ESSAYS ON FISCAL POLICY

TAXATION REFORM

R.S. DEANE
B.D. WHITE

Reserve Bank of New Zealand
Wellington
ISSN 0110 523X

Research Paper No 34

November 1981

Copies of Research Papers are obtainable free of charge
on application to the Economic Department,
Reserve Bank of New Zealand P.O. Box 2498
Wellington

CONTENTS

Reflection on Fiscal Policy

R.S. Deane

Preface 5

1. Introduction 7
2. Some Facts of The Matter 7
3. The Information Gap 8
4. Monetarists or Keynesian 9
5. The Financing Requirement 11
6. Instruments and Objectives 12
7. Fine-Tuning or Stability? 14
8. An Assessment 16

Taxation: Principles, Concepts and Reform

B.D. White

1. Introduction 19
2. Objectives and Principles Of Taxation 19
3. Alternative Tax Bases:

   The Income Tax Base 20

   The Expenditure Tax Base 23
4. Tax Rate Structures 26
5. Conclusion 27

References 28

Appendix: Tables and Figures 29

PREFACE

This Research Paper consists of two essays addressed to a number of topical issues in the areas of fiscal policy and taxation reform in New Zealand. Although many of the previously published Research Papers reflect the relatively technical nature of much economic and econometric research, especially in the model building field, the Bank has also endeavoured to use the Papers as a vehicle for disseminating analysis and promoting discussion of various aspects of macroeconomic policy. The two studies in this present Paper fall into this latter category.

The first essay on fiscal policy initially summarises the results of earlier research in this area and then discusses the need for additional information if the analysis of fiscal policy is to be improved in the future. The paper goes on to discuss a number of analytical issues of relevance to the assessment of the performance of fiscal policy in New Zealand, including the significance of the various schools of theoretical thought (Keynesian, monetarist and the so called new classical schools). In an attempt to examine the inter-relationship of monetary and fiscal policy, the essay considers the problem of the appropriate way in which to finance the fiscal deficit before borrowing and the need to match the available macro-economic instruments with the ultimate objectives of economic policy. Some comments are then offered on the role for fine tuning vis-a-vis the case for more stability in the policy settings.

Although the paper acknowledges the considerable difficulties in arriving at a satisfactory mix of fiscal and monetary policies, especially given the availability of different theoretical approaches which suggest rather different macroeconomic management styles, it is suggested that there does appear to be both a theoretical and an empirical presumption in favour of less policy variability than New Zealand has experienced over the past decade. The paper advocates the case for pursuing medium term objectives in as consistent and phased a manner as external shocks permit; and so avoid major short term shifts in the direction of policy. Private sector adjustment, such as to the problems of external shocks, seems most likely to be assisted by a set of Government policies about which the private sector is well informed and is confident will be maintained.

The second essay in this Research Paper was prepared by Mr B.D. White and addresses the question of taxation reform. Mr White sets out in summary fashion some of the basic objectives and principles of importance with respect to the New Zealand taxation system. He then goes on to examine in broad terms the appropriateness of the present income tax base and the possibility of utilising more actively an expenditure tax base. There is some analysis of the relative advantages and disadvantages of different approaches to taxation together with a brief discussion of the possibilities for altering the tax rate structures.

The paper emphasises particularly the need to be clear about the fundamental objectives and principles which should underlie a sound tax system and the need to identify an appropriate tax base. It is suggested that an expenditure tax might have some advantages compared with an income tax and, moreover, that the structure of tax rates needs further examination to ensure that it meets the community's objectives with respect to not only redistribution of income but also incentive effects. The paper also elaborates the case in favour of indexing the tax system to allow for changes in the rate of inflation. Indeed, one of the most pressing arguments in favour of broader taxation reform is the distortions which have arisen under the present system as a result of inflation. As the Bank has pointed out elsewhere, this suggests particularly the need to introduce an appropriate form of inflation adjusted accounting and to alter the tax treatment of interest received and paid to allow for the inflation component in interest (which essentially represents a capital adjustment rather than an income or expenditure item).

The Bank has a number of other research projects in progress which should in time lead to the publication of Research Papers on such issues as the impact of external shocks on the New Zealand economy and the policy responses to these; the nature of wage inflation in New Zealand and an anlaysis of the related policy issues; and further work on the role of money and monetary policy within the New Zealand economy.

As is usual with Research Papers published by the Bank, the views expressed are those of the authors and do not necessarily represent those of the Bank.

November 1981. R.S. Deane.

REFLECTIONS ON FISCAL POLICY

— R.S. Deane[1] —

INTRODUCTION

This paper discusses a number of issues relating to the role of fiscal policy in macroeconomic demand management. The choice of this topic, with its emphasis on the stabilisation aspects of fiscal policy, reflects a view that if New Zealand is to achieve more satisfactory rates of economic growth subject to what has proven to be a persistent external constraint, then the major contribution policymakers can make to this aim would be to achieve an improved mix of macroeconomic policies in the monetary, fiscal and exchange rate areas, as well as easing protection, reducing subsidies, and generally moderating market rigidities.

