# THE STABILISATION ROLE OF FISCAL POLICY

NEW ZEALAND PLANNING COUNCIL

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**Planning Paper No. 5: April 1980**

ISSN 0111-0470
ISBN 0-908601-06-9

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## ACKNOWLEDGEMENT

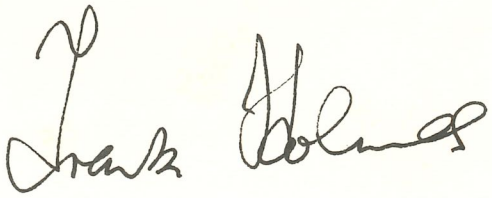
The Planning Council thanks the Reserve Bank for its generous assistance with the production and publication of this report. The views expressed in the paper, however, are those of the authors and do not purport to represent those of either the Reserve Bank, or the Planning Council.

# FOREWORD

In 1978, the Planning Council began a study of public expenditure policies for the 1980s. The issues involved in this area of planning are important, complex and wide-ranging. Eventually, the Council hopes to produce an integrated discussion of these issues and how to deal with them. However, since this will take time, it has seemed desirable to release the results of studies which we have done or commissioned on the way to our eventual goal. Thus, in June 1979, we published 'The Welfare State?' a Council report on social policy for the 1980s. A companion volume on public expenditure and its financing between 1950 and 1979 was designed to help those wishing to study changes in the level and pattern of public expenditure, taxation and borrowing during that period.

As part of our study, we wanted to explore the ways in which public expenditure could be used to help stabilise economic activity and prices without undermining other important goals of policy. We were aware that some interesting work was being done on this question by officers at the Reserve Bank. We decided to ask Dr R. S. Deane and Mr R. G. Smith, as individuals, to do a study for us which would fit into our overall work on planning of public sector expenditure. This paper is the result. It has been broadened into a study of the impact of fiscal policy in the economy and related matters. It is a particularly interesting contribution to the debate on how far it is practicable and desirable to use variations of fiscal policy for stabilisation purposes. It concludes that less variability in fiscal (and monetary) policy than in the past would be desirable in the 1980s. It sees a longer-term view and a co-ordinated approach to both long and short run problems as essential.

The Council thanks Dr Deane and Mr Smith for the contribution which they have made, the Reserve Bank for allowing them to make it and for other assistance rendered, and all those who have helped the authors and ourselves with comments on earlier drafts. We hope that their work will be widely studied and its conclusions applied to future policy.



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# THE STABILISATION ROLE OF FISCAL POLICY[1]

R. S. DEANE and R. G. SMITH

## 1. INTRODUCTION

In assessing the appropriate size and composition of government expenditure it is important to consider not only the needs and desires of the community for government provided goods and services, and the manner in which these can be attained most efficiently and equitably, but also the role of government expenditure in contributing to economic activity and economic stability more generally.

The immediate purpose of government spending on, for example, schools and hospitals may be to provide education and health care; but this expenditure also promotes further rounds of economic activity in the sense that it represents income to the builders of the schools and hospitals, who in turn spend their money on materials and labour; and so a chain of income/expenditure effects is created. Thus the ultimate increase in the community's income resulting from an initial amount of government expenditure will usually be larger (by some positive multiple) than the original injection of government spending. On the other hand, this expenditure has to be financed by taxes or borrowing, and these will represent leakages from the private sector income/expenditure stream. The range of policy issues emerging from a consideration of these overall economic effects of government expenditure, taxation, and borrowing fall under the heading of fiscal policy. Because the components of fiscal policy are so inextricably interwoven, they are considered together in this present paper which is addressed particularly to the stabilisation role of fiscal policy.

Although the paper deals mainly with fiscal policy, the close relationship of this to other forms of macroeconomic policy should be borne in mind. In particular, the stance of monetary policy, which is primarily concerned with the availability of money and credit, has important linkages to fiscal policy. Not the least of these arise from the need to finance the budgetary deficit before borrowing by the use of the instruments of monetary policy, such as either the various reserve asset ratios applied to financial institutions, or the central bank's open market operations which are directed to the sale (or purchase) of government securities. Similarly, the use of exchange rate policy carries implications for both fiscal and monetary policy. Some of these interrelationships are touched on in this paper, but they are not developed in depth.

The various policy instruments available to Government, of which fiscal policy is unquestionably a major one, are adjusted from time to time in an effort to achieve the range of economic objectives established by Government. The concentration of economic objectives is generally upon the desire for economic growth and full employment, and the need to avoid price inflation and balance of payments disequilibrium. But there are also other objectives with which Government is concerned, including distributional, social, cultural and strategic issues. In dealing with this multiplicity of aims, some of which are difficult to define adequately let alone achieve specifically, the policymaker is faced with a twofold dilemma. First, the relative importance of the objectives may change over time and, secondly, the achievement of one objective invariably means sacrifices or trade-offs with respect to some other objectives. Moreover, our understanding of the nature of economic processes, and the lags inherent in these processes, is far from perfect; to say nothing of the difficulties of forecasting what might happen to the economy in the future. These complexities, and they can be substantial, not only inhibit the establishment and operation of an appropriate fiscal policy (or any other policy) at any point in time, but also complicate the assessment of fiscal policy even where one has the benefit of hindsight.

With these warnings, and with an explicit recognition of the subjective and conditional nature of any such assessment process, this paper sets out to describe in straightforward terms the way in which fiscal policy bears upon the economy in general, at a highly aggregative level, and the role it has played — and the role it should have played — over the last two decades. Some implications are also developed for the operation of fiscal policy in the future.

It should be observed that the paper does not deal with questions concerning the size and growth of the government sector per se, other than to the extent that these issues bear on the stabilisation policy aspects. There is no discussion of such matters as government sector 'overload', the desirable form of government expenditure, the 'burden' of taxation or the public debt, and the respective roles of the government and private sectors in performing various functions. These are matters beyond the scope of this study.

The structure of the paper is as follows. The next section discusses the conceptual role of fiscal policy in a relatively non-technical way, sketching some of the theoretical issues and practical problems which warrant consideration. Section 3 looks at the statistical indicators of the impact of fiscal policy, including both the conventional budget data and adjustments to these figures to make them more useful. An attempt is made to interpret historical trends and patterns in fiscal policy. In Section 4, the two-way relationship between the budget and the economy is explored, based partly on earlier research on fiscal multipliers and partly on some new computations looking at the difference between 'automatic' and 'discretionary' effects. Some possible alternative policy regimes are assessed in the fifth section of the paper, which also looks further at such issues as whether government expenditure should, for example, grow at a constant real rate, and whether expenditure changes in the past have been pro or counter-cyclical. The next section comments briefly on the linkages between fiscal and monetary policies, particularly by way of the budgetary financing transactions, and then a range of policy implications are drawn together in the final sections of the paper.

1. This paper was prepared for the New Zealand Planning Council as a contribution to its wider study of government expenditure. The authors are employed by the Reserve Bank of New Zealand, as Chief Economist and Research Officer respectively. The paper has benefited from discussions with various colleagues, and especially Mr M. J. Pope. We are also grateful for comments offered on earlier drafts of the paper by Mr R. A. Buckle, Sir Frank Holmes, Dr G. C. Scott, Ms Suzanne Snively, Mr G. H. Spencer, and Mr G. Thompson. Mr D. Grindell kindly helped us with the preparation of some of the statistical data.

## 2. THE CONCEPTUAL ROLE OF FISCAL POLICY[2]

### (a) The Multiplier Process

A community's gross national product (GNP) comprises the sum of private consumption and investment spending, government expenditure, and the difference between exports and imports of goods and services. Accordingly, an increase in government spending will normally lead to an increase in GNP. Because of the multiplier effects already mentioned, the ultimate increase in national income may well be greater than the initial amount of government expenditure, since this promotes successive rounds of spending and may trigger off increases in other elements of GNP, such as private sector consumption and investment (or imports, which would be an offset to the other changes).

If the economy is in a recessionary phase and operating at less than full capacity, higher government spending may assist in drawing forth increased real output and promote additional employment. This could help overcome a recession. Unfortunately, higher spending may also stimulate the demand for imports and thus worsen the balance of payments. In this sense, the state of the balance of payments may constitute a constraint, often a serious one, on the Government's ability to use fiscal policy to lift an economy out of a recession.

On the other hand, if government expenditure increases during a period when the economy is operating at close to full capacity, or even when particular sectors or industries are in this situation, then there is a greater risk that the higher spending will create an overall level of demand in excess of the available supply of goods and services, with this excess spending spilling over into price rises and higher inflation rates, and/or into imports.

Of course, even during a recession government spending may contribute to higher rates of inflation if, for example, it results in a fiscal deficit which in turn boosts private sector liquidity and provides a base for excessive monetary and credit expansion. In other words, an excessive accumulation of liquidity may simply accommodate or even encourage prevailing cost/price pressures. Similarly, higher government spending which takes the form of, say, increased salaries for civil servants may encourage private sector employees to seek further wage increases themselves on the basis of maintaining their relative position vis-a-vis government employees. If such claims were successful then this too may add to any existing wage/price pressures, and so possibly contribute to inflation. The risks of such an institutionalised process developing must be higher in a situation where government wage rates are more or less automatically linked to movements in private sector rates, as indeed has been the case in New Zealand for quite some years. If additional government expenditure is financed by increased government charges for services or by forms of taxation which are readily passed on in the form of higher prices then these processes may also contribute directly to a faster rate of price inflation.

To assess the ultimate effect of any change in the fiscal position on increases in real output on the one hand and stronger inflationary pressures on the other hand is a difficult task since a multitude of primary and secondary influences may be at work. The inflationary pressures may be reflected in either higher domestic prices or a larger external deficit, with this being the consequence of higher imports and possibly reduced export volumes. The latter effect arises because stronger domestic demand may attract some output from export to local consumption, where such substitution is possible, and because inflation may erode the profitability of exporting and thus eventually reduce export volumes below what they might otherwise have been. In considering these effects, there is a need to take into account the country's exchange rate policy, and the pace of domestic inflation vis-a-vis inflation rates in the economies with which New Zealand trades.

Different forms of government outlays of course have different multiplier effects, both because the recipients of the expenditures have different spending/saving patterns and because the lags involved vary greatly. For instance, wage earners are normally thought to have a relatively high propensity to consume, and thus the multiplier impact of a dollar spent on higher wages for government employees may be larger and quicker than a dollar spent on, say, a government office block or a hydro-electric dam where the gestation periods can be very long and where the recipients, business firms and corporations, may perhaps spend less and save more in relative terms than wage earners.

The method of financing the government spending, whether it be by income or indirect taxes, domestic or overseas borrowing, bank or non-bank borrowing, also has an important bearing on the ultimate impact of the expenditure. Whereas the latter represents an injection to the general spending stream, adding in multiplier fashion to the private sector's income, taxes constitute a withdrawal of funds from the private sector, reducing disposable incomes and discouraging consumption and investment. Taxes too may have multiplier type effects, with the ultimate impact of a tax possibly being greater than the initial amount of the tax. Taxes not only reduce disposable incomes directly but may also have secondary effects such as on prices (most obviously seen in the case of indirect taxes) and on the financial system. Tax flows to Government lower the reserve base of the banking system, and thus reduce the banks' ability to create credit.

### (b) Monetary Effects

Government net domestic borrowing constitutes a withdrawal of funds from the private sector, although the effects on the income/expenditure flows are different from those prevailing in the case of taxes. For one thing, the private sector acquires a claim on government when it buys government securities, a claim which is transferable and at some stage repayable. The sale of securities by Government is usually achieved either forcibly, by higher reserve ratio requirements being imposed on financial institutions, or voluntarily, by Government offering sufficiently attractive interest rates on securities to encourage the private sector to acquire these. In this case, pressures on interest rates carry broader implications for the private sector, such as by making loans more expensive and discouraging spending.

Monetary effects of the Government budget are in fact complex, and serve to emphasise the inter-relationship of fiscal and monetary policy. A fiscal deficit, for example, will have the income/expenditure multiplier effects already discussed, but these take place through the medium of the financial system which itself may contribute to the chain of events. The deficit will have a twofold inter-related monetary impact. First, the money supply will tend to rise, thereby influencing the private sector's wealth and that sector's asset portfolio decisions with respect to financial and real assets of

2. Much more sophisticated and detailed treatments of this subject are available in texts such as Musgrave and Musgrave [11] and Peacock and Shaw [15].

various forms. The choices will be between consumption and investment, deposits and securities, and so on. In turn, interest rates will be affected, as also will be Government's own financing arrangements as far as its deficit is concerned. Interest rates influence expenditures through a range of channels, including the cost of credit, asset valuation factors, and credit availability effects. Financial 'crowding-out' phenomena may arise if Government's demand for credit reduces the availability of finance for the private sector.

Secondly, as the contra to the rise in the money supply resulting from a fiscal deficit, the reserve base of the financial institutions will tend to increase and this will affect both their actual and potential behaviour, especially insofar as their ability to grant credit is concerned. If private sector economic activity is such as to call for additional credit expansion, and if the accretion to financial institutions' reserves is not absorbed or offset by monetary policy actions, then the supply of credit may grow and this too may contribute to further increases in the monetary aggregates and hence stimulate expenditures. The extent to which this process continues depends on a multitude of demand and supply elements, including the size of the fiscal deficit, its method of financing, the stance of monetary policy, and the extent of leakages (imports) through the foreign sector.

### (c) Problems in Assessing Fiscal Policy

Various measures of the fiscal deficit or surplus can be used to summarise in a convenient, albeit oversimplified, way an indication of the net effect of Government spending and revenue operations. In a simple sense a fiscal deficit — an excess of expenditure over revenue — is normally considered expansionary and can be used to counter a recession; whereas a fiscal surplus is normally seen as contractionary and can be employed to dampen an economic boom. But whether fiscal policy can in practice be successfully utilised in these ways is a debatable question, and one that is related to the authorities' ability to understand what is happening to the economy at any particular time, what is likely to happen in the foreseeable future, the lags involved in the economic processes, and the willingness to take the appropriate action.

There are several phases in the time sequence of economic policy formulation. There is the publication lag, or the time elapsing between the occurrence of an event and the collection and release of statistics pertaining to it; the recognition lag, or the time it takes to appreciate the emergence of a problem; the decision lag, which is the time taken to assess and determine an appropriate change in policy; the implementation lag involved in actioning the chosen policy; and the adjustment or impact lag which ensues while the economy responds to the policy change. In sum these lags can be so long that by the time a policy change actually becomes effective the nature of the problem may have materially altered. Accurate forecasting may assist the process, but economic forecasting is itself a chancy business.

A further complication in the practical use of fiscal policy, beyond these questions of how to assess the desirable magnitude and timing of the effects, is the degree of flexibility inherent in Government operations. For example, much of Government's expenditure is of a recurrent nature, involving commitments to widely accepted, longstanding policies where even the change in spending may be based on arrangements which are difficult to alter. These include the provision of basic law and order, education, defence, health and social services, and the payment of civil service salaries, where in each case a certain 'establishment' already exists, requires on-going maintenance, is generally thought to demand continuity of service, and may involve indexing arrangements designed to enhance the automaticity of the expenditure (e.g. government wages determined by a formula linking these to private sector wages; or monetary benefits linked to domestic wage or price rises). Moreover, the lags just mentioned not only imply that it may take quite some time to step up government spending, e.g. on a hydro-electric dam project where the gestation period can be several years, but also suggest the difficulties involved in unwinding or halting large scale projects once these are well in train. Deferment of projects can of itself be expensive in a variety of ways.

On the other hand, taxation may be seen in some respects as a more flexible tool than expenditure. Both direct and indirect tax rates can be changed quite quickly, assuming a willingness to act between annual Budgets where necessary. But again important automatic elements influence tax receipts. Progressive taxes ensure that tax receipts rise proportionately more rapidly than incomes, as more taxpayers move into higher marginal tax brackets with rises in incomes. This effect is commonly known as 'built-in flexibility', 'automatic stabilisation' or 'fiscal drag', the choice of term depending on the economic circumstances and one's point of view.

An effort is made later in this paper to distinguish between 'automatic' and 'discretionary' expenditure and tax changes in order to indicate in an approximate fashion the respective effects of the economy on the Budget (the automatic built-in flexibility) and the Budget on the economy (the exercise of independent discretionary policy).

Apart from the income/expenditure and monetary effects of the Government budget, there is another body of effects which are extremely difficult to quantify and are not covered by this paper. These are the fiscal incentive effects on labour supply, work effort, household and corporate savings, business investment, and export activity. Some of these effects emanate from the major elements of fiscal policy — such as the disincentive to work and save which may result from high income tax rates — while others originate from complex selective fiscal measures, such as export tax incentives, special investment depreciation allowances, savings promotion arrangements, tariffs, employment subsidies, and input or output subsidies.

Against the background of this brief sketch some of the conceptual elements involved in assessing the role of fiscal policy, the paper now turns to the question of indicators of fiscal impact and assessing the effects of fiscal policy on the economy.

## 3. INDICATORS OF FISCAL IMPACT

### (a) Conventional Budget Concepts

Table 1 sets out the conventional Government budget data for the March years 1960/61 to 1978/79 in what is usually known as the Table II format, as published each year in the annual Budget. The table shows total expenditure and current revenue, the annual percentage change in these, and the deficit before borrowing. Despite shortcomings which will be referred to shortly, the table provides an approximate indication of changes in the stance of fiscal policy over the years.

It is best read in conjunction with Table 2 which sets out a range of indicators of changes in the major economic policy objectives; growth, as indicated by the percentage increases in real GNP; unemployment,

shown as a proportion of the labour force; inflation, as represented by changes in the consumers' price index; and the balance of payments position, as illustrated by the current account balance taken as a percentage of GNP.

Using examples based on more recent years, Table 1 suggests the move to a more expansionary fiscal position which took place between 1971/72 and 1972/73. The deficit before borrowing rose sharply, as a consequence of a higher expenditure growth rate and the tax cuts announced in the 1972 Budget. These moves took place against the background (see Table 2) of a rather sluggish domestic economy, rising unemployment, higher overseas reserves and a forthcoming election. Domestic growth did indeed pick up, probably as a response to the fiscal stimulus and partly as a consequence of a favourable export position. In the succeeding two years, 1973/74 and 1974/75, oil prices rose steeply and then export prices fell sharply. For a time, the Government endeavoured to insulate the domestic economy from the full impact of the massive turnaround in the balance of payments by adopting an expansionary fiscal stance. This is best illustrated by the years 1974/75 and 1975/76 during which the external current account deficit reached 14.4 and 9.3 per cent respectively of GNP, and the fiscal deficit before borrowing widened sharply to reach $1,000 million in 1975/76. In each of these years, government expenditure rose at unprecedented rates at around 29 per cent per annum.

Nevertheless, the external deterioration was so large that by 1975/76 little domestic economic expansion in real terms was being recorded. The persistence of the overseas deficit, and the emergence of accelerating high rates of inflation during the mid-1970's persuaded the Government in its 1976 Budget to tighten the fiscal posture. Table 1 shows the resultant dramatic slowdown in expenditure growth in 1976/77, and the greatly reduced deficit before borrowing at $500 million for the year. In its turn, this contributed to the contraction in the domestic economy, particularly in 1977/78.

