INTERPRETING THE FISCAL DEFICIT

The 1986 Budget presented not one but five different measures of the Government's expected internal deficit. Some of the reasons why the usual 'Budget Table 2' deficit measure might not be sufficient on its own are presented in this article, along with a simple explanation of a few of the alternative measures.

Introduction

In recent years a considerable amount of attention has been focussed on the Government's fiscal deficit. There are good reasons for doing so, for the deficit can have a significant effect on a range of important economic variables. Because the deficit must be funded through the government stock tender programme it will be a critical factor in determining the degree of pressure which might be placed on domestic credit markets. The deficit will also be reflected in a change in the outstanding stock of debt which means it will have implications for future expenditures and tax burdens and hence the long-term sustainability of the Government's fiscal and monetary stance. Some of these linkages are discussed in the June 1986 issue of the Reserve Bank *Bulletin*.

Unfortunately, the Budget Table 2 deficit, the measure of the deficit which is widely used in assessing the Government's budgetary stance and changes in that stance, was not designed primarily as a tool of economic analysis and is probably not equal to the weight of interpretation that is sometimes placed on it. This is particularly the case at present when the structure of the public sector is undergoing a major reorganisation in order to improve efficiency and financial accountability.

Because an analysis which concentrates solely on the Budget Table 2 deficit measure can be misleading in some circumstances, an annex was presented in the 1986 Budget outlining some of its shortcomings and presenting some alternative measures. This article covers some of the same ground, but examines some of the more unfamiliar measures of the deficit in more detail. The discussion starts with a brief description of the Budget Table 2 deficit. It then goes on to consider some of the shortcomings of that measure as an analytical tool and looks at the rationale and derivation of three alternative measures of the deficit: the government finance statistics (GFS) deficit; the cyclically adjusted deficit; and the inflation adjusted deficit.

The Budget Table 2 Deficit

The accounting approach which gives rise to the Budget Table 2 deficit has a number of features. First, in principle the Table 2 deficit is simply the difference between the cash expenditure and cash receipts of the Public Account and is therefore the amount that has to be financed by borrowing. The expenditure and revenue flows are referred to as 'above the line items' and the financing transactions are referred to as 'below the line items'. This cash receipt and expenditure rule, however, is not always followed consistently. There are a few non-cash items which are included in the expenditure and receipts totals and similarly some cash flows are not treated as expenditure. The reported Budget Table 2 deficit will not therefore precisely match the annual change in the Public Account's net financial position.

Secondly, as the Budget Table 2 deficit covers only the Public Account, it is not therefore a measure of the Government's overall financial surplus or deficit. Most of the Government's trading activities lie outside the Public Account and their activities will only affect the deficit to the extent that they receive funds from the Public Account (typically loans or equity capital) and make cash payments to it (profits and taxation on operating profits). Profits which are withheld, or losses which are financed without recourse to grants or borrowing from the Public Account will not affect the Table 2 deficit.

A third point to note is that the Table 2 deficit differs in two important respects from the profit and losses that are reported by commercial organisations. Whereas the latter represents the difference between current revenues and expenditures the Budget Table 2 deficit includes expenditure on capital items, lending to the public and to public sector organisations, receipts from the sale of capital, and the repayment of loans. In addition, non-cash items such as depreciation and provisions (i.e. for bad debts) which would be recorded in a normal commercial set of accounts are not included in the Budget Table 2 measure.

Table 1
Budget Table 2 Deficits

	$m	% of GDP
1971/72	- 72	-1.1
73	- 206	-2.6
74	- 242	-2.6
75	- 390	-3.9
76	-1002	-8.6
77	- 506	-3.6
78	- 694	-4.5
79	-1446	-8.3
80	-1027	-4.9
81	-1525	-6.3
82	-1818	-6.3
83	-2158	-6.8
84	-3101	-9.0
85	-2784	-6.9
86	-1871	-4.1
87[1]	-2452	-5.0

[1] Budget night Estimate

These differences create problems in analysing the significance of the deficit. For example, if the purpose of the analysis is to assess the extent to which the Budget deficit will place a burden on future generations then it may not be pertinent to include all of that part of the deficit which is due to capital and lending expenditures. Providing such expenditures yield a return sufficient to cover interest costs and to repay the loans then they will be self-funding. Of course, to the extent that these investments prove to be unable to pay their way, the cost must ultimately be borne by the taxpayer.