The choice of issues is necessarily limited by time and space considerations. The paper first discusses some of the facts of the matter and then, with the Danks Report[2] and the open Government debate in mind, examines the absence of facts which could be, and should be, made available by the authorities. Fiscal policy, like other areas of economic policy, has its share of measurement problems and these are touched upon in this section of the paper.

With this empirical background in mind, the paper then addresses several more fundamental conceptual issues. The recent visit of Friedman to New Zealand reminded us that the rest of the world worries about monetarism, and for this reason it seems useful to say a little about the relevance of the monetarist versus Keynesian debate to the New Zealand situation. Because the linkage between monetary and fiscal policy arises partly because of the need to finance the budget deficit before borrowing, the paper then goes on to discuss the broader policy implications of this financing requirement. This leads to a discussion of the need to match policy instruments to economic objectives. This topic is in turn related to the question of whether macroeconomic policies should be directed towards short term objectives, leading to a case for fine tuning, or whether it is only possible to pursue objectives with a medium to longer term horizon in mind.

If the stabilisation role of fiscal policy is to be better understood, there is a need to have available comprehensive basic data; to draw upon appropriate economic theory; to use sound economic analysis; and to benefit from the lessons of history. The following sections of the paper address some of these matters.[3]

SOME FACTS OF THE MATTER

By way of establishing some empirical background for the later discussion of the analytical issues, it may be useful to summarise the salient features of the evidence which has emerged from previous studies on fiscal policy.[4]

1. Surprising as it may seem to those who concentrate attention upon conventional measures of the budget deficit, the net effect of Government budget transactions in all but six of the past twenty one 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.

2. Until 1974/75, the adjusted deficit before borrowing exhibited remarkably small fluctuations, tending to be a relatively low percentage of GNP over a lengthy period. The net withdrawals of funds by fiscal means, as reflected in the adjusted internal balance, resulted primarily from involuntary Government domestic borrowing.

3. 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.

4. 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 an expansionary phase to help get the economy moving despite the persistence of the foreign deficit and a high inflation rate. This stance was moderated in the next two years although as a proportion of GDP the deficit was on a higher plateau than in earlier years. The current year, 1981/82, is witnessing another expansionary phase in fiscal policy which has become typical of election years.

5. As would be expected, these swings in the budget outcome were accompanied by sizeable fluctuations in growth rates of total Government expenditure and revenue, and also in associated fluctuations in the growth rates of the monetary and credit aggregates.

6. As a result of widespread explicit or implicit indexation arrangements with respect to substantial components of both expenditure and revenue, especially Government salaries and wages, social

---

1 This paper was prepared as background material for an address to the Annual Residential Conference of the New Zealand Association of Economists, Dunedin, August 1981. Dr Deane is Chief Economist of the Reserve Bank of New Zealand. The views expressed in this paper are his own and do not purport to represent those of the Bank. The assistance of D. Grindell and M. Swinburne in preparing the tables and model simulation results is gratefully acknowledged.

2 *Towards Open Government*, Report of the Committee on Official Information (the Danks Report), Government Printer, Wellington, 1981.

3 However, the paper does not address broader issues related to allocation and distribution, such as public/private sector efficiency, incentive/disincentive effects of the taxation system, relative size of the Government sector, etc.

4 See for example R.A. Buckle and S.L. Snively, *The Budget Impact on Aggregate Demand and the Money Supply*, Discussion Paper No. 24, New Zealand Institute of Economic Research, Wellington, 1979; R.S. Deane and R.G. Smith, *The Stabilisation Role of Fiscal Policy*, New Zealand Planning Council, Planning Paper No. 5, Wellington, April 1980; and a derivative of the latter, The Principles and Practice of Fiscal Policy, R.B.N.Z. *Bulletin*, Vol. 43, No. 10, November, 1980.

welfare benefits and taxation, large elements of Government activity now assumes an automatic character. In practice, it has turned out at times that an unwillingness to depart from these arrangements has left the scope for discretionary fiscal policy adjustments somewhat limited.[5]

7. Econometric work in the fiscal area[6] has revealed some lengthy lags in the process of economic adjustment, with the multipliers for Government expenditure 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.

8. When there is a significant shift in the stance of fiscal policy, say towards an expansionary phase, the leakage from the system by way of imports has been shown by econometric work to be particularly strong, and there are 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 from captive institutions.

9. Indeed, model simulations involving continuous additional injections of Government expenditure show that after a lengthy period (say five years) real GNP may stabilise at a consistently higher level, partly because the withdrawal of funds through the overseas sector can grow to exceed the net Government injection.