These changes in policy illustrate two points relevant to the interpretation of fiscal policy.

First, they indicate the need to study not only the net effect of the changes as revealed by Budget data (i.e. the deficit) but also the rates of change in total spending and revenue. It is possible for the deficit not to alter greatly, but for the fiscal stance nevertheless to be significantly contractionary, e.g. in 1967/68 when the deficit before borrowing narrowed only slightly but the rates of increase of expenditure and revenue were substantially reduced in response to the need to cope with the large external deficits of 1965/66 and 1966/67.

Secondly, inspection of Tables 1 and 2 together confirms the existence of significant lags in the policymaking process. For instance, the full impact of the 1976/77 reduced deficit and lowered expenditure was probably not felt by the domestic economy until during the course of 1977/78. Similarly, the 1972/73 expansionary fiscal position probably had its major impact in the following year, 1973/74, when the economy grew at a particularly rapid rate of 7.2 per cent, helped also of course by the lagged effect of the previous year's export boom.

### (b) Adjusted Budget Indicators[3]

If this sort of analysis is to be refined, and if more meaningful and reliable indicators of fiscal policy are to be derived, then it is necessary to re-define the Budget data and take account also of the method of financing the deficit before borrowing.

The need for re-definition arises from the fact that while the bulk of Government's transactions take place with the domestic private sector, other transactions are with the external sector directly and with the Reserve Bank which is really part of central government for financial purposes. Accordingly, transactions of these latter kind should be removed from the Budget data to yield a genuine indicator of net transactions between the Government and domestic private sectors. This is done in Table 3. The first three columns set out the conventional format as published by Government in its Budget each year; the deficit before borrowing, total net borrowing in New Zealand, and the so-called internal surplus or deficit. The next three columns remove from the data all external and within-Government transactions, to provide a new set of 'adjusted' Budget information. The final column of Table 3 suggests that the differences in these measures is not insignificant.

Indeed, different measures tell rather different stories. In New Zealand, the most commonly used indicator of the Budget stance is probably the deficit before borrowing (column 1 of Table 3), a casual inspection of which might suggest that in each year since 1960 the Budget has in an absolute sense been expansionary, i.e. the deficit has implied an injection of funds to the economy. Even if net domestic borrowing is allowed for, as published in the Budgets, there appears to have been internal deficits or only very small surpluses in almost all years.

However, if these figures are adjusted by the removal of Government's transactions with the Reserve Bank and the overseas sector, the net effect of fiscal policy on the private sector's financial base in an arithmetical sense is seen to be a net withdrawal of funds in quite a number of years. Furthermore, if allowance is made for domestic borrowing from the private sector (similarly re-defined), there was a net withdrawal in every year up to 1973/74 (columns 4 and 6 of Table 3). In most of these years, these withdrawals were either partly or more than offset by a combination of Reserve Bank advances to the private sector and the net effect of overseas exchange transactions. As a consequence, in many years over the past two decades the overall cash withdrawal/injection arising from Government, Reserve Bank and external transactions vis-a-vis the private sector has been rather small, as is shown by Table 4.

In some more recent periods, however, even on the basis of a fully adjusted Budget internal surplus/deficit concept (column 6 of Table 3), the fiscal stance was more clearly expansionary, with net injections of funds to the private sector totalling over $600 million in the three years 1974/75 to 1976/77. In at least the first two of these three years, these activities were designed to offset the impact of the historically large external deficits which accrued during this period, a point which is made clear by a comparison of columns 1 and 2 of Table 4. There can be little doubt that in this sense fiscal policy succeeded in moderating, and lengthening, the adjustment of the domestic economy to the dramatic 30 per cent fall in the terms of trade (the ratio of export to import prices) which occurred in 1974/75. Whether such a delayed adjustment process was a wise move is of course a separate question.

Since inflation can over time have a deceptive effect on the size of variables such as the fiscal deficit measures, these are expressed as percentages of GNP in Table 5. This makes for more ready comparisons of changes across different years by using GNP as a scaling factor.

3. The methodology and adjusted data up to 1972/73 are drawn from Pope and Grindell [16]. See also Buckle and Snively [1], [2] and Nicholl [12] for further explanatory material.

**(c) Interpretation of the Data**

**(i) *Budget deficits and surpluses:***

These data confirm the inadequacy of relying simply on the conventional deficit before borrowing measure (Budget Table II basis). Whereas Table 5 shows conventional deficits of this form for most of the 1960's, at about 3-4 per cent of GNP, the adjusted deficit figures suggest a much lesser net impact on the private sector of Government's fiscal activities. Indeed in all but two years in the 1960 to 1974 period, the adjusted deficit/surplus before borrowing was less than 1 per cent of GNP. After exclusion also of domestic private sector borrowing, the consistent adjusted internal surplus position in every year up until 1974/75 becomes quite clear, with figures ranging between about 1 and 5 per cent of GNP.

The countervailing nature of fiscal and overseas transactions is most readily apparent (allowing for lags and timing differences) in the periods of substantial external deficits. For example, these occurred around 1960/62, 1965/67, 1970/71 and 1974/75 onwards. In each of these periods the adjusted internal Budget surplus tended to be at the low end of the range or, as in the mid-1970's, became a series of internal deficits. In other words, the reduced injections (or higher withdrawals) of funds to the private sector resulting from external activities have usually been offset by reduced withdrawals (or higher injections) of funds by fiscal means. Thus, superficial examination of this sort of evidence implies that the fiscal position has usually accommodated a large overseas deficit, at least in the initial stages, rather than endeavouring to force an early adjustment process on the domestic economy. Nevertheless, after a lag, the economy has slowed down in response to the external position as can be seen by studying the growth paths of real GNP in each of the four periods set out in Part I of Table 6. What these figures do suggest is that the domestic slowdown has usually been related more strongly to the overseas exchange position than to any readily apparent tightening of the fiscal stance.

By the same token, in periods of balance of payments current account surpluses or small deficits, the fiscal position has been more inclined to be one of a sizeable adjusted internal surplus, as is shown by Table 6.

The typical pattern in these periods has been for a rise in export prices to lead to an initial improvement in the balance of payments position, higher farm incomes, increased domestic liquidity, and a greater withdrawal of funds by Government through its fiscal operations. Much of this latter process has been essentially involuntary, with rising incomes resulting in more than proportionate increases in tax revenue, especially given progressive income taxes, and increased borrowing by Government from the private sector as a consequence of what has been for many years a captive market for government securities. Under these captive arrangements most financial institutions have been obliged to invest specified but at times variable percentages of their deposits or assets in securities.

Further steps in the process follow over time: other incomes tend to rise, spending and output increase, the demand for credit by the private sector accelerates, and imports rise. Invariably, the improvement in the external accounts is shortlived, lasting only a year or two, with an overseas deficit again re-emerging, usually because of a combination of high levels of importing and a cyclical easing in export prices.

Part II of Table 6 illustrates three of these expansionary periods. It shows how favourable external positions can spill over into faster domestic growth, usually with a lag of a year or so, despite the increased budgetary internal surpluses. In each of the three periods, the final year is characterised by an easing of the fiscal position in response to a combination of the domestic boom in activity and a deteriorating external situation.

As Table 5 confirms, there was for many years until the mid-1970's a much smaller degree of variation in the deficit before borrowing than in the internal surplus after borrowing (compare columns 2 and 4). The relatively small changes in the adjusted deficit before borrowing implied a considerable degree of stability in the fiscal outcome as far as the net 'first round' effect of expenditure and revenue transactions on the financial base were concerned. It was only from 1974/75 onwards that this pattern was broken and large swings in this measure of the deficit took place (see column 3 of Table 4, Part II).

In other words, up until this time, much of the variation in the adjusted internal surplus/deficit could be attributed to domestic borrowing operations and, as just noted, these were probably to a large extent of an involuntary nature.

The dominance of external events in explaining both domestic economic growth and the net outcome of fiscal transactions does not make it easy to disentangle the effects of the Budget on the domestic economy and vice versa. That fiscal policy can have a powerful impact on the economy is not in doubt: one only has to look at the period from 1973/74 to date to be aware of the potential magnitude of these effects.

At the risk of oversimplifying matters, it would appear from Table 6 and Graph 1 that periods of rapid domestic growth have usually followed periods involving relatively favourable balance of payments current account positions. Part II of Table 6 indicates that as the growth rate has picked up through these periods, the internal fiscal balance has tended initially to induce relatively high net withdrawals of funds from the private sector, mainly as a consequence of additional borrowing associated with the monetary expansion resulting from the external improvement. But as these periods of higher growth progressed, the internal surpluses tended to decline, so that in three years — 1965/66, 1970/71 and 1973/74 — the fiscal position was easing while domestic growth remained vigorous and the overseas current account slid into a larger deficit position. The implication is that the external situation dominated, since one would normally expect a tightening fiscal balance in these circumstances rather than an easing.

Looking at the slower growth periods in Part I of Table 6, these have been consistently associated with external deficits (after a lag). The budgetary internal surplus has usually been lower in these periods than when overseas conditions were more favourable, which carries some counter-cyclical implications. But here again, the result hinges mainly on tighter domestic monetary conditions as compared with external surplus periods.

The situation is much less clear in terms of the adjusted deficit before borrowing, at least until the post 1973/74 period. Indeed, as the following data reveal, the average deficit before borrowing was much the same in periods of favourable and unfavourable external balance up until 1973/74.

**Average Adjusted Budget Balances**
(as percentage of GNP)

| *Period 1960/61 to 1973/74* | *Adjusted Deficit Before Borrowing* | *Adjusted Internal Surplus* |
|---|---|---|
| Five years of large external deficits (60/61, 61/62, 65/66, 66/67, 70/71) | −0.2 | +1.9 |
| Six years of external surpluses or small deficits (63/64, 64/65, 68/69, 69/70, 71/72, 72/73) | −0.4 | +3.2 |

Since 1974/75, on the basis of any of the indicators in Table 5, there have been much more substantial swings in the stance of fiscal policy. In the two years 1974/75 and 1975/76 it was strongly expansionary in a counter-cyclical sense, since in each of those years the overseas current account deficit was extremely large and would normally have called for, and contributed to, a sharp downwards adjustment in the domestic economy. In effect this natural adjustment process was delayed by the stimulus of the budget deficits and the lagged effects of the earlier years of strong real growth (1972/73 and 1973/74), with the result being that domestic growth finally only slowed significantly in 1975/76. By that stage, the influence of the overseas deficit outweighed other factors, including the efforts of the Government to prop up activity by expansionary policies.

Indeed, it had by then become clear to most observers that the decline in New Zealand's terms of trade was of a more fundamental and persistent nature than in similar earlier periods of such cyclical downturns. It had also become obvious that the international recession of the mid-1970s was both deeper and longer than had perhaps previously been thought, at least within New Zealand.

Accordingly, the stage was set for a post-election tightening of fiscal policy in 1976/77; a tightening which turned out to be more severe than would probably have been required had a more appropriate fiscal policy been pursued in the previous two years. The overall net outcome of the budget for 1976/77 was fairly neutral in terms of the simple budget indicators (such as those in Tables 5 and 8) but the sharp change from a strongly expansionary position meant that the net effect was contractionary in the sense that the change in the deficit was very sharply downwards and resulted largely from a marked absolute fall in real government spending.

In 1977/78, the budget stance appeared to be fairly neutral. For example, the cyclical effect of the Budget on the basis of Table 8 (described later) was a relatively small 1.0 per cent of GNP compared with 1971/72 base of zero per cent (using adjusted data). The adjusted internal surplus was a positive 1.5 per cent (Table 5). However, despite the continuing external deficit and a high rate of inflation, concern about rising unemployment, a deepening recession, and a prospective election, led to an expansionary budget deficit before borrowing for 1978/79. Again, as in the 1974/76 period, the risks seemed to be clearly on the side of too much stimulus. As a consequence, there was a vigorous effort by the monetary authorities in 1978/79 to finance the deficit by relatively non-inflationary means, i.e. by borrowing substantially from the non-bank private sector. The success of this effort can be partly judged by the fact that the adjusted internal balance turned out to be close to zero.

In summary, the basic fiscal problem since 1974/75 seems to have been the large fluctuations in the stance of budgetary policy. Given the length of the lags discussed elsewhere in the paper, and their variability, the conclusion must be that fiscal policy has swung too widely and too sharply in the face of a set of problems which have themselves been of much the same essential form for some years now. A more consistent and less variable approach to budgetary policy would probably have helped preserve a more satisfactory level of business confidence, at least with respect to longer term investment activities, and would have permitted a more measured assessment of the influence of fiscal policy on the various economic objectives as time progressed. Instead, the stance of policy has too often been altered in response to an obvious over-reaction in some immediately preceding period. A gradual rational and integrated adjustment process, moving towards a reasonably clearly defined set of objectives should be the basis for policy changes; in recent years this does not appear to have always been the case, at least in the field of fiscal policy.

The sharp variations in this area are illustrated by the following summary measures, each expressed as a percentage of GNP:

| *March Years* | *Conventional Deficit before Borrowing (1)* | *Adjusted Internal Surplus/Deficit (2)* | *Adjusted Cyclical Effect of the Budget (3)* |
|---|---|---|---|
| 1972 | −1.1 | 2.4 | 0.0 |
| 1973 | −2.7 | 4.6 | 2.0 |
| 1974 | −2.8 | 1.2 | 1.1 |
| 1975 | −4.1 | −2.9 | 4.1 |
| 1976 | −9.2 | −2.4 | 8.3 |
| 1977 | −4.0 | −0.6 | 1.8 |
| 1978 | −5.0 | 1.5 | 1.0 |
| 1979 | −9.1 | 0.0 | 3.9 |

Sources: Columns (1) and (2), Table 5; Column (3), Table 8.

### (ii) *Expenditure trends:*

Another approach to the interpretation of the fiscal data is to move from a study of the net fiscal outcome to a consideration of the relationships between total government expenditure (and total revenue) and the economy.[4]

It is apparent from graph 2 that the growth in real government expenditure has generally moved in the same direction as the growth in domestic activity. This is most pronounced, for example, during the recessions of 1961/62 and 1967/68 when government expenditure declined sharply in response to the need to cope with growing balance of payments deficits.

Furthermore, it seems that in most quarters changes in government spending have either been coincident with or have followed slightly movements in domestic activity.

These observations are given support by the correlation coefficients derived from the two sets of

4. In order to gain some picture of short term movements, the following comparisons of government expenditure/revenue and economic activity were based on a study of the expenditure/revenue data in the appendix tables, but on a quarterly price-deflated (i.e. real terms) basis. The Reserve Bank's real aggregate domestic expenditure series was used as a proxy for quarterly GDP. Graph 2 is thus based on data in real terms using four quarter-running totals to ease the problem of seasonality in the data. The graph shows quarter to quarter percentage changes in these running totals for both series.

data used in the graph. When these are regressed as coincident, the correlation coefficient is 0.36 whereas this increases to 0.44 when the data for government expenditure are shifted forward one quarter (compared with 0.12 when the data for government expenditure are moved back one quarter).

These results imply that for much of the past two decades government expenditure has tended to be pro-cyclical in the sense that it has generally moved in sympathy with changes in economic activity as a whole. If government outlays had been counter-cyclical in nature, then one would have expected to see sharper divergences between these outlays and total domestic expenditures as shown in the graph, with either government expenditure tending to lead the economy, rather than follow or be more or less coincident with its trends, or in some cases even to be rising while activity generally was falling.

However, some elements of counter-cyclical government activity are clear in more recent years, as for instance in 1974/75 when government spending kept increasing strongly in the face of a sharply slowing economy, an outcome which was at least partly deliberate counter-cyclical policy; and again in 1977/78 and 1978/79 when government spending was stepped up and taxes reduced to stimulate ailing domestic activity and to counter rising unemployment, moves which took place despite persistent and severe problems relating to external and internal stability.

It is thus probably fair to say that for many years up until the mid-1970's government expenditure was generally pro-cyclical. Since then, the pattern has become mixed, with some periods of counter-cyclical activity being interspersed with a period of pro-cyclical activity (particularly around 1976/77).

But, to return to the earlier theme, even these more recent movements in government outlays have themselves been partly geared to the constraint of the other major influence on domestic activity — changes in the external sector, and particularly the persistence of a large current account deficit. It was this deficit, allied with high domestic inflation rates, which crippled the Government's counter-cyclical efforts during the 1974/76 years and forced a substantial tightening of fiscal policy in 1976/77, when government spending rose by only 2.7 per cent in nominal terms, and fell very sharply in real terms.

The magnitude of the recession which emerged in 1977/78, and the prospect of an election in November 1978, combined to produce a return to a rapid rate of expenditure increase in that year, and contributed to the various 1978 tax cuts. By early 1979, and despite the vigorous government local borrowing programme during 1978/79, the possibility of the overseas deficit once again deteriorating raised the question of whether the relatively expansionary fiscal posture of 1978/79 could be maintained for much longer. It seems likely that the external constraint will again become predominant.

### (iii) *Revenue trends:*

In the area of government revenue it is more difficult to reach general conclusions. This is partly because different components of revenue behave in different ways and are subject to different institutional arrangements, especially with respect to the timing of tax payments to government.[5]

An examination of the growth of salary and wage tax receipts (in real terms) reveals that while there has been a general tendency for these to move in the same direction as real activity there have nevertheless been some significant departures from the overall trend. These departures have been mainly the result of discretionary tax changes and are most apparent, for example, during the early 1960's and in 1971. In the early 1960's when the economy was experiencing favourable rates of economic growth there were several tax cuts which substantially dampened the rate of growth in revenue. On the other hand, as a result of an attempt to combat an increasing rate of inflation, tax revenue was increased sharply in 1971 (by way of a surcharge on income tax) even though the economy was in a mild recession.

Thus, while the automatic real component of salary and wage tax receipts tends to move more or less in sympathy with economic activity, and thus has some pro-cyclical properties, a general assessment is complicated by several considerations.

First, although the P.A.Y.E. (pay as you earn) basis of salary and wage earners' tax payments ensures a close timing correspondence between the state of the economy and the flow of these funds to government, the inflation element in this form of income has been substantial and variable and causes problems in relating the tax-take figures to the real economy. Secondly, the strongly progressive nature of the personal tax scales in most of the period under review has lent this form of revenue some counter-cyclical properties. If wage income grows rapidly, wage earners' tax payments expand even more quickly (for example, by an average factor of about 1.5 on the basis of the nominal figures for the period 1973/74 to 1978/79). Thirdly, the discretionary component of this form of tax, which is attributable to changes in tax rates and scales, has often been counter-cyclical although with notable exceptions. These exceptions have been partly related to the timing of prospective General Elections. For instance, taxes were cut in 1975 (an election year) at a time when both government expenditure and the balance of payments deficit were at unprecedented levels. In 1978, with another election in view at the end of that year, tax rates were reduced at a time when substantial fiscal and monetary stimulus had already been given to the economy (the October 1977 fiscal moves, and the February 1978 easing of monetary policy).