If the purpose is to assess the implications of the deficit[1] for short-term pressures on domestic financial markets then problems can arise when there are changes in the way various state trading corporations have been

[1] The Budget Table 2 deficit is only the starting point for deriving the 'Liquidity Impact' deficit which is the measure of the public sector's cash impact on the economy and which is the basis on which the net borrowing programme is set. Adjustments must be made for non-cash items in the Table 2 figure, timing differences and non-Public Account influences through the Reserve Bank. These influences will usually be relatively small and the Table 2 deficit will generally serve as a reasonable approximation of the net borrowing requirement.

funded. To illustrate, historically, the lending activities of the Rural Bank, the Housing Corporation and trading entities such as the Energy Department were funded from the Public Account. Funds were also sourced from this account for investment in capital works. The resulting deficit in the Public Account necessitated financing by borrowing on financial markets. As part of the move towards corporatisation these organisations are being required to undertake the required borrowing themselves, and in some cases to repay previous loans. Accordingly, Budget Table 2 expenditure is cut, receipts increase, and there is a commensurate decline in the Budget deficit. In terms of its impact on capital markets, however, the fall in the deficit may have had little, if any, direct impact. If the government trading organisations conduct an identical amount of borrowing in New Zealand, there will be no reduction in pressure on domestic financial markets.

This is not to say that the changes in borrowing arrangements are a waste of time, or simply window dressing the accounts. One of the motivations for the requirement to raise their own funds is that it provides incentives for the relevant state-owned enterprises to manage their capital expenditures and lending more carefully. As a consequence, there may be efficiency effects. The removal from the Public Account of borrowing transactions relating to government trading activities also means that Budget Table 2 is a better source of information on the non-market government sector. The changes do, however, mean that caution will need to be exercised in interpreting year-to-year movements in the deficit.

Government Finance Statistics (GFS)

Another set of accounts which shed some useful light on the structure of the government deficit are the Government Finance Statistics (GFS). These are prepared on a basis which was originally developed by the International Monetary Fund to provide an internationally consistent set of fiscal statistics and have been published along with other Budget tables since 1984. The GFS statistics differ from Budget Table 2 as to what items are included in the expenditure and revenue totals so the overall GFS deficit is a little different from the overall Budget Table 2 deficit. The more important difference, however, is that the GFS statistics distinguish between current expenditures and receipts, capital expenditures and receipts, and net lending to the private sector and to other government bodies.

Thus, by subtracting current receipts from current payments we obtain a measure of the Government's current account deficit or surplus. If this figure is positive it shows that central government is contributing to national savings and, if negative, then savings are being drawn from other sectors of the economy or from the rest of the world, to fund current consumption. Because the current account deficit does not include net borrowing it is not affected by the types of borrowing switches which were discussed above.

Several broad features are evident from the data in table 2 which shows the Government's current account balance, net capital expenditure, and net borrowings as a proportion of Gross Domestic Product (GDP). The first is that the current account deficit is considerably smaller than the Budget Table 2 deficit. Indeed, until 1977/78 the Government has generally run a surplus on current account. The reason for the difference is that government's capital expenditure and loans to trading organisations etc. have substantially outweighed capital receipts and loan repayments which until recently have been quite minor items.