10. The dominance of external events in explaining both domestic economic growth and the net outcome of fiscal transactions means that it is not easy to disentangle the effects of the budget on the domestic economy and vice versa. There is certainly significant evidence that changes in fiscal policy have at times been inconsistent with the stabilisation objective, i.e. they have been pro rather than counter cyclical, but different measures of fiscal impact and different time periods tend to tell rather different stories.

11. Some studies have suggested that the stance of fiscal policy has too often been altered in response to an over-reaction in some immediately preceding period, and this consideration taken together with the long and variable lags involved, raises some presumption in favour of less variability in the stance of fiscal policy with more attention being paid to medium term rather than short term objectives.[7] Indeed, the multiplier effects are so long that the impact of a fiscal change can easily span more than one cyclical period and, moreover, the multipliers differ significantly according to the phase of the cycle in which the change occurs. To complicate matters further the multiplier effects on both GNP and the balance of payments can be strong and of differing direction; a consideration which is particularly important since the external accounts are often the major constraint on macroeconomic policy in New Zealand.

12. Swings in fiscal policy have invariably contributed to co-related but lagged swings in the major monetary and credit aggregates. Given the reluctance of Governments in various periods to use interest rate policy actively to promote appropriate financing of fiscal deficits, the swings in the money supply have sometimes been severe. An adherence to a pegged exchange rate has at times added to these difficulties, as has also the ready access of the Government and other quasi-Government agencies (including importantly the marketing organisations) to central bank finance.

THE INFORMATION GAP

A range of studies[8] has now made clear the inadequacy of the conventional budget document as a vehicle for promoting an improved understanding of the role of fiscal policy, either as it has operated in the past or as it is intended to operate in the future. The budget statement says remarkably little, at least in numerical terms, about the assumptions for movements in economic activity which underpin the fiscal policy stance. No comprehensive set of forecasts is presented and no information is provided about the manner in which the deficit before borrowing is expected to be financed. Accordingly, the monetary implications of the budget are not spelt out, to say nothing of the expected impact of the budget on the real economy, inflation, employment, and the balance of payments. This is in contrast to the practice now adopted in many western countries where official forecasts are made available and are widely debated.

It would not seem to be difficult for the Government to remedy at least some of these deficiencies. Both Treasury and the Reserve Bank prepare comprehensive sets of forecasts. Although there would be complications in publishing these in full, a summary of the major aggregates could perhaps usefully be released. A brief analysis of the public accounts is prepared monthly, although information is only released quarterly and then with a significant time lag. It would be a relatively straightforward matter to spell out the anticipated monetary implications of the budget, at least in broad terms, since this sort of analysis is carried out on a regular basis within the official sector already.

It must be acknowledged that there are some measurement difficulties involved in fiscal policy indicators, particularly where there is a desire to use only one or two simple indicators as the primary measures of fiscal impact. The influence of the budget on the economy can only be satisfactorily described within the context of a well specified, comprehensive model of the economy as a whole, a process which obviously has its limitations in the public arena. Presentation of various different measures of the budget deficit, for example, may tend to confuse rather than illuminate.

Nevertheless, there does seem to be a compelling case

5 Although the split between 'automatic' and 'discretionary' elements in the budget is a matter of some interest in its own right, it is not an issue considered in this paper partly because of data problems and partly because it has been discussed elsewhere (see R.S. Deane and R.G. Smith, op cit).

6 See particularly R.S. Deane (ed.), *A New Zealand Model: Structure, Policy Uses and Some Simulation Results*, R.B.N.Z. Research Paper No. 8, Wellington, November, 1972 and Penny Joseph, *Multiplier Analysis of Model VIII*, in R.B.N.Z. Research Paper No. 28, Wellington, December, 1978.

7 In New Zealand the case for less variability in the stance of fiscal policy has been advocated in Deane and Smith, op cit, and G.H.T. Morgan and E. Haywood, *The External Constraint and Economic Policy: The Case of N.Z.*, R.B.N.Z. Discussion Paper No. G77/2, 1977.

8 Apart from those already cited, see M.J. Pope and D. Grindell, *New Quarterly Data for Stabilisation Purposes*, R.B.N.Z. Research Paper No. 15, December, 1974, and M.J. Pope, The Conceptual Basis and Interpretation of Data for Stabilisation Purposes, *N.Z. Economic Papers*, Vol. 5, 1971.

for modifying the currently published budget data in such a way as to separate from the conventional deficit before borrowing (Budget Table 2 basis) those transactions which do not immediately impinge upon the private sector (e.g. overseas receipts and payments) and to identify different classes of financing transactions, some of which represent a return flow of funds to the Government from the private sector while others do not directly affect the private sector in the short run (e.g. borrowing from the central bank or overseas). A comparison of several illustrative budget indicators is given in table 1, from which it can be seen that different statistical measures yield potentially different interpretations.