Moreover, the 1978 tax cuts contributed to a substantial widening of the fiscal deficit when the inflation rate was high and the overseas deficit still large. Whether the move was really counter-cyclical is also debatable, since the cuts took effect at a time when activity was picking up strongly in response to earlier moves. This cut was also an illustration of the nature of other tax moves which on occasions have been designed to ease the progressivity of the tax schedule or cope with particular problems in the scale itself.

A similar story applies to indirect tax receipts. While the automatic component of these receipts is undoubtedly activity related, moving in the same direction as domestic expenditure, it would seem that the discretionary component has sometimes tended to move in the opposite direction to activity (in real terms). One of the main reasons for this is that indirect taxes have often

5. It should be recalled that the references to the various revenue components are based on data deflated by the consumers' price index in order to gain some indication of movements in revenue in real terms, and to facilitate a comparison of these data with changes in economic activity in real terms.

been used to reduce demand (in particular for imports) during periods in which the balance of payments position has deteriorated.

The picture concerning company tax receipts (the automatic component of which is also activity related) is distorted somewhat by a myriad of tax concessions which have been granted at one time or another. One interesting difference to emerge between changes in company tax receipts and other tax receipts is that sometimes in periods when the balance of payments deficit has increased company taxes have been cut through the granting of tax concessions in order to help increase production and promote exports.

A further complication in the company tax area is the timing of these flows to government, since most companies pay their taxes in two stages in the year following that in which the income was earned. This problem also applies in a rather similar fashion to farmers and self-employed businessmen who pay tax in the current year on the basis of estimates of income which are usually related to the previous year's income, with an adjustment to square matters up being undertaken at a later stage. In the farm sector particularly income swings from year to year can be very large.

In summary, the overall relationship of tax receipts to economic activity is less clear than that for government expenditure. There has been some tendency for movements in tax receipts to be in the same direction as movements in activity. But there have been several instances when discretionary tax changes have meant that this relationship has not prevailed. These instances, together with quite long lags in important parts of the tax system and some marked changes in basic patterns over the period, suggest the need for caution in reaching any generalised conclusion about the relationship between tax receipts and economic activity.

Nevertheless, the linkages between both expenditure and revenue and the real economy are unquestionably strongly influenced by the external sector in much the same way as was outlined in the discussion of the budget deficit/surplus data. It is the external constraint which has frequently limited the stabilisation role of fiscal policy, and even where this policy has been of a clearly counter-cyclical nature the departure from an essentially pro-cyclical stance has usually only been temporary until such time as the deterioration of the external current account has again asserted its constraining role.

However, this open economy problem is by no means peculiar to New Zealand[6] and, indeed, strengthens the case for endeavouring to seek an effective fiscal policy rather than providing an excuse for the unfortunately rather variable fiscal performance New Zealand has had in recent years.

The difficulties of interpretation referred to in preceding sections arise not just from the complications brought to bear by a large and volatile external sector, but also from a lack of sophistication in the budget impact measures themselves. There are thus three matters which the paper should now turn to:

(1) The role of the income/expenditure multipliers discussed in a conceptual sense earlier in the paper.

(2) The effect of different stages of the economic cycle, and different levels of capacity utilisation, on the budget/economy inter-relationship.

(3) The extent to which the budget is really manageable independently of the state of the economy (including the state of the balance of payments, the rate of inflation, and so on). This issue revolves around the identification of the different components of the budget in order to measure the relative significance of discretionary fiscal policy and automatic fiscal changes dependent upon the state of the economy. As the economist would say, to what extent is the budget exogenous (policy-determined) and to what extent endogenous (economy-related)?

## 4. THE BUDGET AND THE ECONOMY

### (a) Fiscal Multipliers

Although any attempt to measure the multiplier effects on the economy of changes in government expenditure and taxes is inevitably beset with theoretical and empirical problems, it is usually agreed that the most satisfactory measures are those derived from simulation experiments with econometric models. Indeed, in the New Zealand case, the only known comprehensive attempt to explore the likely magnitude of these mutlipliers is a study by Joseph [8] using the Reserve Bank's macroeconometric model of the New Zealand economy, the latest version of which has been described by Spencer [18]. Joseph computed the multipliers for changes in total non-wage government expenditure (including social welfare benefits and transfers) in a series of experiments based on two basic formats:

*Case 1:* A permanent change in expenditure without any discretionary compensatory revenue changes.

*Case 2:* A permanent change in expenditure financed by a compensating change in personal taxation.

She explored alternative percentage increases and decreases in expenditure and the effect of different levels of capacity utilisation on the base periods for the simulations. Table 7 presents a summary of the *average* results to provide an indication of the size of the multipliers and how they change over time.

Using case 1 as an example, it can be seen that in the first quarter of, say, a $100 change in government expenditure, nominal GNP will change in the same direction by the much smaller amount of $25. However, after about three years the multipliers peak at an average value of 1.54 indicating that the cumulative effect of the change in government spending is a more than proportionate change in GNP (by $154 in this 'average' case).

Further results which emerged from this research project were that the multipliers varied considerably according to the direction of change in spending. A cut in government expenditure can normally be expected to have a greater impact on the economy in the initial years after the change was introduced than would a comparable percentage increase in spending. This is because reduced government expenditure not only has the expected direct effects on the real economy, but also it immediately reduces the reserve base of the financial system and leads to a second round credit contraction which will emerge more rapidly (in the absence of offsetting action by the authorities) than in the converse case. This is because when government spending increases, any subsequent private sector credit expansion based on higher reserve assets held by the financial system will only arise as the demand for credit picks up. In this case the lags are likely to be longer.

Similarly, as would be expected, the multipliers are significantly higher for increases in government spend-

6 The open economy aspects are well documented in standard public finance texts such as Musgrave and Musgrave [11], pages 527 and 571.

ing during periods of low capacity utilisation in the economy as a whole than in periods of high utilisation where there is already greater pressure on the availability of existing resources.

Joseph's results also show the strong interrelationship between the government and overseas sector. For example, again using case 1, a $100 rise (fall) in government expenditure is likely to result in a sharp deterioration (improvement) in the overseas exchange transactions current account balance; by about $20 after one year, $40 after two years, and $75 after five years. By way of comparison, the effect of a $100 change in government spending on GNP is likely to be about $70 after one year, $120 after two years, and $170 after five years if these multiplier figures are to be believed.

In the case 2 experiments, where the rise in spending is financed by a discretionary corresponding increase in income tax receipts, the multiplier paths are quite different. For instance, GNP again changes in the same direction during the first year after the initial change, but subsequently moves in the opposite direction to the change in expenditure. In other words an effort to stimulate the economy or meet some other objective (such as higher social welfare benefits) by increased government expenditure financed by, say, additional taxes may initially boost economic activity but in the absence of other policy changes may run the risk of setting in motion contractionary forces which could in time more than offset the initial stimulative effect.

This brief account of Joseph's multiplier analysis does not do justice to the wealth of detailed multipliers she presents for different experiments and different economic variables. But it does throw up a number of general points of importance to this paper.

First, the lags between a change in fiscal policy and the effect of this change on the economy can be very long, stretching over several years and thus possibly also spanning more than one cyclical period. For example, an easing of fiscal policy to stimulate the economy during a recession may still be having significant effects on activity some years later when a tightening of fiscal policy might be in order for some reason. In particular, the cycles of activity are strongly related to external events and, as is well known, these can alter rapidly and without warning.

Secondly, the multiplier effects on both GNP and the balance of payments can be strong and of differing direction. So a rise in government spending to stimulate the economy will harm the overseas exchange position. The latter emerges as the major constraint on such policy and other action in New Zealand.

Thirdly, the effects of fiscal action differ significantly according to the phase of the cycle in which the change occurs. The magnitude of the multipliers varies with the direction of the change in policy and the state of the economy, especially the degree of capacity utilisation. In this sense capacity refers to both plant capacity and the availability of labour. This means that the effects on employment and prices of a change in government expenditure will differ too according to when the policy change takes place, and its direction.

Fourthly, a comparison of cases 1 and 2 mentioned above reveals the importance of the way in which any change in government spending is financed, whether it be by bank or other forms of credit, or by taxation.

### (b) The Capacity Utilisation Question

As a further refinement of the budget data, and as an aid to help one get to grips with the effect of the state of the economy on the budget, it is possible to construct budget indicators which are consistent with some hypothetical 'average' level of activity.

For example, in New Zealand the Treasury have computed data representing a concept known as the full employment budget surplus, which shows the hypothetical budget outcome if the economy had been in a state of full employment throughout the period for which the calculations are carried out. In a sense this is designed to 'clean' the budget data of the effects of different stages of the economic cycle or, alternatively, to place the statistics for each year on a common footing.

The full employment budget surplus procedure has been widely used overseas, most notably in recent O.E.C.D. inter-country comparison studies [13], but it does have some major deficiencies. In particular, it suffers from the simplistic nature of any single indicator, in the same way as the indicators discussed earlier. More importantly, perhaps, it places much emphasis on full employment as the common base on which to measure budgets against one another when, especially in a country like New Zealand, some other objective may overwhelm the full employment one. As already noted, the major constraint in New Zealand on aggregate economic activity is most often the state of the balance of payments. If there is a large external deficit and high domestic unemployment, it may be of only academic interest to know what the budget position might have been had 'full employment' prevailed. A further difficulty with the concept is of course the measurement problem; how to define full employment and how to adjust the data to that assumed base.

An alternative approach is to use what is known as the cyclically neutral budget balance. This suffers from much the same deficiencies as the full employment budget surplus idea, and differs from it primarily in the way the base is chosen. In some respects it is an even more simple measure, being based on a year which is arbitrarily chosen as being cyclically neutral. This does at least allow one to take the state of the balance of payments into account in selecting the base period. This method is often used by the I.M.F. to derive approximate budget indicators.

A budget is defined as cyclically neutral if government expenditure increases over time in proportion to the growth of potential output and government revenue changes in proportion to actual GNP. This idea of neutral profile of the budget is supposed to allow for the effect of the economy on the budget. Thus leaving one with an indication of the influence of the budget on the economy. This is derived by studying the difference between the actual budget balance and the so-called neutral balance. A positive CEB (cyclical effect of the budget) indicates an expansionary effect, where the actual deficit exceeds the neutral deficit, and vice versa.

Some computations along these lines are included in Table 8.

In part I of the table, the adjusted deficit before borrowing data are used (from column 4 of Table 3) while in part II the conventional deficit figures are employed (column 3 of Table 1).

In both cases, 1971/72 is chosen as the base year since in that period there was moderate economic growth and reasonable balance of payments equilibrium. Unemployment was low and inflation under 10 per cent. The terms of trade were favourable but not at their peak.

It is readily admitted that alternative base years could be justified and indeed calculations for other bases were prepared. Nevertheless, 1971/72 was the most recent year in which a reasonable mix of results was achieved with respect to New Zealand's economic objectives and it seems a fair choice providing the figures are studied primarily in a relative rather than an absolute sense, and providing it is recalled that the large fall in the terms of trade occurred subsequent to the base year. The technical derivation of the CEB measures is set out in a footnote to Table 8.

The data again illustrate the relatively small variations in the stance of fiscal policy in most years up to the early 1970's. According to these estimates the cyclical effect of the budget exceeded 2 per cent in only one of the first fourteen years shown in Table 8, on the basis of the appropriately adjusted data. But then, for the next two years, 1974/75 and 1975/76, the cyclical effect of fiscal policy was strongly positive or expansionary, with this measure averaging 6.2 per cent of GNP per annum.

A more neutral stance was reverted to in 1976/77 and 1977/78, at least relative to the base year, but not without the considerable pain of rapid adjustment from the previously expansionary influence. Moreover, the so-called 'neutrality' of the fiscal position in these years implied a real economy in a recessionary phase since the terms of trade were much lower than in the 1971/72 base year. In 1978/79, an expansionary posture was again adopted.

The neutrality concept is probably best interpreted against the background of the data in Table 4 which show reasonable balance between the government and overseas sector in terms of their effects on the private sector's cash base in both 1976/77 and 1977/78 compared with the earlier mid-1970's period (providing the data are adjusted to exclude, as they should for this purpose, compensatory deposits with the trading banks — see columns (1) and (2) of Table 4). Looking beyond the budget indicators, it should also be remembered that the fall in real government expenditure in 1976/77 would have induced some significant downwards multiplier effects.

Although statistics of this kind are constructed in a rather artifical way, and may be subject to various methodological and interpretative questions, they are nonetheless useful in a generalised indicative way. On the whole, they serve to confirm much of the remaining analysis in this paper. They undoubtedly warrant further research and statistical refinement.

### (c) Automatic/Discretionary Effects

Taking the question of the effect on the budget of the economy a stage further, it is possible to calculate in an approximate fashion those parts of the budget which are the result of discretionary decisions and those which are basically related to the state of the economy (the automatic elements). Clearly, if the built-in flexibility of the budget is relatively large, and if a large proportion of expenditure and revenue changes derive from changes in economic activity, then the scope for discretionary fiscal policy is thereby reduced. This might not only render fiscal policy less effective than it could otherwise be; it might also make it harder to interpret fiscal policy and changes in the various budget indicators.

The essential point is that the actual budget out-turn might be quite different from what the policymakers intended.

A simple but effective way in which to illustrate this point is by reference to Table 9 which shows the annual differences between the actual budget results and those estimated as likely to prevail at the time the Budget was announced. These differences have on occasions been relatively large, especially in more recent years when they have consistently exceeded 2 per cent of GNP. To some extent the differences result from deliberate policy action between budgets, such as the occasional mini budgets and the regular presentation of supplementary estimates of government expenditure each year. But often a significant part of the difference is forecasting error, a consequence of the level of activity or the rate of inflation in the economy turning out to be different from what Treasury anticipated when the Budget was being prepared.

Table 10 sets out some estimates of government expenditure broken down into automatic and discretionary components.[7] The approximate nature of these calculations can be illustrated by stating some of the major assumptions underlying the table.

For government salary and wage payments, it is assumed that the number of employees is subject to discretionary policy but that, on the whole, the percentage increases in wage rates is automatic, i.e. linked by formulae to private sector rates. Similarly with monetary benefits: the automatic element is the regular adjustment of benefit rates in line with domestic private sector wage/price movements whereas any further change is a result of discretionary action, e.g. to widen and improve national superannuation, or to change the eligibility criteria for certain benefits. The exception to this procedure is unemployment payments which are assumed to be primarily economy-related. As for 'other' government spending (non-wage, non-benefit expenditure), the real component of this is treated as the policy variable, whereas changes resulting simply from higher inflation rates are regarded as automatic.

The proportions of automatic to discretionary expenditure vary substantially from year to year. On average over time, the relative importance of the automatic component seems to have increased and the scope for discretionary changes has probably reduced. But 1976/77 shows what a determined Government can still do: in that year, despite a rise in automatic spending of over $600 million, there was a sharp cut of over $400 million in discretionary expenditure. But it would be difficult to do this other than occasionally unless the institutional arrangements for establishing expenditure levels were dramatically altered, including the now very large wage and social security benefit components. In 1977/78, these accounted for 55.3 per cent of total government spending. Moreover, sudden large changes in government activities can have substantial disruptive effects on the economy, as illustrated by the severity of the 1977/78 recession.

The problem is simply confirmed by looking at the 1977/78 figures. In that year 'automatic' spending was two-thirds of the overall change. The discretionary increase was less than $300 million, yet total expenditure rose by over $1,000 million. Figures of this magnitude place in perspective the difficulty of implementing a fully independent fiscal policy and confirm the need for Government either to get a firmer control over its own activities, i.e. reduce the automaticity of its spending, or pursue alternative policies which will moderate inflation and thus achieve the same end.

On the revenue side, it was possible in the case of company tax receipts to obtain estimates of the discretionary changes by simply treating the tax rate as the policy variable. However, for personal and indirect tax

7. For earlier overseas work on the automatic/discretionary split see Hansen [6].

changes, where progressive scales or lack of data on the relevant tax base made such an approach difficult, it was necessary to take the estimated effect of policy measures as presented in the relevant Budget statements. The automatic/discretionary split is set out in Table 11, from which it is clear that the bulk of the annual changes in tax receipts result from automatic elements. These effects include constant percentage sales tax rates being applied to rising sales values and income earners facing tax bills rising much faster than their incomes as a consequence of progressive tax rates and rapid inflation. Inflation is the central issue, aided and abetted by outmoded tax schedules.

One method of forcing upon Government more explicit regular review and control of its own expenditure would of course be to ease the automaticity and particularly the progressivity of its revenue, such as by the introduction of indexation of the tax scales. Under this system the tax schedule itself automatically adjusts upwards as incomes grow with inflation and so government revenues would expand at a rate more closely comparable with the rate of increase of incomes, rather than by a substantially more than proportionate rate as at present. In recent years the average elasticity coefficient for personal income tax has been in the region of 1.4, meaning that a 10 per cent income rise has usually been associated with an increase in tax receipts of about 14 per cent without any legislative change in tax rates. Under tax indexation procedures, progressivity in tax revenues could still be achieved but only by an explicit Government decision to lift the schedule. Indexation would not only have the advantage of encouraging Government to consider more carefully its taxing and spending policies, it would also encourage greater public debate on these issues (because of the need for regular explicit decisions and less automaticity) and probably also concentrate more attention upon other problems related to tax policies, such as the effects upon desires to work and save.

The net result of dividing government expenditure and taxation into their discretionary and automatic components is shown in the corresponding budget balances before borrowing in Table 11. At this stage the analysis has been limited only to a consideration of the conventional data although in time it might be useful to extend it to the adjusted data discussed earlier and also perhaps to obtain a comparable split on the borrowing side.

The figures in the final columns (8 to 10) of Table 11 confirm that with one or two exceptions the changes in the conventional deficit before borrowing in the years up until the mid-1970's were generally rather small as proportions of GNP. The interesting feature of the data however is that in thirteen of the eighteen periods shown in the table, the net effect of the automatic 'built-in' components of the budget was to reduce the deficit before borrowing. This tendency resulted from the fact that in most years the automatic increment to revenue exceeded the built-in increase in expenditure. This only failed to occur in years of slow economic growth which in turn followed periods of particularly acute balance of payments problems (see the years ended March 1963, 1968, 1969, 1977, and 1979).

The corollary of this is that in most years discretionary policy contributed to what would have been a widening of the deficit before borrowing had it not been for the constraint of the automatic stabilising factors. That portion of the change in the deficit roughly attributable to discretionary policy represented a positive injection of something between 0.5 and 2 per cent of GNP in nine out of the eleven years up to 1971/72 in Table 11. From that time on, the discretionary injections have been much larger, averaging 3.8 per cent of GNP in the years 1972/73 to 1978/79 (but excluding 1976/77, one of only two years in the table when there was a large discretionary withdrawal of funds according to this measure, which it should be recalled excludes borrowing transactions).