A second feature is the changing structure of the overall government deficit. Prior to 1977/78 the larger part of the deficit was accounted for by net lending which reached a peak in 1975/76. The substantial decrease in this figure since then reflects restraint in the level of lending to the private sector through government corporations and a requirement for the trading organisations such as the Post Office and Energy Department to fund more of their capital expenditure from internal revenues. The further sharp decline in the forecast figure for 1986/87 reflects the decisions to require government trading organisa-

Table 2
Government Finance Statistics
% of GDP

	Overall Deficit	Net Capital Expenditure	Net Lending	Current Account Deficit (–) Surplus (+)
1973/74	– 2.4	2.9	2.6	+3.0
1974/75	– 4.1	3.7	4.3	+3.8
1975/76	–10.2	3.1	7.1	–0.1
1976/77	– 4.4	2.6	4.4	+2.6
1977/78	– 5.1	2.6	4.6	+2.1
1978/79	– 8.6	2.5	4.3	–1.8
1979/80	– 5.3	2.0	2.9	–0.4
1980/81	– 6.3	2.0	2.5	–1.8
1981/82	– 7.2	2.0	2.7	–2.6
1982/83	– 7.4	2.0	2.2	–3.2
1983/84	– 9.4	2.1	2.4	–4.7
1984/85	– 8.0	2.2	1.9	–3.8
1985/86	– 4.6	2.0	1.5	–1.0
1986/87[1]	– 5.0[2]	2.0	0.4	–2.5[2]

Source: Budget tables, Treasury
[1] Budget night estimates.
[2] Includes Supplementary Estimates, provision of $250M as current expenditure in 1986/87.

tions to undertake their own borrowings and in certain circumstances to repay debt as noted above.

Another point of note is that government capital expenditure is a relatively small proportion of GDP. This is because this figure only represents expenditure on capital goods for the central government services sector and capital transfers to local authorities, while it excludes capital formation by government trading organisations such as the Energy Department and the Post Office.

Although the GFS current balance provides us with further useful information about the Government's fiscal stance it should not be inferred that this is a key figure which can necessarily be used to distinguish good from bad fiscal performances, or that a zero balance necessarily represents a satisfactory fiscal outcome, regardless of the deficit on the investment and lending side of the account. As with the Budget Table 2 measurement, the nature and quality of the capital components of the deficit must be taken into account.

For example, much of the capital expenditure in the GFS accounts represents investment in non-market activities such as Health, Education and Administration. As this expenditure is not self-funding it places a similar claim on the taxpayer as current consumption expenditure and may have to be funded by a current account surplus. In addition the GFS data takes no account of the depreciation of the existing capital stock. Part of the capital expenditure will be required simply to maintain the current level of central government services.

On the net lending side, the quality of loans is particularly important. A good part of the expansion in this item in the early 1970s was to fund low interest loans for farming and housing and to increase investment in the energy area. These loans were not self-funding and in the event much of the investment in the energy sector proved to be ill-timed. In the meantime the increase in claims on resources implied by the substantial rise in the overall deficit led to substantial imbalances in the economy. Thus, despite the fact that the current account was in balance, the overall fiscal performance was a matter of concern.

The Cyclically Adjusted Budget Deficit

One problem in interpreting short run movements in deficits is that the size of the deficit will tend to change as the growth rate of the economy fluctuates. During a downturn, for example, tax revenues will fall as profits and employment decline, while expenditure will rise as the amount of expenditure on unemployment benefit payments increases. Such an increase in the deficit may not call for any policy action in terms of increasing taxes or reducing expenditure as the increase in the deficit will tend to be self correcting as the economy enters the upturn phase of the cycle.

To distinguish between the cyclical component of the deficit and the remaining component (which is called the structural deficit) it is necessary to establish some benchmark against which actual deficits can be compared. There are a number of ways of doing this. One, which was popular during the 1960s and 1970s, is called the full employment balance method. It involves calculating what the Budget deficit would have been at a full employment level of activity by adjusting income sensitive expenditures and taxes. The difference between the actual and full employment deficits is the cyclical component of the deficit. Except for comparatively short periods when the economy is experiencing unusually high levels of activity compared to its capacity, the cyclical adjustment will always be positive, and the structural deficit will be lower than the actual deficit.