Despite the well known deficiencies of single indicators such as these, there appears to be a public need for some simple measures. This being the case, it is suggested that a series of improvements could be effected with respect to the presently published material, including the following:

- The budget data be published in an adjusted form to distinguish between transactions with the private sector, the overseas sector, and the central bank; with the adjustments covering expenditure, revenue, borrowing, and loan repayments.

- Financing transactions should be published in more detail, encompassing changes in gross financial assets and liabilities and 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.

- The annual budget 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 numerical picture were sketched in broad terms.

- With this in mind, it would be necessary and useful to express the budget aggregates in both real and nominal terms.

MONETARISTS OR KEYNESIANS?

In assessing the numbers underlying budgetary strategy, and then examining the analytical underpinnings of fiscal policy in New Zealand, it may be useful to explore briefly the relevance of the debate between monetarists and Keynesians over the respective roles of fiscal and monetary policy.[9]

At the risk of taking some liberties with a simple classification system, monetarists can be loosely described as believing in all or some of the following propositions: there exists a reasonably stable demand for money function; there is a short run trade off between inflation and unemployment which seems to disappear in the long run; that inflation and balance of payments deficits are primarily monetary phenomena; so that a restrictive fiscal policy without a reduction in the rate of monetary expansion cannot reduce the rate of inflation; that short run fine-tuning by either monetary or fiscal policy, and direct wage and price controls, are doomed to failure; and that policy should be directed to the achievements of some rules or targets, aimed at some monetary aggregate rather than the level of interest rates which should be free to fluctuate like any other prices.

On the other hand, Keynesians generally claim that monetary and fiscal policies have a significant and sustained effect on output and employment through their influence upon aggregate demand; that some degree of fine-tuning is possible and indeed necessary to ensure the maximum level of employment; that, partly because of market rigidities, it may be necessary to resort to such devices as incomes policies to restrain the rate of inflation; and admit that these may induce a mis-allocation of resources but that this is not such a severe price to pay as the large scale unemployment which may result from the vigorous application of monetarist type policies. Keynesians are less convinced than monetarists about the flexibility of prices in free markets and worry about the need to get some agreement within society about a fair and equitable split up of the national product. This group also criticises theoretical inadequacies in the monetarist position, including vaguely specified transmission mechanisms and too much reliance on reduced form small models. The typical Keynesian type econometric model tends to be a larger more disaggregated system based on the national accounts framework but often with more emphasis on the demand/expenditure side than on longer term supply/structural considerations. Earlier Keynesian models frequently had weak monetary sectors, or inadequate money/activity linkages, although these defects were eased in the second generation versions.

On the theoretical side, the so-called new classical economists have gone some way towards rescuing the monetarist position. On the basis of the natural rate hypothesis, they argue that the relationship between real magnitudes and their natural levels depends only on unanticipated inflation. Thus, unless changes in monetary policy cause actual inflation to deviate from expected inflation, there will be no effect on the real economy. Since the rational expectations hypothesis, which lies at the core of this theoretical approach, assumes that the private sector is very efficient at collecting and using all the relevant information in forming their expectations, it is argued that systematic and known economic policy can not affect real output, employment, or inflation. It is assumed that economic agents not only understand the implications of policy but also anticipate them because information is processed efficiently in all markets. If no surprises are possible, systematic fiscal and monetary policies will be rendered ineffective. It is also assumed that knowledge exists on the feedback from the economy to policy itself, which suggests the need to withhold this information from the public in some way if monetary policy is to be useful. The possibility of doing this is considered slight since the public will soon see how policy reacts to the economy. It is argued that because macroeconometric models only contain true estimates of historical structural parameters, the effects of new changes in policy are not captured. This dependence of model parameters on policy instruments rules out the use of large scale models to analyse the impact of policy.

The policy implications of this approach are that policymakers can not change the unemployment rate even in the short run (a view which is more extreme than that of the monetarists). Since anticipated monetary policy has

9 For a quick update on this debate see D. Laidler, Monetarism: An Interpretation and An Assessment; J. Tobin, The Monetarist Counter-Revolution Today; and the comments by R.C.O. Matthews, J.E. Meade, and J. Tobin, all in *The Economic Journal*, Vol. 91, No. 361, March, 1981, pp. 1-57. See also the articles in the sections 'The Monetarist Contribution to Macroeconomics' and 'Monetary Theory: Implications for Monetary Policy' in *The American Economic Review*, Papers and Proceedings, Vol. 71, No. 2, May, 1981, pp. 134-149 and 246-267. Pages 259-267 deal with the DRI model simulations which are referred to shortly.

no systematic effects upon either the level of output or velocity, the full impact falls on prices. If the monetary authorities were publicly committed to a lower rate of growth of the monetary aggregates, inflation would be reduced rapidly without undue effects upon output and unemployment. The school believes in rapid adjustment through continuous and efficient market clearing.