This suggests that despite the now large automatic components of government spending and revenue, considerable scope still exists for using discretionary action to change the budget outcome. In large measure, the substantial fluctuations in the deficit before borrowing over the past six years or so can be attributed to the exercise of discretionary policy. This conclusion is admittedly based on approximate data, but the relative proportions of the change in the deficit represented by the so-called automatic and discretionary elements would seem to be such as to validate the point of principle despite the statistical shortcomings of the figures in Tables 10 and 11.

## 5. ALTERNATIVE POLICY REGIMES

Another way in which to examine the possible efficacy of fiscal policy is to use econometric model simulation experiments to compare actual events against hypothetical but feasible and realistic alternative policy regimes. Although these experiments involve a number of technical problems of varying severity, not the least of which is to construct a model which is itself a reasonable representation of reality, they do nevertheless provide some helpful indications about the timing, direction, and magnitude of problems involved in the use of fiscal policy.

In New Zealand, three studies of this form have been undertaken, all based on the Reserve Bank's model of the economy.

### (a) Effects of Higher Government Expenditure

Deane et al [3], conducted experiments involving 10 per cent higher government expenditure throughout the period considered (1965 to 1974). These yielded results not unlike those of Joseph [8], including the following points of note:

(1) Lengthy lags were revealed in the process of economic adjustment, with the multipliers taking about three years or so to peak in the case of real GNP, and even longer in the case of the effects on the external balance and on domestic prices.

(2) The leakage from the system by way of imports was particularly strong, and there were other significant built-in stabilising influences as well, such as the return flow of funds to Government by way of higher tax revenues and borrowing. For example, after the first six quarters of the simulation period about 30 per cent of the expenditure injection was being automatically returned to Government by these processes. By 1970, the comparable proportion had risen to well over 50 per cent.

(3) The strength of the automatic stabilisation mechanisms generally in the economy was shown by the fact that after five years, despite the continuing injection of government spending into the economy, real GNP had stabilised at a consistently higher level, partly because by then the withdrawal of funds by imports had grown to exceed the *net* government injections.

(4) Naturally, higher government expenditure also placed more pressure on capacity utilisation and

labour availability generally in the economy. Although the model does not have a fully articulated supply side, it is apparent that additional resources claimed by Government implies fewer resources potentially available for use by the private sector, at least in the short run. This may be an important policy issue in its own right, especially during periods of high capacity utilisation and particularly if resource switching policies are being pursued in other areas, e.g. to encourage additional exports.

(5) Higher government spending appeared to benefit salary and wage earners to a greater proportionate extent than farmers and the corporate sector, partly because both the latter are more dependent on export prices which of course do not alter when government spending rises, whereas domestic costs increase.

(6) Interest rates were also pushed up sharply by the higher spending, even though the simulations took place during a period of widespread official controls on interest rates. One effect was clear in the model. Higher spending induced increased economic activity, heightened the demand for credit, and interest rates rose, especially for housing. Another effect would be more apparent today: higher spending requires increased finance for Government, and this additional borrowing would also place more pressure on interest rates.

(7) Interestingly enough, in the experiments increases in government spending by way of higher monetary benefits were slower to stimulate the economy than other forms of expenditure. But this ignores the time taken to reach the point of actually implementing the increased spending. A decision on monetary benefits could probably be reached more rapidly than a decision to, say, construct additional schools or hospitals. The impact lags of direct project spending once actually undertaken may be shorter than for social welfare expenditure but the total lags are probably considerably longer.

(8) Another experiment involving also the use of other policy instruments, including an earlier exchange rate change, was attempted in order to examine whether it might have been possible to avoid the 1967 recession in New Zealand. The simulations showed that hypothetically a smoothing out of increases in government spending (less in 1966; more in 1967) and earlier action on other fronts could have maintained the level of activity and employment at levels close to the historical norm without a worse external situation (on average) but with slightly higher inflation (and slightly reduced investment and output in some early quarters of the period).

The study [3] concluded:

'Clearly it seems possible to devise alternative policy actions in historical policy simulations which are of a conventional and feasible nature which will ensure steady non-inflationary economic growth given hindsight about the movements of the non-discretionary (non-policy) exogenous variables in the system. Much sub-optimal observed policy decision-making results from poor knowledge of the current state of the economy and little information on the current and likely movements in the exogenous non-discretionary causative elements operating on it. In historical policy simulations neither of these disadvantages is present.'

(9) As far as inflation was concerned, increased government expenditure initially reduced unit labour costs (the ratio of wages and salaries to real aggregate expenditure) because national expenditure/output rose more quickly in the period immediately after the increased injection than did wage income. Thus prices at first eased a little in response to higher government outlays but then after a time began to accelerate more quickly as the employment and wage rate effects outweighed the real output effect. Even so, after five years the effect on the consumer price index was only of the order of 1–2 per cent. This rather small impact is not inconsistent with other findings, but it does leave one intuitively with some doubts about the magnitude of the effects. On this point, a major study of inflation in the O.E.C.D. countries[8] concluded that:

'The conclusion to be drawn therefore is that government spending and taxing clearly had a significant impact on the level of economic activity in practically all of the countries we have examined, and at various times contributed to inflationary pressure. Nonetheless, the length and severity of post-war inflation, at least up to 1970, cannot be attributed mainly or even perhaps substantially to either the level of expenditure and tax revenue relative to GDP or to the balance between them; nor can the differences between the average rates of inflation experienced by different countries. The major contribution of government to inflation would appear to be indirect, arising from commitment to full employment and growth policies which materially influenced private sector attitudes in the market determination of wages and prices. Unfortunately, this contribution is even less amenable to quantitative investigation than is the direct contribution.'

**(b) Constant Real Growth in Expenditure**

Smith [17] took this work a stage further by conducting simulations for the 1974/78 period on the basis of various assumed constant annual rates of growth in non-wage non-transfer government expenditure. The objective was to examine whether such an approach would have given results preferable to those which actually emerged during a period in which there were very large swings in both the external account and in government spending.

As one would expect, the growth in real GNP was lower in the early years of the experiment and higher in the later years, consistent with the smoothing out of the rate of increase in government expenditure for these years. Unemployment suffered as a consequence of the changed path of GNP, but the balance of payments improved and inflation was lower.

Several points emerge from these results. At least hypothetically more stable growth in government expenditure would mean more stability in the economy generally but this would not necessarily imply higher average rates of growth. In other words, it is not clear whether a stable growth rate is to be preferred to fluctuating growth rates in terms of the average level of real GNP these alternatives would yield. Any judgement on this matter is dependent also on one's view about the other economic objectives. On this issue, Smith's results illustrate the trade-offs involved between different objectives. For example, reduced government spending

8. See Maynard and van Ryckeghem [9], p. 142, and chapter 6 on the contribution of government to inflation in the O.E.C.D. countries.

may dampen economic activity and enhance internal and external stability; but it may also mean slower real growth and higher unemployment. The task of good policy is to strike the most acceptable balance between the various objectives. Even with the use of the full range of policy instruments, this is no easy business (as some of Smith's more complex multi-policy simulations show).

### (c) Government Expenditure: Pro or Counter-Cyclical?

Recognition of these difficulties, and of some of the other policy problems referred to earlier in the paper, have led some economists to suggest that rather than endeavouring to pursue what they see as a futile search for the right mix of discretionary policies, governments should seek more stability in their own use of the tools of policy and this would in time induce more stability in the economy generally. The monetarist approach to matters is to suggest that Government should control the money supply in such a way that it increases each year by a relatively stable rate, sufficient to facilitate sustainable economic growth but at a rate low enough to inhibit inflation. Since fiscal and monetary policies are closely intertwined, the need for greater stability in Government's budgetary operations is an integral part of this whole issue.

Some of these matters were investigated in the New Zealand case by Morgan and Haywood [10] in a 1977 paper which examined the relationship between the cyclical movement of activity in the economies of New Zealand's major trading partners, and the cycles of domestic activity for the period 1959/76. A particularly interesting by-product of this work was their investigation of the role of cyclical movements in government expenditure and how these related to domestic activity cycles.

This study noted the way in which in most years the major discretionary component of government spending (the non-wage, non-transfer portion was used) appeared to be either coincident with, or follow slightly, movements in general activity. Morgan and Haywood then conducted a simulation experiment maintaining the relevant part of government expenditure at a constant average annual rate of increase equivalent to the actual average recorded over the period (8.5 per cent). They concluded that discretionary government expenditure, 'if it exists at all', has probably been significantly pro-cyclical and that if government had followed the simplistic policy of constant real growth in its spending, the cycles in domestic activity could have been significantly dampened.

A second simulation was carried out to test the use of government expenditure in a discretionary, anti-cyclical manner. Although this moderated the cyclical swings in internal economic activity even further, it turned out that the difference between the two types of policy alternatives tested was only small in terms of their effects upon the growth in GNP in the twelve year period (real GNP grew by an annual average of 1.1 per cent with 'smooth' expenditure and by 0.8 per cent with 'anti-cyclical' expenditure).

The results indicated the importance of timing in relation to the stabilisation role of government outlays and suggested that for the period examined changes in government expenditure had been 'inconsistent with the stabilisation objective'. This element of fiscal policy has tended to be pro-cyclical rather than counter-cyclical. Indeed, model simulations indicated that a policy of a constant rate of growth in government expenditure may have been more effective in dampening the swings in the domestic cycle than was the case with actual historical patterns of expenditure. Given the lengthy and variable lags involved, and the various timing and magnitude problems, Morgan and Haywood suggested the preferred policy course might be the neutral option of constant *real* expenditure growth.

This would still of course require a critical decision about which rate of growth to choose. This choice would of itself have wide-ranging ramifications and it would be unwise to regard even this neutral option as any easy answer to the policy dilemma. Moreover, decisions are required about all other facets of the budget, including the other components of spending and the revenue/borrowing side, to say nothing of how price changes should be handled.

Finally in this section, it should be mentioned that Morgan and Haywood's work confirmed the earlier suggestion in this paper of the importance of the internal/external balance nexus. They observed:

> 'Having such an unhealthy balance of payments position at the top of the cycle has severely limited the scope for counter-cyclical expansionary fiscal policy once the economy has entered the lower half of the cycle. In fact in the two cases above (1965/66 and 1974/75), fiscal activity was deliberately deflationary once the expansionary phase of the cycle had been allowed to continue until the foreign exchange constraint became critical. If counter-cyclical policy is to be employed effectively, one would expect it to be used to dampen the boom period as well as ease the recession. But a prerequisite for successful expansionary policy in the lower phase of the cycle is a balance of payments position which enables government expenditure to be increased during an economic recession, without being unduly constrained by the balance of payments. Clearly, the success of such discretionary counter-cyclical policy depends very much upon the government recognising and moderating the expansionary phase of the cycle. The politically difficult task of decreasing government expenditure during an economic boom is one successive New Zealand governments have avoided.'

## 6. THE MONETARY POLICY LINKAGE

### (a) Some General Observations

The linkage between fiscal and monetary policies has already been touched upon. It arises most obviously in the form of the government budgetary borrowing requirement although the linkages are in practice diverse and complex, deriving also from the state of both the domestic economy and the balance of payments.

As far as government borrowing is concerned, this can be facilitated in two major ways through the medium of monetary policy: first, by the use of reserve ratio requirements imposed upon the financial institutions, and secondly, by Government competing for its loan funds on the open market by paying attractive interest rates and offering favourable forms of securities.

In recent years there has been a move towards more active use of these latter techniques involving public debt policy and open market operations by the Reserve Bank. The reasons for this change in the emphasis of monetary policy, away from direct controls towards more reliance on market mechanisms and the encouragement of competition in financial markets, have been

set out elsewhere (see, for example, Deane and Nicholl [5]). The extent of progress towards an effective public debt policy, including both new issues of securities and open market operations by the Reserve Bank, was illustrated by the fact that in 1978/79 about $800 million of debt was sold to the non-bank sector, compared with $335 million in the previous year. The 1978/79 sales included almost $300 million of the special government savings stock as well as sales of newly invigorated treasury bills and sales of conventional government stock.

For present purposes the important point is the need for a co-ordinated approach to the determination of fiscal and monetary policies. The policy process is currently based on Reserve Bank projections of likely money and credit growth rates against the background of forecasts of all other aspects of the economy. Given certain assumptions about real growth, the rate of inflation, and overseas exchange and budgetary transactions, it is possible to derive the likely growth rate of the money supply and compare this rate with that which would be more appropriate if the assumptions were to be altered, e.g. if inflation were to be reduced, or the external deficit lowered. Competing government and private sector credit claims can then be assessed and an appropriate monetary policy derived which involves some view about the desirable rate of growth of private sector credit and the financing needs of government. From this analysis is derived a target for government securities sales, by either new issues or through open market operations, and in turn this raises implications for the setting of security interest rates and adjustments to reserve ratios.

The change in policy emphasis is to some extent still in a transitional stage and the authorities are still feeling their way towards new methods and procedures.

The process is likely to be frustrated if too much reliance is placed on one form of policy to compensate for inadequacies in some other form. For example, it is difficult to run an adequate monetary policy in the face of a relatively large fiscal deficit, such as was the situation in 1978/79. As a consequence of the deficit, and despite record security sales, both the money supply and the reserve base of the financial system rose rapidly during the year, leading not only to a historically high money/GNP ratio, with all the implications that carries for future spending, but also to a position where the financial institutions were well placed to meet any increase in the private sector's demand for credit. If this situation were to be fully countered by monetary policy, official interest rates would have needed to rise to even higher levels than the historical records they did create. It was felt by the authorities that this would have resulted in unacceptably high private sector interest rates and impaired investment potential, particularly in the export sector. The net result was simply that the rate of monetary expansion was more rapid than was either needed or desired. Quite apart from the monetary consequences of such a large deficit, the ordinary income/expenditure mulitplier process would probably have ensured a recovery in domestic activity, as indeed turned out to be the case despite the persistence of a large external deficit.

A co-ordinated and integrated approach to fiscal and monetary — and other — policies is essential. This does not mean that each instrument has to be aimed at the one objective, but rather that a range of objectives requires a range of instruments and the inter-relationships of both objectives and instruments needs to be borne closely in mind in policy-making.

An interesting empirical analysis of the instruments-targets problem was recently provided by Spencer and Grimes [20]. In a study based on hypothetical but sensible simulation experiments with the latest Reserve Bank core model, an endeavour was made to identify the relative strengths of alternative policy instruments with respect to the various economic target variables. Three major policy weapons were considered along with the three most important macro economic objectives, output (and hence, implicitly, employment), inflation and the balance of payments.

On the basis of simulation experiments involving a wide range of alternative policy assignment strategies, three conclusions of interest emerged:

(1) It was found that government expenditure, chosen as the fiscal policy instrument in the analysis, had a strong relative advantage with respect to the inflation objective. This meant that when assigning different instruments to different targets it was important, in order to achieve maximum stability within the economy, to make sure that fiscal policy was consistent with the inflation objective. If for example, the fiscal instrument were aimed at the output objective with monetary policy being left to look after the inflationary consequences then it was apparent from the experiments that overall stabilisation policy would be considerably less effective.

(2) Besides the major requirement that fiscal policy be assigned to the inflation objective, the most stable policy mix required that the interest rate and exchange rate instruments be aimed at the output and balance of payments targets respectively. Furthermore, it was necessary for exchange rate changes to be small rather than large (as indeed they should be under the new crawling peg system announced in the 1979 budget).

(3) If the money supply is to be used as an intermediate target of policy — the 'link', so to speak, between the policy instrument and an ultimate economic objective — then the best results were achieved with the interest rate linked to the monetary target (with this in turn related to output), the government expenditure instrument linked to the inflation target, and the exchange rate linked to the balance of payments (in the latter case, possibly via an intermediate relative price target, the ratio of export to domestic prices).

This is not to say, of course, that the growth of public spending is the major or only culprit in causing inflation. At a popular level of analysis, the rate of inflation is seen by some as being related to 'excessive' growth of government expenditure, because of the difficulties associated with financing such spending and the fear that covering the spending by, say, non-inflationary borrowing will raise interest rates and discourage private investment in such a way as to encourage governments to take the easy way out, particularly by borrowing from the central bank. However, this rather telescoped hypothesis is easier to state than prove, as Peacock and Ricketts [14] found in a cross-country study of this issue, only to find their comparisons finally 'inconclusive'. The results obtained by Maynard and van Ryckeghem [9], quoted earlier, also pointed to the difficulties of reaching firm or clear cut conclusions.

Table 12 sets out the historical pattern of monetary changes based on the Reserve Bank's money supply and selected liquid assets (M3) series. This illustrates the build up in overseas assets following periods of balance of payments recovery, with these higher claims adding to monetary growth rates. As the expansionary cycle

gets under way, additional funds flow to Government and then later in the cycle a boom in private sector credit usually occurs. The periods 1964/66, 1969/71 and 1972/74 emphasise these points. Although these data cover only the major deposit accepting institutions included in the M3 series, they indicate the involuntary nature of much of the net flow of loanable funds to Government during periods of favourable external balance, thus influencing the fiscal balance along the lines discussed earlier.

Apart from the primary monetary impact of, say, a fiscal deficit leading to growth in the money supply and this in turn stimulating spending, secondary effects linking the budget outcome to subsequent rounds of credit expansion should also be mentioned. A fiscal deficit results in higher bank deposits (an important component of the money supply) and higher bank reserve assets (initially by higher bank balances at the Reserve Bank, which are generally then converted into government securities). These increased reserves may form the basis for additional bank lending if the demand for loans is also expanding, as it is likely to be in a situation of fiscal ease.

The extent to which banks, and for that matter other financial institutions, will increase credit as a consequence of larger holdings of reserve assets depends not only on the interplay of a variety of demand and supply factors but also on the general policy stance and on sometimes lengthy and variable lags in the adjustment process. Although these relationships should not be oversimplified, historical evidence[9] does suggest that after a time, a higher monetary base can be expected to encourage increased private sector credit expansion. This promotes spending and particularly importing (for which bank loans have always been an important source of finance). Again, the inter-related nature of fiscal and monetary policy is demonstrated.

The solution to the problem of private sector credit growing too rapidly lies partly in the pursuit of more appropriate monetary policies. The recent moves in the public debt policy/open market operations areas recognise this need, as does the announcement of private sector credit growth guidelines by the authorities. Reserve ratio policy still has some part to play, but direct controls of this nature have rarely been effective in the past, and certainly not for other than short periods[10].

But it is not sufficient simply to have appropriate monetary policy tools even if there is an adequate will to employ them (which has not always been the case). The rational solution is clearly to tackle the problems at an earlier stage of their origins.

In particular, there is a need to avoid excessively expansionary fiscal policies which generate not only their own multiplier effects on incomes and expenditures but also too often set in train subsequent rounds of money and credit expansion which have often proven difficult to moderate. If Government were prepared to commit itself to less variable fiscal policies and avoid the substantial fluctuations in the budget outcomes of recent years, it would be possible to assess a desirable rate of growth for the total money supply and to derive an aggregate monetary or domestic credit guideline which could include both the private and government sectors. This would assist policy formulation generally and would no doubt be welcomed by the private sector as evidence of an official determination to pursue co-ordinated policies.