There are, however, a number of problems with the full employment cyclical adjustment. First, it is critically dependent on the definition of what constitutes a full employment level of output. However, it is not easy to determine full employment on a consistent basis, especially over a period of time. For example, in New Zealand before the mid-1970s full employment generally meant that measured unemployment was close to zero. Now it would appear that the economy can encounter capacity constraints when levels of registered unemployment are still relatively high by historical standards.

Secondly, the full employment balance method implies that full employment is the primary object of policy and that it can reasonably be expected that the economy will return to that state within a short period of time. In practice, however, it may be necessary to trade off full employment against other objectives such as price stability, and there may be no presumption that the economy can or should return to a full employment level of output during the period of a single business cycle.

Table 3
Cyclically Adjusted Deficits

	Cyclical Adjustment	Cyclically adjusted Table II Deficit
1983/84	+0.8	-9.8
1984/85	-1.1	-7.8
1985/86	-0.8	-4.9
1986/87[1]	+0.6	-4.4

Source: Treasury
[1] Budget night estimate

A method which avoids making some of the judgments implicit in the full employment technique is simply to run a trend line through actual observed levels of economic activity and use that as the benchmark to estimate the structural deficit. Estimates of the cyclical component using this methodology for recent years and a forecast for the current year are presented in table 3. The data show that in recent years the cyclical component has been relatively small compared to the structural deficit and was seldom greater than plus or minus 1 per cent of GDP. Nevertheless, cyclical influences can account for a significant proportion of year to year variations in the size of the deficit.

From 1983/84 to 1984/85 for example the sharp upturn in economic activity can be credited with reducing the reported deficit by around $600 million compared to a total reduction of less than $400 million in the overall deficit. On the downside of the cycle, the decline in economic activity during 1986/87 is estimated to add $600 million to the deficit compared to 1985/86, accounting for nearly all of the reported deterioration in the Budget Table 2 and GFS current account deficit.

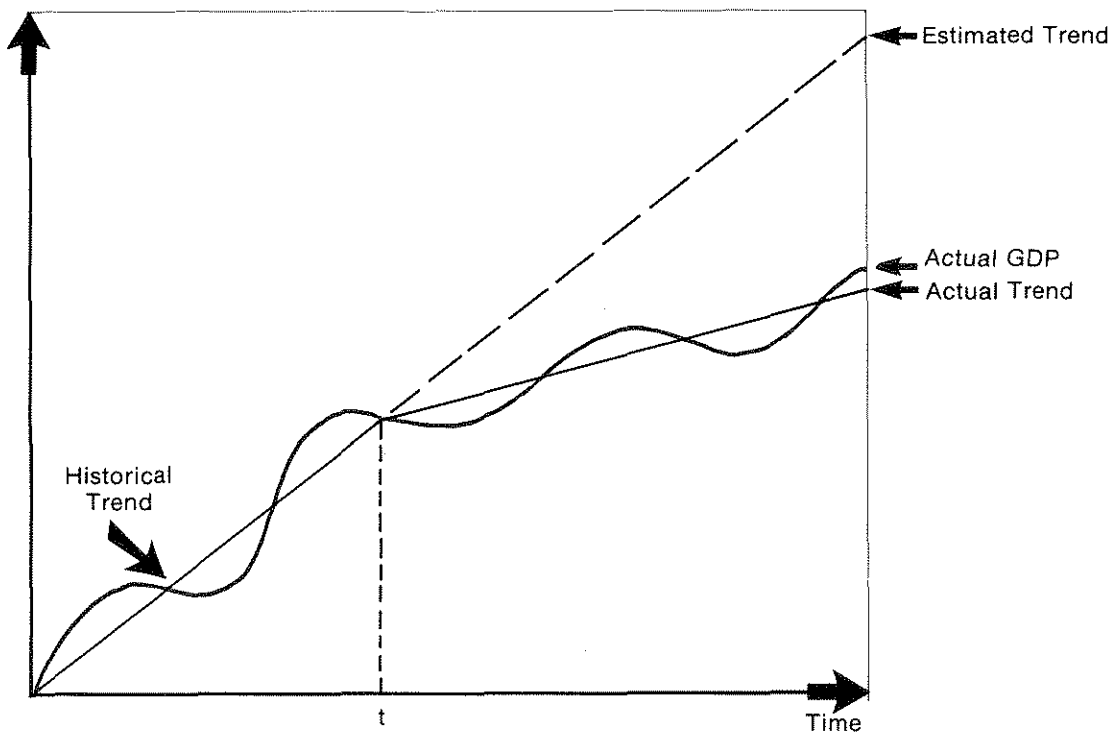
Although relatively simple, this cyclical adjustment methodology is also not without its problems. In particular, the assumption about the expected trend growth rate in the economy is critical in calculating forecasts of the cyclical component. If for some reasons (i.e. an oil shock) an economy shifts away from its historical trend rate of growth to a higher or lower path then a cyclical adjustment based on the assumption that earlier trends would continue would be misleading. In figure 1, for example, analysis of the Budget deficit conducted at the time may have assumed a continuation of the historical trend rate of growth and would have interpreted the observed shortfall from that growth rate as simply a cyclical movement. Much of the consequent deterioration in the Budget balance would therefore have been labelled cyclical, implying no requirement for corrective action.

