data limitations mean that there have been no comprehensive studies (to the author's knowledge) of the effect of tariff reductions on the overall level of CPIX prices in New Zealand. However, there is some evidence that the effects have been significant. Figure 3 illustrates price level indices for 13 CPI components that may loosely be taken to represent the categories shown in figure 2. These are:

- women's sports and casual wear
- men's sports and casual wear
- new cars
- used cars
- men's casual and sports shoes
- women's casual and sports shoes
- men's dress shoes
- women's dress shoes
- carpets
- tyres and tubes
- power tools
- dishwashers
- clothes washers and dryers

These items, taken together, make up 6.6 percent of the total CPIX regimen, or 11.8 percent of the tradeables index as measured by the Reserve Bank. Also shown in the figure, in bold, is the level of the tradeables index excluding the 13 listed components.

[9] Note: the tariff rates from July 1997 are those announced in December 1994 following the 'post-1996 tariff review', with the exception of motor vehicle tariffs, which were reduced to zero in the May 1998 Budget.

Figure 3
Price levels of tradeables, and selected tariff-affected CPI components
Base: 1989Q1 = 1000

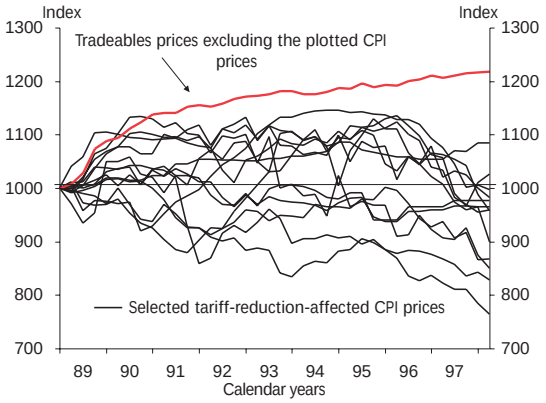
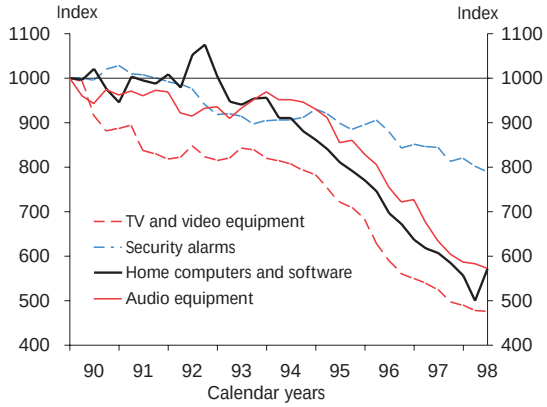


Figure 4
Price level indices of selected electronic consumer goods
Base: 1990Q1 = 1000



The prices of goods on which tariffs were lowered fell relative to other tradeables, supporting the argument that the lowering of tariffs on these goods brought about lower prices than otherwise. Note that these are only a few selected components which have been subject to the most significant tariff reductions. Many more goods prices will have been affected in a less pronounced way.

The SNZ 'excluding government charges' series, shown in figure 1, clearly does not take account of the effects of tariff reductions. The Reserve Bank series accounts for tariff effects only between 1988 and 1991 (as per table 2). As a result of measurement difficulties, the RBNZ measure is adjusted for only the **direct** price impact of tariffs over this period. In addition to this limitation, the PTA-based exclusions, and hence the underlying inflation measure, focused on removing **large, sudden** price changes. Because of the gradually stepped nature of the tariff reduction process, the price effects were long-lasting but dissipated. Hence the Reserve Bank measure 'excluding government charges' does not necessarily truly reflect the **net** effect of government pricing policy any more accurately than does the SNZ measure. Few would argue that tariff reductions since 1991 have had no effect on consumer prices.

c) Government charges compared with other non-demand price level 'shocks'

Because of the difficulties in the definition and measurement of the impact of government charges outlined, the net effect will never be known unambiguously. Notwithstanding this, it is important to place the impact of government on the CPI in the context of other non-demand-led influences on inflation. For example, technological advances have contributed to the price of television and video equipment falling 52 percent since 1990, and those of home computers and software falling 42 percent. Figure 4 shows CPI price indices for selected electronic goods since 1990.

As well as these direct consumer goods, this technological advance constitutes a positive supply shock for many production processes, placing downward pressure on a wide range of goods prices.

Other supply shocks include world price changes. For example, the $US price of Dubai oil has fallen over 63 percent since 1981, and is now at levels as low in real terms as before the first oil shock. The weather is a potential supply shock which has adversely affected prices of late. It is extraordinarily difficult to compare empirically the effects of all these disturbances on the CPI. However, in formulating monetary policy, all these factors need to be considered. Relative price changes occur constantly, and those resulting from large 'supply-side' shocks will often offset each other. This appears to have been the case during the 1990s. On the one hand, the government has phased in higher user charges for a range of government-provided goods and services, but oil price and technology shocks, for example, have had offsetting effects.

5 Conclusion

There is no single, simple means of accurately measuring the effect on the CPI of government charges or policy, *per se* nor is it clear that to attempt to define a boundary between government set or influenced prices and 'market' prices is helpful. Rather, monetary policy is more concerned with differentiating between persistent 'core' inflation, which is what feeds inflationary expectations, and transitory shocks. The PTA points to government policies that have had a direct effect on market prices as one potential source of price 'shocks'. It may be appropriate for monetary policy to 'look through' a shock when:

- the price movement in question is consequential, in magnitude (net of any offsetting price shocks) and/or duration;
- related to this, there would be significant costs in terms of output lost if monetary policy were to attempt to maintain stability in the overall level of prices in the face of the shock;
- the potential for flow-through to inflation expectations, and a rise in inflation across the board, is not a concern.

In assessing the increases in government charges and government-influenced prices that have occurred in the 1990s against these criteria, it is important to consider the impact of other non-demand-led price disturbances. Certainly, significant relative price increases can be traced to the government sector, as charges have been increased to more closely reflect cost. But some government policies, notably the tariff reduction programme, have exerted a restraining effect on prices. Also, other price developments, such as downward trends in the price of oil and a wide range of goods incorporating electronic technology, have been significant over the decade. Factors such as these constitute relative price 'shocks' that have been helpful to inflation management. To at least some extent these will have helped to offset the effect on the overall CPI of the more inflationary aspects of government policy over the period.

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