Matters would probably also be greatly assisted by the operation of more effective farm income stabilisation policies to help moderate the immediate expansionary effects of higher export prices on the economy when these come to pass. Although this topic is essentially beyond the scope of this paper, it can be observed that there would probably be much to gain from a move to farm income stabilisation arrangements more in tune with the new monetary policy tools. Basically, such arrangements should be viewed as complementary to open market operations in the sense that the Government should decide in round terms what volume of funds should be withdrawn (or injected) through farm income stabilisation schemes and then set the incentives, by way of attractive interest rates and taxation arrangements, to achieve the desired flows of funds. The interest rates on stabilisation deposits should be market competitive. The tax arrangements should encourage deposits of (tax exempt) income in high income years, and withdrawal of deposits in low income years, at which stage the amounts withdrawn by farmers from stabilisation accounts would become part of their taxable income. The schemes would thus become more voluntary in nature; would rely less on arbitrary price ceiling and floors; would have a stabilisation rather than an income maintenance rationale; and would be more efficient in their effects on farmers and in terms of the co-ordination of the schemes with conventional fiscal and monetary policies.

Finally, the operation of policy in each of these three areas is likely to be facilitated by the use of the more flexible exchange rate policy announced in the 1979 Budget. Under this new 'crawling peg' system, New Zealand's exchange rate will be adjusted regularly and by small amounts to take account of different rates of increase in domestic costs and inflation rates in our major trading partners. Beyond this, any structural shift in the country's terms of trade will also be taken into consideration in determining the pace and magnitude of the exchange rate adjustments. The essence of the approach is to preserve the profitability of exporters and assist us to adjust to any balance of payments problem. In turn, this should strengthen the overall mix of economic policies (although the reasons why this should be so need not be pursued here).

### (b) Financing the Deficit[11]

The inter-relationship of fiscal and monetary policies can also be demonstrated by looking at the way in which the budget deficit before borrowing is financed. Historical data are set out in Table 13. This shows that deficit financing can take several major forms, each of which has been used to varying extents in New Zealand. The options are:

— borrowing from the Reserve Bank or running down cash balances at the Reserve Bank;

— overseas borrowing;

— borrowing from the trading banks;

— borrowing from the non-bank private sector.

Under the first alternative, which is the classic case of 'printing money' via the central bank, there is no offset

9. See references [1], [2] and [19]. These spell out in greater detail the nature of the relationship referred to. Beyond this, Spencer [19] looks at a range of monetary aggregates and their relationships to economic activity on the one hand and the policy instrument variables (interest rates and the reserve base) on the other hand. Although these second round monetary effects of fiscal policy are both interesting and relevant to the present study, they are complex and warrant separate consideration along the lines of the treatment they receive in the papers cited.

10. See reference [5] for the explanation of why this has been the case.

11. An exceptionally clear treatment of this issue is provided by J. R. Hewson in his paper 'The Financing of Budget Deficits' in the Australian context, reference [7].

to the effects of the deficit before borrowing described earlier in this paper. If the Reserve Bank buys securities from the Treasury, it credits the proceeds to the Government's account. So the effect of the deficit is simply to increase both the money supply and the reserve assets of the banking system. The first effect is to raise the financial asset holdings, and hence the spending power of the community; the second effect is to encourage further lending by the banks, unless some other form of offsetting monetary policy is adopted, such as increased official reserve ratios.

Borrowing from the central bank is thus the residual form of deficit financing, usually to be resorted to only if other forms of borrowing yield insufficient funds, or if government wishes deliberately to create money to stimulate the economy. The risk is of course that the effects will be inflationary, and certainly this financing method carries the greatest potential risks of this kind. In effect, the deficit before borrowing would be fully 'monetised' if financed solely by borrowing from the Reserve Bank. In practice, this is an extreme case and other alternatives are invariably pursued.

Overseas borrowing has often been an important source of funds for government (see Table 13), although the primary justification for such borrowing has usually been the existence of an overseas current account deficit which itself required financing by raising loans abroad. When funds are borrowed overseas by government, New Zealand's overseas assets increase (at least for a time) and the Government's account at the Reserve Bank is credited with the proceeds. Accordingly, in terms of its monetary impact on the private sector, the financing of a fiscal deficit by this means is initially much the same as selling securities to the Reserve Bank. There is no offset to a direct expansion of the money supply.

However, to the extent that this expansion stimulates economic activity and this in turn increases the external deficit, then the foreign borrowing does have the advantage of helping to finance the overseas deficit, as the overseas assets created by the borrowing are run down. In this way, its ultimate effects are different from borrowing from the central bank which creates domestic money but not overseas assets. Although foreign borrowing may be thought to reduce the need to resort to other forms of financing, and particularly Reserve Bank financing, its monetary effects are in fact the same as the latter. It represents a direct monetisation of the budget deficit.

Borrowing from the trading banks involves the exchange of cash balances held by the banks at the Reserve Bank for government securities or treasury bills. In other words, there is a change in the structure and profitability of the trading banks' asset portfolios. The difference between this and borrowing from the central bank itself is qualitative, and depends in part on institutional arrangements and policy reactions. For example, in New Zealand where there is no cash ratio or explicit liquidity convention for the banking system, the initial reaction of the banks to an increase in their cash balances as a result of a budget deficit would normally be to use those balances to acquire treasury bills or other securities. The secondary effects would then depend on the demand for credit, since the higher reserve holdings of the banks would enable them more readily to satisfy such demand, and the stance of monetary policy. The authorities may for instance act to offset some of the secondary effects by tightening reserve asset ratio policy. This would be done by reducing the margin of 'free' reserves held by the banking system, so discouraging them from increasing their lending too rapidly.

Alternatively, the Reserve Bank may undertake public debt sales or open market operations designed to sell securities to the non-bank sector. The non-bank financial institutions, and the public generally, pay for securities by utilising deposit balances with banks, thereby reducing the money supply. The trading banks finance this flow of loan funds to the Reserve Bank either by running down their cash balances at the Reserve Bank or, if their cash holdings are insufficient, by selling their own holdings of securities to facilitate the transfer of funds.

Borrowing from the non-bank private sector thus reduces both the money supply and the reserve assets (cash balances, treasury bills and government securities) of the banking system. The public is encouraged to hold government securities instead of money, or instead of private sector financial assets. This represents an offset to the monetary impact of the budget deficit before borrowing. The process assists in 'demonetising' the deficit.

The ultimate effectiveness of this approach, one which as column 2 of Table 13 shows has been actively used in New Zealand, depends on a variety of factors. Since the reserve base of the banking system is reduced by non-bank security sales, the potential for secondary credit expansion is also reduced. If the securities sold are relatively illiquid, such as 5 or 10 year bonds, and if these are paid for out of current account deposits, or by switches from other short term deposits, then the public's financial assets become less liquid. Their spending potential is thereby reduced. Similarly, if the sale of securities is achieved by pushing up interest rates, then interest sensitive private sector expenditures will be adversely affected and investment may be 'crowded out'.

On the other hand, if the securities sold by government are relatively liquid, and easily converted into money, such as is the case with the special Savings Stock which is redeemable on one month's notice, the dampening effects may be somewhat less than those implied by the sale of long term bonds. Nevertheless, this process still maintains an advantage over borrowing from the Reserve Bank or the banking system, in that it eases the potential second round effects by reducing the banks' reserve assets. In practice, too, much of the Savings Stock may be held for its full five year maturity. If this turns out to be the general case, it would indicate that this stock is still considerably less liquid than current account and other short term deposits.

Apart from these liquidity type considerations, the method of selling securities to the private sector is of some importance. For many years, and especially until 1976/77 when most interest rate controls were removed, the vast bulk of the non-bank sales went to captive institutions, which were forced by various government security ratio requirements to hold certain proportions of their deposits or total assets in government stock. The problem with this procedure was that the non-captive financial flows grew rapidly relative to the funds of the major controlled institutions, and the effectiveness and efficiency of monetary policy was thereby greatly impaired. The ratio obligations helped government finance its budget deficit, but greatly aggravated the growth of credit through non-regulated channels. This detracted from part of the point of borrowing from the public rather than from the banking system.

The removal of interest rate controls and upgrading of the competitiveness of Government's own securities has since 1976 assisted in easing reliance on captive institutions, and promoting a greater flow of funds from

the personal sector into government stock of various forms. If this gradual process of change continues in the future, it should facilitate not only a more appropriate form of deficit financing but also enhance the general effectiveness of monetary policy.

The public's attitude to its holdings of government securities and, for that matter, to its holdings of financial assets generally, will depend also on a range of other factors such as general economic conditions, business confidence, the stance of monetary policy, interest rate and inflation levels and expectations about each of these. The above description of the effects of different forms of deficit financing is thus a fairly simple one and does not deal with all the complexities involved.

But the essential points are these. If a budget deficit is to be financed in a relatively non-inflationary way, with the least potential for monetary expansion, then borrowing from the non-bank private sector is the preferred method. This may involve increased interest rates on government securities which in turn will place pressure on interest rates generally. Against this problem must be weighed the disadvantages of financing the deficit by other means, each of which in varying degrees is likely to be of a considerably more inflationary character than non-bank borrowing. The extent of overseas borrowing is usually determined by the size of the external current account deficit and the extent of any private capital flows. But the direct monetary effects of financing a budget deficit by this means are similar to those of borrowing from the banking system. The latter procedure monetises the fiscal deficit by adding to the money supply and increasing the financial system's reserve base. This may appear to place less pressure on interest rates, but it results in less control over the growth of money and credit and, ultimately, to a higher rate of inflation and a larger external deficit.

Finally in this section, it is worth mentioning that public understanding of the form and nature of budget financing transactions would probably be considerably enhanced by improved presentation of the financing data on a regular basis. Ideally, this should provide a breakdown of the data into changes in both government assets and liabilities, overseas and domestic, on a gross rather than a net flow basis. Such an exercise was attempted in reference [4]. Regular quarterly detailed historical data should be provided in this area, preferably along with some indication in the Budget document itself of the financing plans for the future year. This would be least implicitly, and most desirably explicitly, make known the monetary implications of the Budget.

## 7. POLICY IMPLICATIONS

If the various strands of this discussion are brought together, a number of implications emerge for the operation of fiscal policy. These are discussed below.

(1) The major features of the Government's budgetary operations over the past two decades can be summarised as follows:

— the net effect of government budget transactions in all but three of the past nineteen years was to withdraw funds from the private sector, these withdrawals tending however to be offset by a combination of Reserve Bank and overseas transactions

— until 1974/75, the adjusted deficit before borrowing exhibited remarkably small fluctuations, tending to be a relatively small percentage of GNP over a long period. The net withdrawals of funds by fiscal means, as reflected in the adjusted internal surpluses, resulted primarily from largely involuntary government domestic borrowing

— from 1974/75 onwards, this pattern altered sharply and, in the face of an exceptionally large external deficit, government fiscal operations were characterised by substantial swings in policy

— these fluctuations began with the large budget deficits of 1974/75 and 1975/76, designed to insulate the domestic economy from the full impact of the overseas deficit; changed to a much tighter stance in the next two years, during which time economic activity moved into a substantial recession and unemployment increased sharply; and then reverted again in 1978/79 to a strongly expansionary phase to help get the economy moving despite the persistence of the foreign deficit and a high inflation rate

— as would be expected, these large swings in the budget outcome in recent years were accompanied by sizeable fluctuations in growth rates of total government expenditure and revenue, and also in the monetary and credit aggregates

— although these changes reflected at times widely differing responses to a range of economic problems, including particularly the constraint of a sizeable external deficit, there can be little doubt that they helped induce considerable uncertainty about the likely path of economic activity; at least initially seriously delayed adjustment to the overseas deficit; probably encouraged rather than dampened inflation; and perhaps diverted attention from the pursuit of a more rational, phased adjustment to New Zealand's external difficulties based on a well balanced package of measures designed to achieve a reasonably clearly defined set of objectives over the medium term.

(2) The first lesson therefore of this analysis is that we must endeavour in future to avoid such large swings in fiscal policy within such relatively short time horizons.

(3) We need to take a medium term view of New Zealand's problems, over say three to five years, accept the facts of life as dictated by the external constraint, and design an integrated array of policies designed to move us gradually but steadily towards the set of objectives which we wish to achieve. There is a need to blend short term stabilisation policy with longer term structural policy, and to avail ourselves of the full range of policy instruments: fiscal, monetary, exchange rate, tariffs, and so on.

(4) The need to avoid repeating the fluctuations in budgetary operations of the mid to late-1970's is emphasised by the long and variable lags involved in fiscal effects on the economy. These lags can stretch over at least several years, thus spanning more than one cyclical period. The multiplier effects of fiscal actions on the real economy and on the balance of payments can be large, and certainly greater than the initial change in (say) government expenditure. For these reasons again it is necessary to take a medium term view on fiscal policy and not simply a short term (one or two years) view. There now seems to be little doubt that in recent years we have taken views on fiscal policy within much too short a time framework.

(5) This theme is analagous to that underlying the monetary policy debate of the past decade or so. It is now widely accepted internationally, albeit perhaps less so in New Zealand, that because of the long and variable lagged effects of changes in the money supply on the economy, policymakers should aim for relatively stable rates of growth for the monetary and credit aggregates. Moreover, these rates of increase should be gradually phased down if inflation is to be reduced. In New Zealand the Reserve Bank has indicated a desire to move monetary policy in this general direction, but this has been frustrated by the substantial swings in fiscal policy (as well as by other factors). In other words, the variability in fiscal policy has seriously hampered the operation of an effective monetary policy.

(6) To achieve adequate co-ordination between fiscal and monetary policy, and greater stability in both, it may be desirable to adopt a monetary guideline of which government was part, but this could only be meaningful if government's credit requirements were assessed in a balanced way against those of the private sector and if the authorities were reasonably confident they could attain the guideline. The recent moves towards more active public debt policy and open market operations by the Reserve Bank, and the now much more flexible interest rate policy, would be well suited to the use of a broadly defined monetary guideline. More flexible farm income stabilisation arrangements of a voluntary kind based on an appropriate market-related system of incentives could also usefully complement these moves. The pursuit of an appropriate exchange rate policy is another necessary corollary to a well balanced set of policy instruments.

(7) The evidence shows that the automatic stabilisation elements of fiscal policy have tended to work to reduce the budget deficit, although their net relationship to economic activity seems variable. This has two implications: first, that the swings in fiscal policy have been largely of discretionary origin and, secondly, that any reduction in the automatic elements may not be particularly harmful to the stabilisation role of fiscal policy providing any changes are even-handed in their effects on expenditure and revenue and providing governments exhibit adequate fiscal responsibility.

(8) The degree of automaticity which is desirable in budgetary operations is probably a matter which warrants further consideration. Large proportions of both expenditure and revenue are at present of an essentially automatic nature. An easing of these automatic processes may possibly bring wider benefits to economic policy. For example, the virtually automatic pass-on of private sector wages into government wages ensure not only perpetual increases in this portion of government spending but also must add in turn to further private sector wage pressures and thus aggravate inflation. It could be argued that Government should set an example to the private sector by resisting wage increases based purely on an overgeneralised relativity concept and negotiate with its employees on a discretionary basis to ease the leap-frogging wage round effects. On the revenue side, the introduction of indexation for the income tax scales could force governments to consider more carefully the full range of their outlays (since their revenue would not then automatically rise faster than people's incomes). There would also be a need to make more explicit decisions about the proportion of private sector income which should be paid in tax each year (since this would remain fairly much constant unless it was decided to increase the tax rates as such). The public would have a better understanding of their prospective tax liabilities.

(9) To assist further in a wider understanding and improved analysis of government budgetary transactions it is suggested that:

— the budget data be published in an adjusted form to distinguish clearly between government transactions with the private sector, the overseas sector, and the Reserve Bank; with the adjustments covering expenditure, revenue and borrowing

— financing transactions should be published in more detail including some indications of borrowing intentions in the coming Budget year

— public finance data be released monthly rather than quarterly, and with less publication lag than at present, even if early publication were to cover only the main aggregates

— annual budgets should make clearer the underlying assumptions about the prospective state of the real economy, the balance of payments, monetary growth, and expected price movements, even if the picture were only painted in broad terms

— with this in mind, it would be necessary and useful to express the budget aggregates in both real and nominal (current value) terms

— further research on the effects of the budget on the economy could usefully be initiated and where possible published by the Treasury, again to facilitate a wider understanding of fiscal policy.

(10) There is clearly a need, although it is less clear how it can be met, for various governments to resist the temptation to resort to over-generous Budgets in election years. In some of these years, Budget concessions have been granted beyond what economic circumstances would normally have justified, with the election 'cycle' thereby contributing on occasions to a greater than warranted variability in fiscal policy.

(11) Apart from the obvious need for political will to ensure fiscal responsibility, whether this be in election years or at other times, there may be a need for improved administrative control of government expenditure. This point has been made on occasions by the Auditor-General and is highlighted by the differences which emerge from a comparison of budget night predictions with the actual out-turns of the public accounts at year-end (see Table 9).

(12) Throughout the paper, there has been emphasis on the nature of the external constraint New Zealand faces, through a persistent overseas current account deficit, and the way in which fluctuations in our external fortunes are related to movements in domestic activity and to budgetary transactions. In the longer run, appropriate economic policies may be able to ease this constraint. In the short run, it will inhibit the adoption of counter-cyclical fiscal (and monetary) policy, at least in any vigorous way. The years 1974/75 and 1975/76 sharply exemplified this lesson. This is another compelling argument in favour of much less variability in our year-by-year fiscal policy than we have experienced since the mid-1970's.

(13) On the other hand, no persuasive evidence emerged from the study to suggest that New Zealand should adopt a constant rate of growth of real government expenditure, regardless of circumstances. This is a deceptively over-simplified straight-jacket approach. It is doubtful that New Zealanders would wish to limit the role of Government so rigidly. The effect of the budget depends on a multitude of inter-related factors: expenditure, revenue, and financing transactions. The levels as well as the rates of growth of each of these need to be considered. So too does the net outcome, and in the final analysis it is the thrust of this paper that we need reduced fluctuations in the net effects of the budget in a rather broad sense. This certainly implies rates of growth of government spending which fluctuate much less violently than in the past but it would still allow some degree of flexibility within a narrower range of growth rates, with that degree depending on what happens to other facets of the budget and the needs of the community. It is impossible to be precise about one facet of the budget without knowing the assumptions about all the remaining areas. Just as fiscal policy should be co-ordinated with other policies, so too should the various components of the budget be treated in an integrated fashion.

(14) Although the evidence on the inter-relationship between the government's budgetary operations and the rate of inflation is not clear-cut, since the linkage is as much indirect as it is direct, empirical research within New Zealand [20] and elsewhere does make it clear that if particular policy instruments are to be assigned to particular policy targets, then adequate control of government expenditure may have a comparative advantage as a necessary policy tool in achieving a more moderate inflation rate. But for it to be a sufficient tool, a range of other policy instruments must also be employed to achieve an appropriate mix between these instruments and the government's various economic objectives.