Inflation Adjusted Deficit

It is widely understood that when there is an anticipated inflation, interest rates will tend to rise to compensate holders of financial assets for the decline in the purchasing power of those assets. Nominal interest rates, therefore, consist of two parts - a real component and an inflation premium equivalent to the average rate of anticipated prices increases over the life of the asset. From an economic perspective, this second component can be regarded as a principal repayment, but in conventional corporate and government accounts it is treated as a current expense. Because the New Zealand Government is a significant net debtor, and because domestic inflation has been relatively high in recent years this treatment of interest can make a significant difference to the recorded Budget deficit.

The point can best be illustrated by comparing two simple sets of government accounts. In both cases it is assumed that the Government's initial level of net indebtedness is $10,000 million and that the real interest rate is 5 per cent. In the first case there is price stability, and the nominal interest rate is also 5 per cent. In the second, it is assumed that there has been an ongoing fully anticipated inflation of 10 per cent, and the nominal interest rate is 15 per cent.

Figure 1
Time Trend of Gross Domestic Product after Exogenous Stock



Case 1

No Inflation

	$m.
Non-Interest Expenditure	10,000
Interest Expenditure	500
Total Expenditure	10,500
Revenue	10,000
Deficit	500
Debt at end of year	10,500
GDP	42,000
Debt/ GDP Ratio	25%

Case 2

Inflation of 10 per cent

	$m.
Non-Interest Expenditure	11,000
Interest	1,550
Revenue	11,000
Deficit	1,550
Debt at end of year	11,550
GDP (measured at end of year prices	46,200
Debt/GDP ratio	25%

The effect of the increase in inflation has been to increase the conventionally measured deficit by $1,000 million, and this amount is borrowed from the private sector. However, the real burden of the end-of-year debt (the debt to GDP ratio) is the same in both cases. This implies therefore that the true economic deficit in case two must have been the same - $500 million - as in case one. The deficit in case two is therefore overstated by $1,050 million.

A further problem with the Budget Table 2 treatment of debt servicing expenses is that it does not treat the inflation premium of different types of financial liabilities consistently. Between 1977 and 1984 the Government issued nearly $1.2 billion worth of inflation indexed debt instruments, of which less than $700 million is still outstanding. The real interest on those bonds is treated as expenditure but the inflationary compensation component is not. While this is an appropriate treatment from an economic point of view it differs from the treatment of conventional debt even where that debt has an identical expected cost.