These views have been criticised as being underdeveloped on the financial side, again neglect to describe the monetary transmission process in sufficient depth, assume a single simple monetary variable directly controllable by the authorities, do not relate it explicitly to instruments of monetary control, Government budgets, or financial institutions and markets, and fail to account for the observed increase in monopolistic tendencies in some markets and the rise in distributional conflict in general.

Moreover, recent research with the large scale DRI quarterly model of the U.S. economy raised doubts about the new classical approach by assuming that the new Federal Reserve initiatives of October 1979 were motivated by rational expectations (on the grounds that the moves were completely unanticipated). At least this particular demonstration suggested considerable robustness for large scale models with respect to rational expectation type criticisms; argued that it is implausible to assume that economic agents always perceive and use the correct information in forming expectations; claimed that continuous equilibria do not really seem possible; pointed out that while some markets may be near perfect (e.g. financial markets) others are much less so, such as labour markets where fixed term contracts make for sticky responses; and questioned whether convergence to rational expectations equilibria may be much slower than the theory assumes, especially if policy and structural changes occur so frequently that economic agents may incorporate these inadequately in their reactions.

Turning to the New Zealand context, Figures 1 and 2 show the disconcertingly different responses which may be obtained by the use of several different theoretical constructs within the broad framework of the Reserve Bank's Core model. These experiments, drawn from work by G.H. Spencer and K.G. Duggan,[9a] involved two basic approaches, one Keynesian and the other new classical, and two 'mixed' variants, with the comparative multipliers being derived from model simulations of a 1 per cent increase in real non-wage Government expenditure. Without delving into the detailed empirical representation of the theoretical approaches, the results highlight the essential differences between the various schools of thought. The Government expenditure shock produces relatively significant real output and insignificant inflation responses under the Keynesian approach, whereas using the new classical version provides very small output variations but a relatively more significant inflation impact.

To sum up, the different theories can be modelled within the same broad framework and produce the results their initiators claim for them. But one is still left with the dilemma of which theory to choose; or which mixed variant to compromise on.

The question is, where does all this leave monetary and fiscal policy in New Zealand?

First, at least as far as practical policymaking is concerned, the new classical economics appears to have made little impact. In recent years both fiscal and monetary policy, at both an aggregate and a detailed level, have been directed from time to time towards the maintenance of real output with the dominant concern being the economically, politically and socially perceived need to avoid further rises in unemployment and excessive difficulties for domestic firms. In other words, there has been a belief that Government can have an influence upon the level of unemployment by general macro stimulus and specific assistance measures directed towards the creation of jobs. On the inflation front, there has been no willingness to experiment with a tough monetarist policy, or indeed any monetarist policy at all. To the extent that ideas could claim to have been systematically worked through and applied in practice, the short sharp monetarist shock appears to have been rejected on the grounds that the short run unemployment cost would be too high, the policy may not work in any case because of the downwards inflexibility of wages and prices (or at least the rates of increase in these), that the adjustment process is longer than monetarists claim, that the Government may not be prepared to adhere to a publicly announced monetary target, and that this unwillingness would impair the viability of the whole policy approach.

As far as the older version of monetarism is concerned, much the same sort of objections seem to have been applied. But whether these can excuse the extreme variability in the year by year growth rates of the monetary aggregates, a variability which has been contributed to in a substantial way also by fiscal policy, seems to be quite another matter. The least extreme form of monetarism, and one which has been suggested by the Reserve Bank from time to time, is probably that which involves:

(a) growth rates for the major monetary aggregates a little below the rate of inflation, with an endeavour being made,

(b) to hold these within a reasonable band, say two or three percentage points either side of the usually unannounced target, and

(c) the pursuit of a secular downward trend in these monetary growth rates in order to reduce gradually the rate of inflation but at the same time minimising the impact on the real economy.

However, the New Zealand performance has been inadequate even by the standards of this modest criterion. The money supply (M1) when measured in real or nominal terms has fluctuated sharply from year to year, as table 2 shows.

An examination of the movements in other aggregates such as the more broadly defined liquid assets (M3) and total domestic credit (which includes both Government and private sector components) tell a similar story. The contribution of fiscal policy to these fluctuations can be assessed partly by a study of the sharp swings in the various indicators of budgetary policy, as summarised in one form in the claims of the M3 financial institutions on the Government sector, which is an important component of the liquid assets series (table 3).