(15) As far as financing the budget deficit is concerned, the least inflationary method is by borrowing from the non-bank private sector. For this to be done effectively, it requires government to offer competitive interest rates on its securities and this may place pressure on private sector interest rates. This may be unpalatable but it is the only way to ensure reasonable control over the growth of money and credit. The other alternatives — borrowing overseas, from the trading banks, or from the Reserve Bank — each tend to be considerably more inflationary than non-bank domestic borrowing.

## 8. CONCLUSION

The impact of fiscal policy on the economy depends on the state of the economy itself, the nature of the external constraint, the size of the various multiplier effects and the length of the lags involved in these, and the stance of other policy instruments. The assessment of fiscal policy is thus a complicated business.

This paper has endeavoured to set out the nature of these effects and outline some of the empirical evidence pertaining to them. Further research is, as usual, called for.

But the essential point is that, after many years of a relatively unchanging approach to the government's budgetary operations, New Zealand entered a period in the mid-1970's when the external circumstances became unusually difficult. The Government responded with large and sudden shifts in fiscal policy. This paper has argued the case in favour of much less variability in fiscal (and monetary) policy.

This would facilitate a less bumpy path towards our economic objectives (which themselves should be more clearly defined); would generate less uncertainty about the Government's intentions; and would have a generally less disruptive effect on the economy.

A longer-term view on economic policy formation, and a co-ordinated approach to both the long and short run problems, is essential. The swings in fiscal policy in recent years suggest that such an approach has been sacrificed to shorter-term considerations and, indeed, even the relative weights attached to these immediate issues have varied greatly within quite short time spans. The approach has too often been ad hoc and too little account seems to have been taken of the magnitude of the effects of a change in fiscal policy on the economy and the great length of time it takes for these effects to work their way through the system.

We have to learn to live with the economic fluctuations which originate from outside New Zealand. These fluctuations greatly complicate economic management. Nevertheless, there still appears to be ample scope for us to improve the stabilisation role of fiscal policy, not by pursuing widely divergent outcomes each year in response to our most immediately pressing problem, but rather by adopting more consistent and less variable policies directed towards a set of agreed and maintained medium-term economic objectives.

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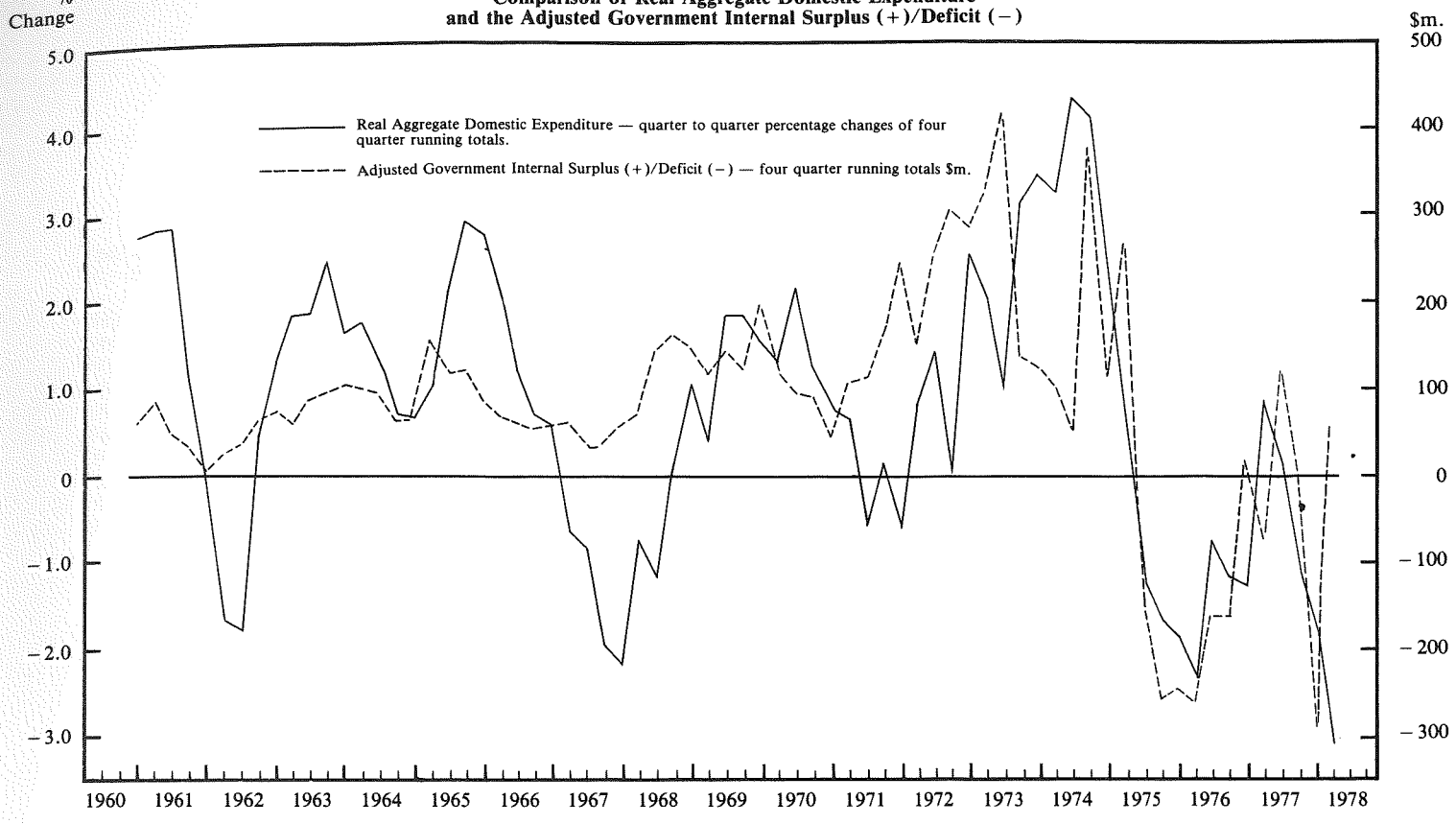
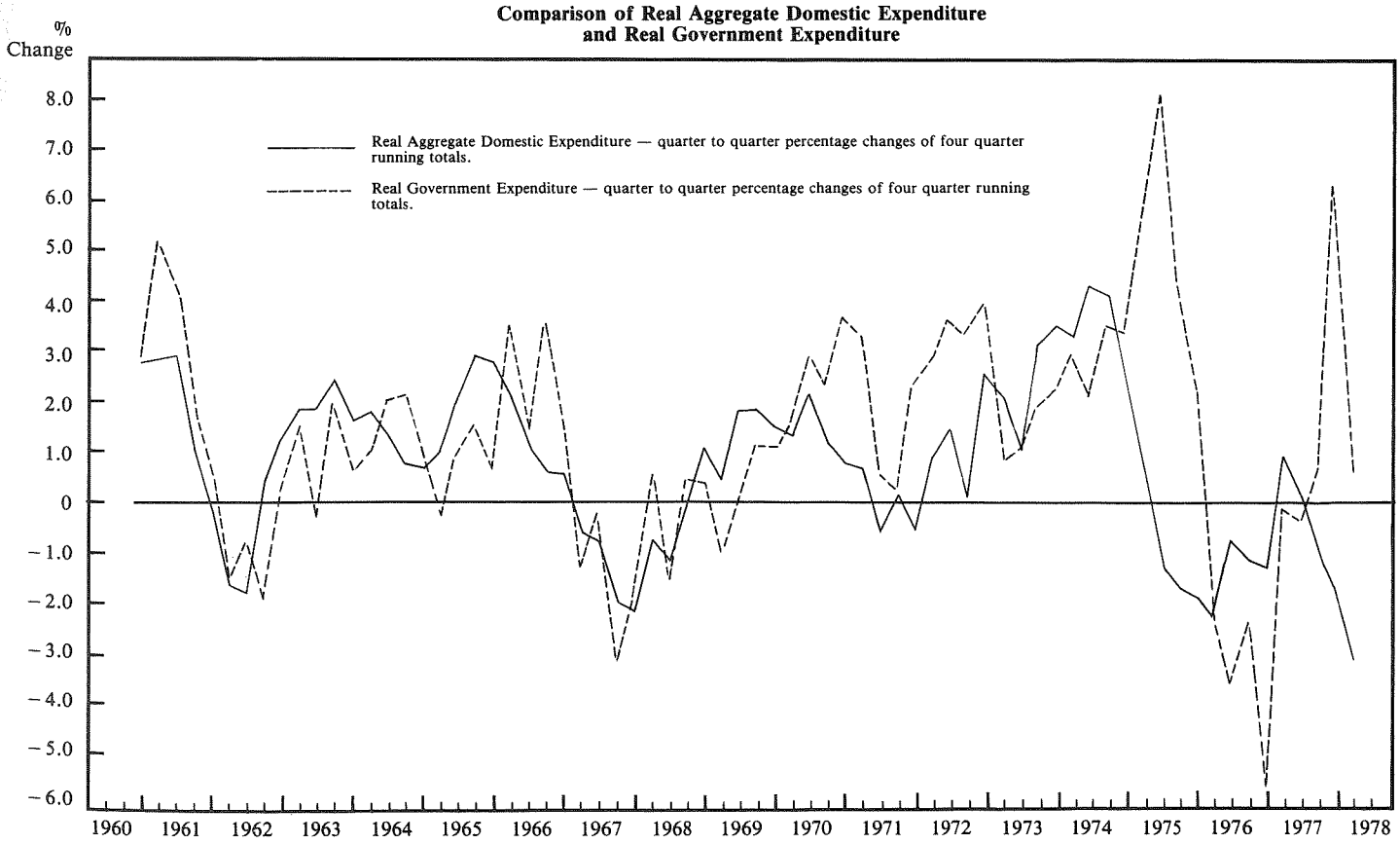
**Graph 1**

**Comparison of Real Aggregate Domestic Expenditure and the Adjusted Government Internal Surplus (+)/Deficit (−)**




**Graph 2**

**Comparison of Real Aggregate Domestic Expenditure and Real Government Expenditure**



# LIST OF TABLES

**TABLE 1**
**Government Budget Data: Conventional Format**

| Year ended March | (1) Total Government Expenditure $m. | (2) Total Government Revenue $m. | (3) Balance Before Borrowing $m. Deficit (−) | (4) Annual % Changes Expenditure | (5) Revenue |
|---|---|---|---|---|---|
| 1961 | 777.3 | 698.2 | − 79.1 | | |
| 1962 | 835.6 | 754.4 | − 81.2 | 7.5 | 8.0 |
| 1963 | 847.1 | 720.0 | − 127.1 | 1.4 | − 4.6 |
| 1964 | 896.6 | 780.7 | − 115.9 | 5.8 | 8.4 |
| 1965 | 974.4 | 884.7 | − 89.7 | 8.7 | 13.3 |
| 1966 | 1,074.8 | 959.6 | − 115.2 | 10.3 | 8.5 |
| 1967 | 1,165.5 | 1,031.2 | − 134.3 | 8.4 | 7.5 |
| 1968 | 1,181.1 | 1,070.6 | − 110.5 | 1.3 | 3.8 |
| 1969 | 1,212.4 | 1,077.7 | − 134.7 | 2.7 | 0.7 |
| 1970 | 1,317.1 | 1,241.3 | − 75.8 | 8.6 | 15.2 |
| 1971 | 1,597.8 | 1,517.2 | − 80.6 | 21.3 | 22.2 |
| 1972 | 1,862.3 | 1,790.0 | − 72.3 | 16.6 | 18.0 |
| 1973 | 2,219.3 | 2,013.3 | − 206.0 | 19.2 | 12.5 |
| 1974 | 2,633.2 | 2,391.5 | − 241.7 | 18.7 | 18.8 |
| 1975 | 3,410.8 | 3,020.4 | − 390.4 | 29.5 | 26.3 |
| 1976 | 4,385.9 | 3,384.2 | − 1,001.7 | 28.6 | 12.0 |
| 1977 | 4,504.3 | 3,998.2 | − 506.1 | 2.7 | 18.1 |
| 1978 | 5,537.2 | 4,842.8 | − 694.4 | 22.9 | 21.1 |
| 1979 | 6,679.7 | 5,233.8 | − 1,445.9 | 20.6 | 8.1 |

**TABLE 2**
**Measures of Economic Policy Objectives**

| Year ended March | Real GNP $m. (1965/66 prices) | Unemployment* | Consumer Price Index Base: 1965 = 1.000 | B.O.P. Current Account Surplus (+)/ Deficit $m. | Real GNP Annual % Change | Unemployment % of Total Labour Force | Consumers' Price Index Annual % Change | B.O.P. Current Account Surplus (+)/ Deficit as % of GNP (Current Prices) |
|---|---|---|---|---|---|---|---|---|
| 1960 | 2,851 | 1,122 | 0.872 | 80.6 | 4.2 | 0.13 | 2.13 | 3.27 |
| 1961 | 3,005 | 513 | 0.880 | − 109.1 | 5.4 | 0.06 | 0.92 | − 4.12 |
| 1962 | 3,113 | 498 | 0.899 | − 112.5 | 3.6 | 0.06 | 2.16 | − 4.09 |
| 1963 | 3,195 | 1,146 | 0.921 | − 46.1 | 2.6 | 0.12 | 2.45 | − 1.56 |
| 1964 | 3,399 | 769 | 0.940 | − 30.4 | 6.4 | 0.08 | 2.06 | − 0.94 |
| 1965 | 3,596 | 659 | 0.978 | − 37.0 | 5.8 | 0.07 | 4.04 | − 1.05 |
| 1966 | 3,823 | 593 | 1.007 | − 179.2 | 6.3 | 0.06 | 2.97 | − 4.69 |
| 1967 | 3,958 | 608 | 1.039 | − 160.2 | 3.5 | 0.06 | 3.18 | − 4.03 |
| 1968 | 3,936 | 7,315 | 1.104 | − 83.4 | − 0.6 | 0.70 | 6.26 | − 2.02 |
| 1969 | 4,000 | 7,118 | 1.152 | 48.6 | 1.6 | 0.68 | 4.35 | 1.12 |
| 1970 | 4,194 | 2,648 | 1.207 | 29.6 | 4.9 | 0.25 | 4.77 | 0.62 |
| 1971 | 4,380 | 1,666 | 1.303 | − 198.2 | 4.4 | 0.15 | 7.95 | − 3.58 |
| 1972 | 4,500 | 4,885 | 1.432 | − 15.6 | 2.7 | 0.44 | 9.90 | − 0.24 |
| 1973 | 4,679 | 7,073 | 1.522 | 138.8 | 4.0 | 0.63 | 6.28 | 1.85 |
| 1974 | 5,018 | 2,277 | 1.663 | − 91.5 | 7.2 | 0.20 | 9.26 | − 1.05 |
| 1975 | 5,230 | 2,103 | 1.860 | − 1,364.4 | 4.2 | 0.18 | 11.85 | − 14.44 |
| 1976 | 5,274 | 9,632 | 2.151 | − 1,015.6 | 0.8 | 0.80 | 15.65 | − 9.31 |
| 1977 | 5,228 | 11,887 | 2.495 | − 831.5 | − 0.9 | 0.98 | 15.99 | − 6.50 |
| 1978 | 5.076+ | 21,230 | 2.860 | − 715.8 | − 2.9+ | 1.73+ | 14.43 | − 5.11+ |
| 1979 | 5,203+ | 47,810 | 3.172 | − 462.0** | 2.5+ | 3.87+ | 10.91 | − 2.90+ |

* Includes workers employed on Special Government Employment Programmes (from 1966)
** Provisional.
\+ Estimate.

**TABLE 3**

**Government Budget Data: Comparison of Conventional and Adjusted Formats**

| | *Conventional Budget Table 2* | | | *Adjusted Budget Data* | | | |
|---|---|---|---|---|---|---|---|
| | *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* | |
| *$ million Year ended March* | *Deficit (−) Before Borrowing* | *Net Borrowing in New Zealand* | *Internal Surplus (+)/ Deficit* | *Deficit (−) Before Borrowing* | *Net Borrowing from Private Sector* | *Internal Surplus (+)/ Deficit* | *Difference in Measures of Internal Surplus i.e. (3-6)* |
| 1961 | − 79.1 | 88.4 | 9.3 | − 7.3 | 88.4 | 81.1 | − 71.8 |
| 1962 | − 81.2 | 32.6 | − 48.6 | − 9.1 | 32.9 | 23.8 | − 72.4 |
| 1963 | − 127.1 | 112.1 | − 15.0 | − 48.0 | 107.3 | 59.3 | − 74.3 |
| 1964 | − 115.9 | 99.7 | − 16.2 | − 29.0 | 127.5 | 98.5 | − 114.7 |
| 1965 | − 89.7 | 105.0 | 15.3 | 5.7 | 144.3 | 150.0 | − 134.7 |
| 1966 | − 115.2 | 93.0 | − 22.2 | − 9.7 | 77.5 | 67.8 | − 90.0 |
| 1967 | − 134.3 | 70.0 | − 64.3 | − 19.4 | 82.2 | 62.8 | − 127.1 |
| 1968 | − 110.5 | 77.2 | − 33.3 | − 18.2 | 89.8 | 71.6 | − 104.9 |
| 1969 | − 134.7 | 147.1 | 12.4 | − 29.1 | 146.4 | 117.3 | − 104.9 |
| 1970 | − 75.8 | 105.6 | 29.8 | 9.6 | 110.0 | 119.6 | − 89.8 |
| 1971 | − 80.6 | 98.5 | 17.9 | 8.9 | 99.7 | 108.7 | − 90.7 |
| 1972 | − 72.3 | 85.6 | 13.3 | 25.6 | 128.1 | 153.7 | − 140.4 |
| 1973 | − 206.0 | 338.9 | 132.9 | − 92.4 | 435.9 | 343.5 | − 210.6 |
| 1974 | − 241.7 | 262.9 | 21.2 | − 25.0 | 126.9 | 101.9 | − 80.7 |
| 1975 | − 390.4 | 139.9 | − 250.5 | − 250.2 | − 26.9 | − 277.1 | 26.6 |
| 1976 | − 1,001.7 | 702.2 | − 299.5 | − 789.2 | 527.0 | − 262.2 | − 37.3 |
| 1977 | − 506.1 | 378.0 | − 128.1 | − 199.2 | 122.0 | − 77.2 | − 50.9 |
| 1978 | − 694.4 | 434.4 | − 260.0 | − 360.7 | 568.2* | 207.5* | − 467.5 |
| 1979 | − 1,445.9 | 997.6 | − 448.3 | − 990.0 | 996.5* | 6.5* | − 454.8 |

* To preserve historical comparability $487 million was deducted and $99.5 million was added to these figures for the years ended March 1978 and March 1979 respectively to allow for the effects of the compensatory deposit scheme. These deposits by the Reserve Bank with the trading banks had the net effect of boosting (or reducing) Government security sales by this much more than they would have been in the absence of the scheme.