There is a similar effect when the mix of foreign and domestic debt changes. As practically all of New Zealand's external debt is denominated in the currencies of countries with very low inflation rates, the nominal interest rates on that debt are comparitively low. Over the longer term, however, there is an expectation that most of the differential between the interest cost of foreign and domestic debt will be balanced by exchange losses due to the depreciation of the New Zealand dollar, against the creditor currencies. Overall, the expected cost should work out to be about the same. However, in the Table 2 account exchange losses are not included as an expenditure item which means that reported debt servicing costs, and hence the deficit, will vary depending on whether borrowing is conducted in New Zealand or overseas.

The best way to correct for these problems and therefore obtain a consistent and more economically meaningful measure of the deficit is to inflation adjust the Public Account. Basically this involves subtracting from the deficit a measure of the inflationary dimunition of the real value of the Public Account liabilities and adding on the inflationary losses on assets. With a 10 per cent inflation rate, for example, there would be an adjustment of $100 million on assets or liabilities of $1,000 million.

Table 5 shows the magnitude of the inflation adjustments to the Table 2 deficit for the years 1970/71 to 1985/86 together with a forecast for 1986/87. Until comparatively recently the adjustment was relatively small compared to the Table 2 deficit despite the high rates of inflation in New Zealand. There are two reasons for this. First, a significant proportion of the Public Account debt is denominated in foreign currencies; in particular the US dollar, the yen, the Deutschmark and the Swiss franc. As inflation in those countries has been lower than in New Zealand the inflation adjustment is correspondingly lower (see table 6 for a comparison of the New Zealand inflation rate with the debt weighted foreign inflation rate). Secondly, the Public Account has a comparatively large stock of financial assets (the Rural Bank, the Housing Corporation, the Energy Department and the Post Office are the largest borrowers). Net domestic borrowing by the public sector was therefore relatively small and thus the overall inflation adjustment was also small. In recent years, however, much less of the deficit has been due to net

Table 4
Public Account Financial Assets and Liabilities

	Internal Debt			External Debt		
$million March	Internal Debt[1]	Internal Financial Assets	Net Debt	External Debt	External Assets	Net External Debt
1972	2,506	2,396	110	654	186	468
1973	2,912	2,637	275	564	235	329
1974	3,173	2,838	335	465	184	281
1975	3,316	3,345	- 29	863	220	643
1976	4,088	4,222	-134	1,463	258	1,205
1977	4,457	4,843	-386	1,827	272	1,555
1978	5,025	5,485	-454	2,447	414	2,033
1979	5,579	5,883	10	2,920	256	2,664
1980	6,717	6,484	289	3,568	266	3,302
1981	6,175	7,086	289	4,236	261	3,975
1982	8,227	7,853	973	5,549	411	5,138
1983	10,026	8,044	2,918	7,765	992	6,773
1984	12,871	8,897	4,749	8,226	954	7,272
1985	15,042	9,839	5,992	12,409	1,091	11,318
1986	16,646	10,246	7,024	14,726	1,119	13,607
1987	19,264	11,762	9,218	15,654	1,189	14,465

Source: Budget Table
[1] Excludes Debt held within the Public Account and Inflation Proofed Bonds