The apparent absence of any close attention to either the monetarist philosophy or the new classical economics implies that the intellectual framework adopted by macroeconomic policymakers within New Zealand may be Keynesian in character. There are some decision

9a G.H. Spencer & K.G. Duggan, *On the Structural Sensitivity of Short Term Output – Inflation Tradeoffs*, R.B.N.Z. Discussion Paper G81/23, September, 1981.

makers who believe firmly in the capacity of fine-tuning to influence output and employment levels and, despite the now impressive body of overseas theoretical work and practical experience which questions the usefulness of wage and price controls, there is an important element of thinking which feels these may be useful in helping to resolve New Zealand's inflation difficulties, a view which gains some support from local research.[10]

Moreover, public statements on fiscal policy have at times implied that there is an expectation of relatively quick effects on the private sector although much of the research work in the area has emphasised the long lengths of the lags involved. Reverting then to the original abridged description of the major alternative theoretical approaches to fiscal and monetary policy, it is probably fair to say that the New Zealand version bears the closest resemblance to a Keynesian style approach.

Nevertheless, given the Government's propensity to borrow abroad or from the banking system to finance its deficits, and given the unwillingness on many occasions to pay market rates of interest on Government debt, one is left with some major gaps in the analysis. For example, for how long can we go on accommodating inflation by permissive rates of growth of the money supply? Should we be concerned about the occasional cyclical booms in credit expansion which we experience every few years, and the implications of these for internal and external stability? Do we not believe that moderation of inflation is a prerequisite to the resumption of a reasonable rate of economic growth? Given the persistence and growth of unemployment, for how long do we continue to believe that fiscal policy can have a meaningful and lasting impact in this area? These questions will influence some of the later analysis of this paper.

THE FINANCING REQUIREMENT[11]

Although the distinction between monetarists and Keynesians is a convenient device for raising some of these issues, it must be acknowledged that the debate between monetarists and Keynesians is in a sense, as Bent Hansen[12] observed, partly a sham dispute. Since fiscal deficits have to be ultimately financed by monetary type actions, both fiscal and monetary policies must have some automatic (endogenous) effects. As Hansen demonstrated, even apparently negative budget effects and positive money supply effects may be consistent with a positive fiscal policy and a weak monetary policy. The crucial linkage is the financing requirement and the way in which it is met.

Since the need to finance the deficit before borrowing rarely gets referred to in the Budget document or indeed seldom attracts much attention in popular discussion, despite the fact that it may comprise over 20 per cent of total Government expenditure, it seems appropriate to consider further the four major forms which deficit financing may take:

1 Borrowing from the Reserve Bank or running down cash balances at the Reserve Bank, which is the classic case of printing money. There is no offset to the impact of the deficit before borrowing, so its effect 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.

2 Borrowing from the trading banks, which involves the exchange of cash balances held by the banks at the Reserve Bank (partly acquired as a result of the budget deficit before borrowing) for government securities or treasury bills. Although 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. As with borrowing from the central bank, in New Zealand the effect is essentially to monetise the budget deficit and both first and second round money/credit effects can be expected to accrue. These can be moderated by a tightening of the banking system's margin of free reserves or by public debt sales and open market operations designed to sell securities to the non-bank sector.

3 Overseas borrowing has often been an important source of funds for Government, 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. The monetary implications of financing a fiscal deficit by this means is initially much the same as selling securities to the central bank although the process has the virtue of increasing the country's overseas assets, at least for a period. Again, there is a direct monetisation of the budget deficit.

4 The only way to avoid this monetisation process is by borrowing from the non-bank private sector which reduces both the money supply and the reserve assets of the banking system. The public is encouraged to hold government securities instead of money, or instead of private sector financial assets. The potential for secondary credit expansion is thus reduced, although the ultimate effectiveness of the policy depends on the liquidity of the bonds sold, the interest rate and crowding out effects which may result, and the persistence with which the Government pursues the policy. This approach is likely to be the least inflationary method of financing the deficit but is, generally speaking, dependent for its success

10. The reference to direct controls imposed by the Government should be distinguished from a 'social contract' where the various parties agree voluntarily to what amounts to an incomes policy. New Zealand research which suggests a permanent effect of income policies on the level of wages, at least in the mid-1970's, includes: R.A. Buckle, *The Inflation/Output and Employment Trade-Off: Some Theoretical Considerations and Empirical Results for New Zealand*, Paper presented to the New Zealand Association of Economists Conference, Palmerston North, August 1980; K.G. Duggan, *Incomes Policy and Wage Inflation in New Zealand*, Unpublished M.Soc.Sc. dissertation, University of Waikato, 1980; W.R. Hughes and B.D.J. Silverstone, 'An Assessment of Incomes Policy in New Zealand: A Time Series Approach', *Applied Economics*, Vol. 12, No. 4, pp. 467-478, December, 1980, although note that the same work suggests that the concurrent price freeze was ineffective in slowing price inflation. But, as Grimes points out, the three studies examined award rather than prevailing wage rates and it is possible that some of the upwards drift of the latter over the former could be explained by the presence of controls over award rates (see A. Grimes, *Wage Formation in New Zealand*, R.B.N.Z. Discussion Paper G81/9, June, 1981).