## TABLE 4
### Part I: Adjusted Stabilisation Data
### Net Cash Withdrawal (−) From or Injection (+) to the Private Sector

| $ million Year ended March | (1) *From Budget Activities i.e. Govt's Internal Cash Surplus (−) or Deficit (+) after Borrowing from the Private Sector* | (2) *From Overseas, i.e. Exchange Transactions Cash Withdrawal (−) or Injection (+) Stemming Primarily from the Reserve Bank's Role as Trading Banker* | (3) *From the Reserve Bank's Role as Lender of Last Resort, i.e. Changes in Advances to Trading Banks and the official Money Market* | (4) *From Changes in Private Sector Demand and Time Deposits at the Reserve Bank** | (5) *Overall Cash Withdrawal (−) or Injection (+) into the Private Sector, i.e. (1) + (2) + (3) + (4)* |
|---|---|---|---|---|---|
| 1961 | − 81.1 | 40.0 | 1.1 | − 0.2 | − 40.2 |
| 1962 | − 23.8 | 33.5 | 15.6 | − 3.8 | 21.5 |
| 1963 | − 59.3 | 78.4 | − 16.7 | 3.9 | 6.3 |
| 1964 | − 98.5 | 60.6 | 3.7 | 0.0 | − 34.2 |
| 1965 | − 150.0 | 107.7 | 5.2 | 0.1 | − 37.0 |
| 1966 | − 67.8 | 46.4 | 57.6 | − 4.8 | 31.4 |
| 1967 | − 62.8 | − 1.2 | 20.5 | − 0.2 | − 43.7 |
| 1968 | − 71.6 | 106.8 | − 37.4 | − 2.6 | − 4.8 |
| 1969 | − 117.3 | 115.8 | 15.3 | − 0.2 | 13.6 |
| 1970 | − 119.6 | 148.0 | − 26.1 | − 0.1 | 2.2 |
| 1971 | − 108.6 | 72.5 | 53.1 | − 1.2 | 15.8 |
| 1972 | − 153.7 | 291.2 | − 88.3 | 1.1 | 50.3 |
| 1973 | − 343.5 | 575.0 | 2.9 | − 240.1 | − 5.7 |
| 1974 | − 101.9 | 169.7 | 4.3 | − 86.3 | − 14.2 |
| 1975 | 277.1 | − 452.4 | 79.5 | 151.0 | 55.2 |
| 1976 | 262.2 | − 320.8 | − 66.5 | 130.6 | 5.5 |
| 1977 | 77.2 | − 1.3 | − 13.3 | − 31.0 | 31.6 |
| 1978 | − 694.5** | 76.7 | 483.4** | 12.2 | − 122.2 |
| 1979 | 93.0** | − 55.0 | − 100.0** | 15.0 | − 47.0 |

* Does not include trading bank demand deposits but does include trading banks' time deposits with the Reserve Bank. The remainder of this series consists of the change in marketing deposits plus the change in deposits in the Income Equalisation Customs Import Deposit Accounts.

** Compensatory deposits were first made in March 1978. They totalled $487 million and $387.5 million as at 31st March 1978 and 31st March 1979 respectively. Exclusion of an equivalent amount of security sales from Column (1) would reduce the 1977-78 Government surplus to $207.5 million and increase the 1978-79 surplus to $6.5 million.

## TABLE 4
### Part II: Breakdown of Government's Internal Cash Surplus (+)/Deficit (−) after Borrowing from the Private Sector

| $ million Year ended March | (1) *Cash Surplus (+) or Deficit (−) before Capital Transactions* | (2) *Government's Deficit (−) on Current O.E.T. Transactions via Reserve Bank* | (3) *Government's Internal Cash Surplus (+) or Deficit (−) before Capital Transactions* | (4) *Net Internal Borrowing from the Private Sector by Government* | (5) *Government's Internal Cash Surplus (+) or Deficit (−) after Borrowing i.e. (3) + (4)* |
|---|---|---|---|---|---|
| 1961 | − 79.2 | − 71.9 | − 7.3 | 88.4 | 81.1 |
| 1962 | − 80.2 | − 71.1 | − 9.1 | 32.9 | 23.8 |
| 1963 | − 122.0 | − 74.0 | − 48.0 | 107.3 | 59.3 |
| 1964 | − 107.2 | − 78.2 | − 29.0 | 127.5 | 98.5 |
| 1965 | − 84.7 | − 90.4 | 5.7 | 144.3 | 150.0 |
| 1966 | − 114.1 | − 104.4 | − 9.7 | 77.5 | 67.8 |
| 1967 | − 134.4 | − 115.0 | − 19.4 | 82.2 | 62.8 |
| 1968 | − 110.5 | − 92.3 | − 18.2 | 89.8 | 71.6 |
| 1969 | − 109.0 | − 79.9 | − 29.1 | 146.4 | 117.3 |
| 1970 | − 75.4 | − 85.0 | 9.6 | 110.0 | 119.6 |
| 1971 | − 82.1 | − 91.0 | 8.9 | 99.7 | 108.6 |
| 1972 | − 71.3 | − 96.9 | 25.6 | 128.1 | 153.7 |
| 1973 | − 189.0 | − 96.6 | − 92.4 | 435.9 | 343.5 |
| 1974 | − 125.3 | − 100.3 | − 25.0 | 126.9 | 101.9 |
| 1975 | − 420.5 | − 170.3 | − 250.2 | − 26.9 | − 277.1 |
| 1976 | − 1,052.6 | − 263.5 | − 789.2 | 527.0 | − 262.2 |
| 1977 | − 496.7 | − 297.5 | − 199.2 | 122.0 | − 77.2 |
| 1978 | − 697.3 | − 336.6 | − 360.7 | 1,055.2* | 694.5* |
| 1979 | − 1,449.0 | − 459.0 | − 990.0 | 897.0* | − 93.0* |

* These figures are distorted as a consequence of the introduction of the compensatory deposit scheme for the trading banks in March 1978. These deposits totalled $487 million and $387.5 million at 31st March 1978 and March 1979 respectively. To obtain historical comparability with earlier years' figures, an appropriate amount of securities sales should be deducted from Colums (4) and (5) to give figures for 1977/78 of $568.2 million and $207.5 million and figures for 1978/79 of $996.5 and $6.5 million respectively.

**TABLE 5**
**Comparison of Budget Indicators**

| Year ended March | Deficit before Borrowing as % of GNP | | Internal Surplus (+)/Deficit (−) as % of GNP | |
|---|---|---|---|---|
| | Conventional Budget Table 2 | Adjusted | Conventional Budget Table 2 | Adjusted |
| 1961 | −3.0 | −0.3 | 0.4 | 3.1 |
| 1962 | −3.0 | −0.3 | −1.8 | 0.9 |
| 1963 | −4.3 | −1.6 | −0.5 | 2.0 |
| 1964 | −3.6 | −0.9 | −0.5 | 3.0 |
| 1965 | −2.5 | 0.2 | 0.4 | 4.2 |
| 1966 | −3.0 | −0.3 | −0.6 | 1.8 |
| 1967 | −3.4 | −0.5 | −1.6 | 1.6 |
| 1968 | −2.7 | −0.4 | −0.8 | 1.7 |
| 1969 | −3.1 | −0.7 | 0.3 | 2.7 |
| 1970 | −1.6 | 0.2 | 0.6 | 2.5 |
| 1971 | −1.5 | 0.2 | 0.3 | 2.0 |
| 1972 | −1.1 | 0.4 | 0.2 | 2.4 |
| 1973 | −2.7 | −1.2 | 1.8 | 4.6 |
| 1974 | −2.8 | −0.3 | 0.2 | 1.2 |
| 1975 | −4.1 | −2.6 | −2.7 | −2.9 |
| 1976 | −9.2 | −7.2 | −2.7 | −2.4 |
| 1977 | −4.0 | −1.6 | −1.0 | −0.6 |
| 1978 | −5.0* | −2.6* | −1.9* | 1.5* |
| 1979 | −9.1* | −6.2* | −2.8* | 0.0* |

* Estimate.

**TABLE 6**
**Comparison of Domestic Growth, External Balance and Fiscal Balance**

| Year ended March | Change in Real GNP % | Balance of Payments Current Account as % GNP | Adjusted Fiscal Internal Surplus/Deficit as % GNP | Adjusted Fiscal Deficit before Borrowing as % GNP |
|---|---|---|---|---|
| **Part I: Periods of Large External Deficits** | | | | |
| 1961 | (+5.4)+ | − 4.12 | +3.1 | −0.3 |
| 1962 | +3.6 | − 4.09 | +0.9 | −0.3 |
| 1963 | +2.6 | (− 1.56) | (+2.0) | (−1.6) |
| —— | | | | |
| 1966 | (+6.3)+ | − 4.69 | +1.8 | −0.3 |
| 1967 | +3.5 | − 4.03 | +1.6 | −0.5 |
| 1968 | −0.6 | (− 2.02) | (+1.7) | (−0.4) |
| —— | | | | |
| 1971 | (+4.4)+ | − 3.58 | +2.0 | +0.2 |
| 1972 | +2.7 | (− 0.24) | (+2.4) | (+0.4) |
| —— | | | | |
| 1975 | (+4.2)+ | −14.44 | −2.9 | −2.6 |
| 1976 | +0.8 | − 9.31 | −2.4 | −7.2 |
| 1977 | −0.9 | − 6.50 | −0.6 | −1.6 |
| 1978 | −2.9 ++ | − 5.11 ++ | +1.5 ++ | −2.6 ++ |
| 1979 | +2.5 ++ | − 2.90 ++ | 0.0 ++ | −6.2 ++ |
| Average: | +1.3 * | − 5.9 ** | +0.5 ** | −2.1 ** |
| **Part II: Periods with External Surpluses or Small Deficits** | | | | |
| 1964 | (+6.4) | −0.94 | +3.0 | −0.9 |
| 1965 | +5.8 | −1.05 | +4.2 | +0.2 |
| 1966 | +6.3 | (−4.69) | (+1.8) | (−0.3) |
| —— | | | | |
| 1969 | (+1.6) | +1.12 | +2.7 | −0.7 |
| 1970 | +4.9 | +0.62 | +2.5 | +0.2 |
| 1971 | +4.4 | (−3.58) | (+2.0) | (+0.2) |
| —— | | | | |
| 1972 | (+2.7) | −0.24 | +2.4 | +0.4 |
| 1973 | +4.0 | +1.85 | +4.6 | −1.2 |
| 1974 | +7.2 | (−1.05) | (+1.2) | (−0.3) |
| Average: | +5.4 * | +0.23 ** | +3.2 ** | −0.3 ** |

* Omitting first bracketed year of each period to allow for lags.
** Omitting last bracketed year of each period, except 1978/79.
\+ Note that these higher growth rates in each case followed preceding periods of an improved external account, as can be seen from Part II of the table. It was also true of 1960/61; there was a balance of payments current account surplus in 1959/60.
++ Estimate.

**TABLE 7: Part I. Multipliers for GNP**

Case 1: Change in level of Government expenditure without discretionary tax change
Case 2: Change in level of Government expenditure financed by tax

*Mean Multipliers* associated with an increase in Government expenditure

| Multiplier After: | *Case 1* | *Case 2* |
|---|---|---|
| 1 quarter | 0.209 | 0.272 |
| 2 quarters | 0.321 | 0.339 |
| 3 quarters | 0.405 | 0.240 |
| 4 quarters | 0.550 | 0.112 |
| 2 years | 0.939 | −0.470 |
| 3 years | 1.364 | −1.062 |
| 4 years | 1.549 | −1.116 |
| 5 years | 1.789 | −1.205 |

**Sub Cases**

(i) Mean multipliers associated with an increase in Government expenditure — alternative starting dates.

| | *1967(1)* | | *1969(1)* | | *1970(3)* | |
|---|---|---|---|---|---|---|
| Multiplier after: | *Case 1* | *Case 2* | *Case 1* | *Case 2* | *Case 1* | *Case 2* |
| 1 year | 0.660 | 0.162 | 0.421 | 0.079 | 0.569 | 0.094 |
| 2 years | 1.065 | −0.500 | 0.835 | −0.524 | 0.918 | −0.386 |
| 3 years | 1.356 | −1.007 | 1.365 | −1.259 | 1.370 | −0.919 |

(ii) Mean multipliers associated with alternative increases and decreases in Government expenditure.

| | *−5%* | | *+5%* | | *−10%* | | *+10%* | |
|---|---|---|---|---|---|---|---|---|
| Multiplier after: | *Case 1* | *Case 2* | *Case 1* | *Case 2* | *Case 1* | *Case 2* | *Case 1* | *Case 2* |
| 1 year | 0.890 | 0.440 | 0.531 | 0.096 | 0.749 | 0.309 | 0.568 | 0.128 |
| 2 years | 1.597 | −0.030 | 0.925 | −0.507 | 1.367 | −0.214 | 0.953 | −0.432 |
| 3 years | 1.558 | −0.538 | 1.331 | −1.159 | 1.867 | −0.877 | 1.396 | −0.964 |

Source: Joseph [8].

**TABLE 7: Part II: Multipliers for Current Account Balance**

*Mean Multipliers* associated with an increase in Government expenditure

| Multiplier after: | *Case 1* | *Case 2* |
|---|---|---|
| 1 quarter | −0.037 | 0.075 |
| 2 quarters | −0.064 | 0.116 |
| 3 quarters | −0.094 | 0.114 |
| 4 quarters | −0.166 | 0.126 |
| 2 years | −0.311 | 0.305 |
| 3 years | −0.534 | 0.586 |
| 4 years | −0.657 | 0.732 |
| 5 years | −0.801 | 0.854 |

**Sub Cases**

(i) Mean multipliers associated with an increase in Government expenditure — alternative starting dates.

| | *1967(1)* | | *1969(1)* | | *1970(3)* | |
|---|---|---|---|---|---|---|
| Multiplier after: | *Case 1* | *Case 2* | *Case 1* | *Case 2* | *Case 1* | *Case 2* |
| 1 year | −0.144 | 0.102 | −0.117 | 0.131 | −0.237 | 0.147 |
| 2 years | −0.341 | 0.268 | −0.268 | 0.310 | −0.323 | 0.339 |
| 3 years | −0.523 | 0.533 | −0.509 | 0.613 | −0.572 | 0.614 |

(ii) Mean multipliers associated with alternative increases and decreases in Government expenditure.

| | *−5%* | | *+5%* | | *−10%* | | *+10%* | |
|---|---|---|---|---|---|---|---|---|
| Multiplier after: | *Case 1* | *Case 2* | *Case 1* | *Case 2* | *Case 1* | *Case 2* | *Case 1* | *Case 2* |
| 1 year | −0.223 | 0.069 | −0.132 | 0.133 | −0.186 | 0.113 | −0.199 | 0.120 |
| 2 years | −0.512 | 0.183 | −0.302 | 0.322 | −0.436 | 0.273 | −0.319 | 0.288 |
| 3 years | −0.868 | 0.411 | −0.525 | 0.626 | −0.725 | 0.541 | −0.544 | 0.547 |

Source: Joseph [8].

**TABLE 8: Indicators of the Cyclical Effect of the Budget**
**Part I: Using Adjusted Budget Data**

| Year ended March | $ million | | | Percentage of GNP | | |
|---|---|---|---|---|---|---|
| | (1) Deficit Before Borrowing (Adjusted) | (2) Cyclically Neutral Balance (Adjusted) | (3) = (1-2) Cyclical Effect of the Budget (Adjusted) | (4) Deficit Before Borrowing (Adjusted) (1) i.e. GNP*100 | (5) Cyclically Neutral Balance (Adjusted) (2) GNP*100 | (6) = (4-5) Cyclical Effect of the Budget (Adjusted) (3) GNP*100 |
| 1961 | 7.3 | − 36.5 | 43.8 | 0.3 | −1.4 | 1.7 |
| 1962 | 9.1 | − 25.2 | 34.3 | 0.3 | −0.9 | 1.2 |
| 1963 | 48.0 | − 16.9 | 64.9 | 1.6 | −0.6 | 2.2 |
| 1964 | 29.0 | − 19.1 | 48.1 | 0.9 | −0.6 | 1.5 |
| 1965 | − 5.7 | − 7.7 | 2.0 | −0.2 | −0.2 | 0.1 |
| 1966 | 9.7 | − 52.2 | 61.9 | 0.3 | - 1.4 | 1.6 |
| 1967 | 19.4 | − 24.5 | 43.9 | 0.5 | −0.6 | 1.1 |
| 1968 | 18.2 | 1.3 | 16.9 | 0.4 | 0.0 | 0.4 |
| 1969 | 29.1 | − 10.1 | 39.2 | 0.7 | −0.2 | 0.9 |
| 1970 | − 9.6 | − 70.9 | 61.3 | −0.2 | −1.5 | 1.3 |
| 1971 | − 8.9 | − 59.5 | 50.6 | −0.2 | −1.1 | 0.9 |
| 1972 | − 25.6 | − 25.6 | 0.0 | −0.4 | −0.4 | 0.0 |
| 1973 | 92.4 | − 60.8 | 153.2 | 1.2 | −0.8 | 2.0 |
| 1974 | 25.0 | − 73.2 | 98.2 | 0.3 | −0.8 | 1.1 |
| 1975 | 250.2 | −134.5 | 384.7 | 2.6 | −1.4 | 4.1 |
| 1976 | 789.2 | −115.6 | 904.8 | 7.2 | −1.1 | 8.3 |
| 1977 | 199.2 | − 35.8 | 235.0 | 1.6 | −0.3 | 1.8 |
| 1978 | 360.7 | 227.2 | 133.5 | 2.6* | 1.6* | 1.0* |
| 1979 | 990.0 | 368.0 | 622.0 | 6.2* | 2.3* | 3.9* |

**TABLE 8: Indicators of the Cyclical Effect of the Budget**
**Part II: Using Conventional Budget Data**

| Year ended March | $ million | | | Percentage of GNP | | |
|---|---|---|---|---|---|---|
| | (1) Deficit Before Borrowing | (2) Cyclically Neutral Balance | (3) = (1-2) Cyclical Effect of the Budget | (4) Deficit Before Borrowing | (5) Cyclically Neutral Balance | (6) = (4-5) Cyclical Effect of the Budget |
| 1961 | 79.1 | 2.6 | 76.5 | 3.0 | 0.1 | 2.9 |
| 1962 | 81.2 | 16.5 | 64.7 | 3.0 | 0.6 | 2.4 |
| 1963 | 127.1 | 28.4 | 98.7 | 4.3 | 1.0 | 3.3 |
| 1964 | 115.9 | 30.3 | 85.6 | 3.6 | 0.9 | 2.6 |
| 1965 | 89.7 | 47.0 | 42.7 | 2.5 | 1.3 | 1.2 |
| 1966 | 115.2 | 5.8 | 109.4 | 3.0 | 0.2 | 2.9 |
| 1967 | 134.3 | 37.6 | 96.7 | 3.4 | 0.9 | 2.4 |
| 1968 | 110.5 | 67.4 | 43.1 | 2.7 | 1.6 | 1.0 |
| 1969 | 134.7 | 59.6 | 75.1 | 3.1 | 1.4 | 1.7 |
| 1970 | 75.8 | 3.4 | 72.4 | 1.6 | 0.1 | 1.5 |
| 1971 | 80.6 | 23.9 | 56.7 | 1.5 | 0.4 | 1.0 |
| 1972 | 72.3 | 72.3 | 0.0 | 1.1 | 1.1 | 0.0 |
| 1973 | 206.0 | 51.1 | 154.9 | 2.7 | 0.7 | 2.1 |
| 1974 | 241.7 | 57.1 | 184.6 | 2.8 | 0.7 | 2.1 |
| 1975 | 390.4 | 4.0 | 386.4 | 4.1 | 0.0 | 4.1 |
| 1976 | 1001.7 | 46.5 | 955.2 | 9.2 | 0.4 | 8.8 |
| 1977 | 506.1 | 160.5 | 345.6 | 4.0 | 1.3 | 2.7 |
| 1978 | 694.4 | 460.1 | 234.3 | 5.0* | 3.3* | 1.7* |
| 1979 | 1445.9 | 635.8 | 810.1 | 9.1* | 4.0* | 5.1* |

* Estimate.