Table 5

	Inflation Adjustments as % of GDP			Inflation Adjusted Deficits as % of GDP	
	To Net Internal Debt	To Net External Debt	Total	Budget Table 2	GFS Current Account
1971/72	0.2	0.4	0.6	−0.5	+4.9
1972/73	0.3	0.2	0.5	−2.1	+2.7
1973/74	0.5	0.2	0.7	−1.9	+3.7
1974/75	0.2	0.4	0.6	−3.3	+4.4
1975/76	0.1	0.6	0.7	−7.9	+0.6
1976/77	−0.2	0.5	0.3	−3.3	+2.9
1977/78	−0.2	0.2	0.0	−4.5	+2.1
1978/79	−0.2	0.7	0.5	−7.8	+1.3
1979/80	0.5	1.0	1.5	−3.4	+1.1
1980/81	0.3	1.2	1.5	−4.8	−0.3
1981/82	0.4	1.1	1.5	−4.8	−1.1
1982/83	1.0	0.9	1.8	−5.0	−1.4
1983/84	0.4	0.6	1.0	−8.0	−3.7
1984/85	2.0	0.9	2.9	−4.0	−0.9
1985/86	2.0	0.9	2.9	−1.2	+1.8
1986/87	2.7	0.4	3.1	−1.9	+0.6

Source: Treasury

Table 6
Inflation Rates

Year ending March	New Zealand Inflation Rate	Debt Weighted External Inflation Rate
1971	10.3	6.4
1972	8.5	6.2
1973	6.0	6.9
1974	10.3	9.8
1975	13.2	10.0
1976	17.1	6.9
1977	13.7	5.0
1978	14.6	4.6
1979	10.4	5.2
1980	18.4	7.2
1981	15.2	8.1
1982	15.8	6.5
1983	12.6	4.1
1984	3.5	2.8
1985	13.4	3.3
1986	13.0	3.0
1987[1]	15.2	1.5

[1] Figures derived from the RBNZ Econometric Model Forecasts August 1986 run)

lending. Consequently there has been a rapid increase in the net domestic debt of the Public Account, and a corresponding rise in the inflation adjustment. The result is that the overall adjustment is large enough to make a very significant difference to the level of the deficit. When applied to the GFS data it shows that the Government is now running a surplus on current account and when applied to the Budget Table 2 deficit it shows that the forecast deficit for 1986/87 is nearly in balance.

It is important to note, however, that the inflation adjusted deficit will only give a good guide to future deficits if the inflationary expectations implicit in the interest rates in government debt are realised. If there is an unanticipated and sustained acceleration in inflation then the real interest paid on outstanding fixed interest debt will be reduced and the future path of the inflation adjusted deficit will also be lower. If on the other hand inflation is lower than anticipated, real interest rates and the real deficit will be higher over the life of the present stock of fixed term debt.

Summary

This article has looked at a number of different measures of the Government's deficit, all of which can give a different picture of the balance between government's revenues and expenditures.

Perhaps the most important message is that there is no one single summary figure that can serve as an indicator of government's impact on the economy. All of the measures that have been discussed above can be useful for certain purposes, and all have their limitations. The Budget Table 2 deficit, for example, is the appropriate starting point if the aim is to determine the Government's net borrowing requirement. But as was pointed out it may be necessary to look at the extent to which certain borrowing transactions have been shifted into and out of the Public Account if the intent is to gauge the extent to which the Government sector's pressure on domestic financial markets is likely to change. If the objective is to assess the extent to which government expenditure is likely to place a burden on future generations, then clearly some adjustment must be made to account for the inflationary diminution of the real value of the Government's net debt. Further adjustments could also be made to fine-tune that measure for cyclical variations in the economy, although it must be recognised that these can be subject to a wide margin of error.

If the wish is to know the extent to which the Government's net wealth has increased or diminished, then no one summary measure exists, although the corporatisation of the Government's trading activities will fill some of the gaps by providing up-to-date valuations of a considerable part of the Government's capital stock.

A further point to bear in mind is that undue emphasis should not be placed on relatively small short-term movements in the deficit, however defined. The deficit is the difference between what are now two very large expenditure and receipts figures and movements in those aggregates can result in disproportionately large shifts in the relative size of the deficit.

Finally, a focus on the size of the deficit should not be allowed to divert attention from a detailed analysis of government expenditure and taxation. Simply getting the balance between these aggregates right does not necessarily mean that the underlying expenditure and taxation policies are being conducted in the most efficient manner.