11 Government financing transactions for New Zealand are summarised in table 4. For a fuller discussion of the general topic see J.R. Hewson, The Financing of Budget Deficits, in *The Significance of the Budget Deficit*, University of N.S.W., C.A.E.R. Paper No. 7, June, 1979, pp. 60-103.

12. B. Hansen, On the Effects of Fiscal and Monetary Policy: A Taxonomic Discussion, *The American Economic Review*, Vol. 63, No. 4, September, 1973, pp. 546-571.

on the Government's willingness to pay market rates of interest. Ratio increases over the non-banks can be used in lieu of an interest rate policy, although this approach is illusory in the sense that interest rate effects will accrue from higher ratios and as well disintermediation problems may arise.

New Zealand's experience would suggest that it is extremely difficult, if not impossible, to regulate the growth of the money supply within reasonable bounds in the face of fluctuating and occasionally large fiscal deficits before borrowing in a situation where there is an unwillingness to finance those deficits by bond sales to the non-bank private domestic sector. Although much progress was made in removing interest rate controls in 1976/77, deregulating other aspects of the financial system, and moving to a meaningful public debt sales programme especially in 1978/79, there has been an unfortunate reluctance more recently to exploit the full potential of these moves.

Since this unwillingness usually arises from a concern to avoid pressures on interest rates, it becomes important to examine the degree of economic substance in this concern (as distinct from social and political considerations).

Aside from arguments about the broader role of interest rates in inflationary circumstances and the use of interest rate controls, which are well documented elsewhere,[13] the principal issue is that of crowding out: whether government deficit spending and the associated borrowing operations 'crowd out' private sector activity in either a real sense, as the additional Government claims over resources push up factor prices generally; or a financial sense, as higher interest rates on official bonds impair the financing of private investment. Although the popular view of monetarism, as conveyed by Friedman and many of his adherents, is that the public sector should be reduced in size, this argument is invariably based as much on the precepts of free enterprise and an assumption of bureaucratic inefficiency in the absence of market signals, as on the crowding out hypothesis. Indeed, Laidler insists that questions about public sector borrowing and the share of the public sector in national income are peripheral to the monetarist debate, other than to the extent that this shows that there are severe limits to the extent to which the Government's financing requirements can be met by money creation (Friedman would say the limit is zero).

In the case where real output is supply constrained, any new claim on resources, however financed, will obviously crowd out other uses. In the money constrained case, it is a monetary policy issue and if employable resources are available then Keynesians would argue that the deficit financed demands of the public sector could be accommodated by an expansion of the money supply (or a change in velocity). The matter is more complicated for an open economy with a pegged exchange rate, where foreign exchange itself may be a 'resource' in short supply. As far as interest rate effects on private sector activity are concerned, the New Zealand evidence suggests that the demand for loans is relatively interest inelastic and similarly investment equations do not indicate a major role for interest rates, the major explanatory variables being real output, company income and relative prices. Although the latter variable contains an interest rate term, the coefficients suggest an inelastic response.[14]

It is not easy to sustain a convincing crowding out argument in an economy such as New Zealand's at a time when there is substantial unemployment, widespread capacity under-utilisation, and nominal interest rates which in many cases are negative in real terms (especially after allowing for tax deductability of interest paid.)[15] On the other hand, given the investment projects in prospect for the 1980's, a rather different perspective on this issue may emerge as the decade progresses.

In the final analysis, the real argument is probably not one of crowding out, nor indeed one of the relative size of the public sector,[16] but rather whether the Government is carrying out its functions effectively and efficiently. There is no doubt plenty of scope for the application of some sound micro-economic analysis in this area.

INSTRUMENTS AND OBJECTIVES

If monetary and fiscal policies are as closely interwoven as this sort of analysis would suggest, it becomes important to weigh carefully the need to match instruments and objectives. The theory of economic policy suggests a number of basic principles:[17]

- if a range of economic objectives is to be pursued, there is a need for at least as many effective policy instruments as there are independent objectives;
- thus there is a need to establish priorities between objectives and to appreciate the way in which the gains from achieving one objective may be offset by sacrifices with respect to some other objective;

13 On the former, see the relevant articles in the R.B.N.Z. *Bulletin* for October, November and December 1979, May and October 1980, and January-February 1981, which deal with the effect of inflation on financial contracts, business accounts and the progressive income tax system; on the latter see, for example, the relevant chapters in R.S. Deane and P.W.E Nicholl (eds.), *Monetary Policy and the New Zealand Financial System*, R.B.N.Z., Wellington, 1979.

14 On the investment side, the latest published version of the Bank's model is set out in A. Grimes, *A Model of the New Zealand Labour Market*, R.B.N.Z. Research Paper No. 33, Wellington, July, 1981. On equations explaining the demand for credit, see G.H. Spencer, *Monetary Targets: A Comparison of Some Alternative Aggregates*, R.B.N.Z. Research Paper No. 30, Wellington, May, 1980.