The concept of the Cyclically Neutral Budget is defined as:

Cyclically Neutral Balance (C.N.B.) = ($g_o$* XCAP) — ($t_o$* X) where:

XCAP = Potential output, derived in this case from a synthetic production function which determines that level of output which would be consistent with full utilisation of both capital and labour resources. For futher details see: Lumsden, M. A. (ed.), *Further Data for Economic Research: Some Methods and Results for New Zealand*, Reserve Bank of New Zealand, Research Paper No. 13, 1974, pp.13-14.

X = GNP (or actual output)

$t_o$ = ratio of government revenue to GNP in the base year (1972)

$g_o$ = ratio of government expenditure to potential output in the base year (1972)

The Cyclical Effect of the Budget is measured by:

Cyclical Effect of the Budget (C.E.B.) = (G-T) — C.N.B. where:

G = Government Expenditure

T = Government Revenue

**TABLE 9**
**Comparison of Actual and Budgeted Deficits**

| *Year ended March* | *(1)* *Deficit (−) before Borrowing as Estimated at time of Budget $m* | *(2)* *Actual* Deficit (−) before Borrowing $m* | *(3) = (2 − 1)* *Difference between Actual and Estimated Deficit $m* | *Difference as % of GNP* |
|---|---|---|---|---|
| 1963 | − 127.1 | − 146.9 | − 19.8 | −0.7 |
| 1964 | − 126.5 | − 125.6 | 0.9 | 0.0 |
| 1965 | − 141.7 | − 116.5 | 25.2 | 0.7 |
| 1966 | − 125.4 | − 128.4 | − 3.0 | −0.1 |
| 1967 | − 138.4 | − 149.6 | − 11.2 | −0.3 |
| 1968 | − 104.6 | − 109.8 | − 5.2 | −0.1 |
| 1969 | − 161.6 | − 109.0 | 52.6 | 1.2 |
| 1970 | − 135.9 | − 77.9 | 58.0 | 1.2 |
| 1971 | − 93.8 | − 80.9 | 12.9 | 0.2 |
| 1972 | − 61.5 | − 72.3 | − 10.8 | −0.2 |
| 1973 | − 213.0 | − 206.0 | 7.0 | 0.1 |
| 1974 | − 232.0 | − 241.7 | − 9.7 | −0.1 |
| 1975 | − 159.0 | − 390.4 | −231.4 | −2.4 |
| 1976 | − 767.0 | −1001.7 | −234.7 | −2.2 |
| 1977 | − 847.0 | − 506.1 | 340.9 | 2.7 |
| 1978 | − 382.0 | − 694.4 | −312.4 | −2.2** |
| 1979 | −1050.0 | −1445.9 | −395.9 | −2.5** |

* The figures prior to 1972 differ from those in Table 1 due to a reclassification of some of the items in Table 2 of the Budgets. Namely, miscellaneous receipts were not included in budget estimates prior to 1967 and subscriptions to the Asian Development Bank were reclassified in 1972.
** Estimate.

**TABLE 10**
**Government Expenditure: Automatic and Discretionary Components**

| *$ million* *Year ended March* | *Change in Government Expenditure* | | | | *Change in Salaries and Wages* | | | |
|---|---|---|---|---|---|---|---|---|
| | *Total* | *Automatic* | *Discretionary* | *Both* | *Total* | *Automatic* | *Discretionary* | *Both* |
| 1961 | 94.0 | 17.4 | 76.0 | 0.7 | 12.5 | 13.0 | − 0.5 | 0.0 |
| 1962 | 58.3 | 21.5 | 36.0 | 0.9 | 12.3 | 9.0 | 3.1 | 0.1 |
| 1963 | 12.3 | 22.4 | − 9.9 | − 0.2 | 12.8 | 7.3 | 5.3 | 0.2 |
| 1964 | 48.7 | 20.3 | 27.7 | 0.7 | 17.1 | 7.2 | 9.5 | 0.3 |
| 1965 | 81.9 | 50.7 | 29.4 | 1.8 | 36.2 | 25.1 | 10.1 | 1.0 |
| 1966 | 97.9 | 29.1 | 66.8 | 2.0 | 16.4 | 8.0 | 8.1 | 0.2 |
| 1967 | 90.3 | 36.9 | 51.6 | 1.8 | 28.5 | 12.9 | 14.9 | 0.6 |
| 1968 | 15.1 | 78.5 | − 59.7 | − 3.6 | 33.2 | 24.1 | 8.5 | 0.6 |
| 1969 | 28.3 | 47.6 | − 18.3 | − 1.0 | 20.7 | 10.3 | 10.2 | 0.3 |
| 1970 | 103.6 | 71.1 | 30.8 | 1.7 | 40.2 | 34.0 | 5.8 | 0.5 |
| 1971 | 284.4 | 155.6 | 117.8 | 11.0 | 101.5 | 85.3 | 13.5 | 2.7 |
| 1972 | 264.0 | 208.7 | 48.3 | 7.0 | 129.5 | 101.2 | 23.8 | 4.6 |
| 1973 | 356.9 | 120.4 | 222.4 | 14.1 | 58.7 | 41.7 | 15.9 | 1.0 |
| 1974 | 413.0 | 239.8 | 156.7 | 16.6 | 148.9 | 102.5 | 40.5 | 5.8 |
| 1975 | 777.5 | 329.3 | 400.2 | 48.0 | 160.0 | 118.8 | 36.2 | 5.0 |
| 1976 | 974.5 | 485.2 | 426.2 | 63.1 | 188.7 | 108.8 | 72.2 | 7.7 |
| 1977 | 117.8 | 624.8 | −435.6 | −71.3 | 138.8 | 113.0 | 23.7 | 2.2 |
| 1978 | 1033.6 | 705.2 | 285.6 | 42.8 | 281.1 | 240.5 | 34.5 | 6.1 |
| 1979 | 1142.5 | 784.2 | 317.7 | 40.6 | 405.0 | 325.8 | 66.0 | 13.2 |

**TABLE 10** (continued)

| *$ million* *Year ended March* | *Change in Monetary Benefits* | | | | *Change in Other Government Expenditure* | | | |
|---|---|---|---|---|---|---|---|---|
| | *Total* | *Automatic* | *Discretionary* | *Both* | *Total* | *Automatic* | *Discretionary* | *Both* |
| 1961 | 14.9 | 1.7 | 13.1 | 0.1 | 66.7 | 2.7 | 63.4 | 0.6 |
| 1962 | 7.0 | 4.7 | 2.3 | 0.1 | 39.0 | 7.8 | 30.5 | 0.7 |
| 1963 | − 4.0 | 5.5 | − 9.3 | − 0.2 | 3.5 | 9.6 | − 5.9 | − 0.1 |
| 1964 | 14.9 | 4.6 | 10.1 | 0.2 | 16.7 | 8.5 | 8.0 | 0.2 |
| 1965 | 2.4 | 9.1 | − 6.4 | − 0.3 | 43.3 | 16.5 | 25.8 | 1.0 |
| 1966 | 9.3 | 7.1 | 2.1 | 0.1 | 72.2 | 14.0 | 56.6 | 1.7 |
| 1967 | 9.4 | 7.5 | 1.8 | 0.1 | 52.4 | 16.4 | 34.9 | 1.1 |
| 1968 | 17.7 | 17.9 | − 0.2 | − 0.0 | − 35.8 | 36.5 | − 68.0 | − 4.3 |
| 1969 | 7.6 | 13.0 | − 5.2 | − 0.2 | 0.0 | 24.2 | − 23.2 | − 1.0 |
| 1970 | 23.1 | 11.2 | 11.3 | 0.5 | 40.2 | 25.9 | 13.7 | 0.6 |
| 1971 | 25.6 | 23.5 | 2.0 | 0.2 | 157.3 | 46.8 | 102.4 | 8.1 |
| 1972 | 42.3 | 34.0 | 7.6 | 0.7 | 92.2 | 73.6 | 16.9 | 1.7 |
| 1973 | 122.6 | 25.6 | 91.2 | 5.8 | 175.6 | 53.0 | 115.3 | 7.3 |
| 1974 | 116.4 | 43.6 | 66.7 | 6.2 | 147.7 | 93.7 | 49.5 | 4.6 |
| 1975 | 86.7 | 73.3 | 12.0 | 1.4 | 530.8 | 137.2 | 352.0 | 41.6 |
| 1976 | 165.2 | 111.5 | 46.5 | 7.3 | 620.6 | 264.9 | 307.6 | 48.2 |
| 1977 | 166.8 | 141.5 | 21.8 | 3.5 | −187.8 | 370.3 | −481.1 | −77.0 |
| 1978 | 415.2 | 154.6 | 227.4 | 33.2 | 337.3 | 310.1 | 23.7 | 3.5 |
| 1979 | 291.7 | 189.9 | 91.8 | 10.0 | 445.8 | 268.5 | 159.9 | 17.4 |

## TABLE 11
### Budget Data: Automatic and Discretionary Components

| Year ended March | Change in Expenditure | | Change in Revenue | | Change in Deficit before Borrowing | | | Change in Deficit as % of GNP | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Discretionary $m | Automatic $m | Discretionary $m | Automatic $m | Discretionary $m | Automatic $m | Total $m | Discretionary | Automatic | Total |
| 1962 | 36.8 | 21.5 | 17.2 | 39.0 | 19.6 | − 17.5 | 2.1 | 0.7 | −0.6 | 0.1 |
| 1963 | − 10.0 | 22.4 | − 49.4 | 15.0 | 39.4 | 7.4 | 46.8 | 1.3 | 0.3 | 1.6 |
| 1964 | 28.3 | 20.3 | − 8.2 | 68.9 | 36.5 | − 48.6 | − 12.1 | 1.1 | −1.5 | −0.4 |
| 1965 | 31.2 | 50.7 | − 0.3 | 104.3 | 31.5 | − 53.6 | − 22.1 | 0.9 | −1.5 | −0.6 |
| 1966 | 68.9 | 29.1 | − 7.8 | 82.7 | 76.7 | − 53.6 | 23.1 | 2.0 | −1.4 | 0.6 |
| 1967 | 53.4 | 36.9 | 19.3 | 52.3 | 34.1 | − 15.4 | 18.7 | 0.9 | −0.4 | 0.5 |
| 1968 | − 63.4 | 78.5 | 32.5 | 6.9 | − 95.9 | 71.6 | − 24.3 | −2.3 | 1.7 | −0.6 |
| 1969 | − 19.3 | 47.6 | − 39.1 | 46.2 | 19.8 | 1.4 | 21.2 | 0.4 | 0.0 | 0.5 |
| 1970 | 32.5 | 71.1 | − 34.2 | 197.8 | 66.7 | −126.7 | − 60.0 | 1.4 | −2.6 | −1.2 |
| 1971 | 128.9 | 155.6 | 66.0 | 209.9 | 62.9 | − 54.3 | 8.6 | 1.1 | −1.0 | 0.2 |
| 1972 | 55.3 | 208.7 | − 25.3 | 298.1 | 80.6 | − 89.4 | − 8.8 | 1.2 | −1.4 | −0.1 |
| 1973 | 236.5 | 120.4 | −121.3 | 344.6 | 357.8 | −224.2 | 133.2 | 4.8 | −3.0 | 1.8 |
| 1974 | 173.2 | 239.8 | 5.4 | 372.8 | 167.8 | −133.0 | 34.8 | 1.9 | −1.5 | 0.4 |
| 1975 | 448.2 | 329.3 | 106.0* | 522.9 | 342.2 | −193.6 | 148.6 | 3.6 | −2.0 | 1.6 |
| 1976 | 489.4 | 485.2 | −182.0* | 545.8 | 671.4 | − 60.6 | 610.8 | 6.2 | −0.6 | 5.6 |
| 1977 | −506.9 | 624.8 | 52.2 | 561.8 | −559.1 | 63.0 | −496.1 | −4.4 | 0.5 | −3.9 |
| 1978 | 328.4 | 705.2 | − 4.2 | 848.8 | 332.6 | −143.6 | 189.0 | 2.4** | −1.0** | 1.4** |
| 1979 | 358.3 | 784.2 | −242.6 | 633.6 | 600.9 | 150.6 | 751.5 | 3.8** | 0.9** | 4.7** |

* These figures include an increase of $52m. in 1975 and decrease of $52m. in 1976 due to the compulsory savings scheme.
** Estimate.

## TABLE 12
### Changes in the Money Supply and Selected Liquid Assets (M3)

| Year Ended March | Change in Claims of Major Deposit Accepting Institutions | | | | Change in Total Money Supply* $m | Total Money Supply (M3) $m | Percentage Change in Money Supply |
|---|---|---|---|---|---|---|---|
| | Overseas Sector $m | Government $m | Private Sector $m | Other $m | | | |
| 1961 | | | | | | 1700.7 | |
| 1962 | − 58.8 | 29.6 | 46.1 | 17.6 | 29.8 | 1730.5 | 1.75 |
| 1963 | 34.8 | 56.6 | − 15.0 | 6.6 | 70.2 | 1800.7 | 4.06 |
| 1964 | 20.7 | 73.1 | 45.7 | − 0.2 | 143.7 | 1944.4 | 7.98 |
| 1965 | 0.0 | 80.2 | 59.1 | 1.7 | 158.7 | 2103.1 | 8.16 |
| 1966 | − 69.0 | 94.0 | 77.9 | 24.7 | 133.9 | 2237.0 | 6.37 |
| 1967 | − 62.7 | 100.5 | 42.3 | 20.9 | 112.0 | 2349.0 | 5.01 |
| 1968 | − 44.0 | 110.0 | 3.6 | 21.5 | 77.8 | 2426.8 | 3.31 |
| 1969 | 85.1 | 13.0 | 57.6 | 17.5 | 158.9 | 2585.7 | 6.55 |
| 1970 | 59.3 | 80.3 | 111.6 | 18.4 | 222.3 | 2808.0 | 8.60 |
| 1971 | 25.8 | 63.4 | 163.7 | 1.5 | 233.4 | 3041.4 | 8.31 |
| 1972 | 125.7 | 19.4 | 122.9 | − 3.6 | 240.6 | 3282.0 | 7.91 |
| 1973 | 213.1 | 183.6 | 175.4 | 56.5 | 610.1 | 3892.1 | 18.59 |
| 1974 | 133.3 | 265.6 | 520.3 | − 36.5 | 862.6 | 4754.7 | 22.16 |
| 1975 | −513.7 | 164.9 | 505.4 | 105.0 | 215.2 | 4969.9 | 4.53 |
| 1976 | −315.0 | 488.5 | 222.0 | 89.4 | 557.1 | 5527.0 | 11.21 |
| 1977 | −140.1 | 486.0 | 608.4 | 35.0 | 972.7 | 6499.7 | 17.60 |
| 1978 | − 47.4 | 291.7 | 684.8 | − 4.2 | 849.8 | 7349.5 | 13.07 |
| 1979 | 124.5 | 433.8 | 876.9 | 110.2 | 1461.1 | 8810.6 | 19.88 |

* Includes residual items.

**TABLE 13**
**Government Financing Transactions**

| $ million Year ended March | (1) Deficit Before Borrowing | Financed by: Domestic Borrowing from — (2) Non-Banks* | (3) Trading Banks | (4) Reserve Bank | (5) Net Overseas Borrowing & Investment | (6) Other Financial Transactions | (7) Cash Surplus (+)/ Deficit |
|---|---|---|---|---|---|---|---|
| 1961 | 79.1 | 88.4 | — | — | – 0.8 | — | 8.4 |
| 1962 | 81.2 | 32.9 | — | – 0.3 | 49.4 | — | 0.8 |
| 1963 | 127.1 | 107.3 | — | 4.8 | 32.8 | — | 17.4 |
| 1964 | 115.9 | 127.5 | — | – 27.8 | 19.0 | 2.0 | 4.8 |
| 1965 | 89.7 | 144.3 | — | – 39.3 | – 14.2 | 0.7 | 1.8 |
| 1966 | 115.2 | 62.5 | 15.0 | 15.5 | 22.8 | — | 0.6 |
| 1967 | 134.3 | 94.0 | – 11.8 | – 12.2 | 67.8 | — | 3.5 |
| 1968 | 110.5 | 73.2 | 16.6 | – 12.6 | 35.1 | — | 1.8 |
| 1969 | 134.7 | 143.8 | 2.6 | 0.7 | – 2.5 | — | 9.9 |
| 1970 | 75.8 | 107.8 | 2.2 | – 4.4 | – 17.8 | — | – 12.0 |
| 1971 | 80.6 | 93.6 | 6.1 | – 1.2 | – 2.9 | – 11.6 | 3.4 |
| 1972 | 72.3 | 59.1 | 69.0 | – 42.5 | – 16.3 | — | – 3.0 |
| 1973 | 206.0 | 250.2 | 185.7 | – 9.5 | – 119.5 | – 87.5 | 13.4 |
| 1974 | 241.7 | 239.6 | – 112.7 | 136.0 | – 14.2 | — | 7.0 |
| 1975 | 390.4 | 25.4 | – 52.3 | 166.8 | 246.1 | — | – 4.4 |
| 1976 | 1,001.7 | 266.0 | 261.0 | 245.9 | 287.1 | – 70.7 | – 12.4 |
| 1977 | 506.1 | 241.2 | – 119.2 | 256.0 | 129.8 | — | 1.7 |
| 1978 | 694.4 | 335.0 | 720.2** | – 470.8 | 265.8 | – 150.0 | 5.8 |
| 1979 | 1,445.9 | 795.7 | 101.3** | – 49.4 | 444.0 | 150.0 | – 4.3 |

* Includes government agencies' and departments' purchases of securities.
** Compensatory deposits placed with the trading banks by the Reserve Bank amounted to $487.0 million and $387.5 million in March 1978 and 1979 respectively. These deposits have a direct influence on trading bank holdings of government securities, and also affect the Reserve Bank's holdings.

Printed by BRYCE FRANCIS LTD., Wellington.