15 R.L. Perry in his B.Com. (Hons.) thesis, *The Crowding Out of Private Investment by Government Fiscal Expenditure with Special Reference to New Zealand*, (University of Otago, Dunedin, 1980), concluded that crowding out may occur but its magnitude is likely to be small.

16 This paper refrains from comment on this matter since it was thoroughly debated in 1978 by the N.Z. Planning Council, M.J. Pope and others. Apart from the above analytical doubts about the applicability of the crowding out hypothesis to the current New Zealand situation, Pope demonstrated that it was not clear that the public sector had been taking an increasing share of *real* national resources since 1972/73, as claimed by the Planning Council and others. See M.J. Pope, *The Public Sector Overload – Is There Any?*, in N.Z. Institute of Economic Research Occasional Paper No. 5, Wellington, 1978. See also C. Gillion and M.J. O'Neil, *Trade, Income Shares, Migration and Public Expenditure*, R.B.N.Z. Research Paper No. 27, Wellington, November, 1978, who showed that although a higher Government share matters a lot for the allocation of output between the public and private sectors, it did not appear to matter much for overall real GDP growth; a conclusion which was in contrast to that of B.P. Philpott and N.D. Tho in *Structural Implications of Reduced Government Expenditure*, Project on Economic Planning, Internal Paper No. 21, Victoria University of Wellington, June, 1976, who found that higher Government spending was associated with a fall in real GDP because of a switch to the relatively lower productivity public sector. But note the assumption of full employment which would have been more appropriate to the mid-1970's than today. See also Table 6 in the present paper for some model simulation results involving reductions in both government spending and revenue. The multiplier effects are generally small.

17 The origins of this approach can be found in J. Tinbergen, *On the Theory of Economic Policy*, North Holland, Amsterdam, 1952 and Bent Hansen, *The Economic Theory of Fiscal Policy*, Allen and Unwin, London, 1958. A convenient summary was provided by W.E. Norton, *Some Principles of Economic Policy*, Reserve Bank of Australia, Occasional Paper No. 6, Sydney, March, 1973.

- the policy instruments must be effective, in the sense of being capable of exerting some meaningful influence on the objectives;
- moreover, the ultimate objectives must be independent, and compatible in the sense of being able to be achieved simultaneously;
- the number of effective instruments is likely to be small, and neglecting to use an effective instrument may be costly in terms of benefits foregone;
- since uncertainty about both the structure of the economy and the linkages between instruments and objectives constitutes an important constraint on economic policy, there is likely to be some temptation to use more than one instrument for the achievement of those objectives which are given the highest priority;
- this suggests a need to limit the number of objectives to those that really matter and to assign each effective instrument to that objective with respect to which it has the greatest comparative advantage.

Against the background of these principles, it is interesting to consider the way in which economic policy has been applied in New Zealand. At times in the past co-ordination of economic policy instruments seems to have been viewed as the need to direct all or most instruments at the one or two targets of the most immediate and greatest concern. The relative weights assigned to the various objectives, and indeed the rankings given to these aims, have varied significantly over even quite short time frames.

For example, in the wake of the 1977 domestic recession the major domestic policy instruments were directed at inducing an expansion of output and employment.[18] The inflation and balance of payments objectives, which had been the priority aims in 1976, received a lower ranking. By maintaining a fixed exchange rate in effect from August 1975 to June 1979, one major effective instrument remained unused. On the inflation front, there were some vestiges of wage and price controls, although an important body of economic analysis would classify these as ineffective policy instruments since direct controls appear to have little lasting impact in promoting stability of employment and prices, fail to tackle the basic cause of the difficulty (treating symptoms instead of causes), and may have adverse effects on real income because of the distortions and misallocations which arise. Of course, it has long been recognised that a shortage of effective policy instruments often gives rise to calls for a greater use of direct controls.

Given the statements which continued to be made during 1977 and 1978 about the need to resolve the balance of payments difficulties and to moderate inflation, it is interesting to reflect on whether or not the narrow focus of a deliberately limited range of effective instruments at that time was a conscious choice.

Perhaps the policy performance was more satisfactory in 1978/79, when a flexible exchange rate policy was introduced and directed explicitly at the balance of payments objective; monetary policy was firmed up with the intention of reducing the growth rates of the monetary aggregates (an intermediate target) presumably with the ultimate objective of reducing inflation in mind; a more moderate fiscal policy stance was associated with an expressed desire to maintain a relatively steady level of real economic activity; and a vigorous public debt and open market operations policy was pursued to permit some degree of independence for monetary and fiscal policy.

The only research work of any depth which appears to have been done in New Zealand on this question is that of Spencer and Grimes[19] who looked at the stability of some alternative policy rules using the Reserve Bank's Core model of the New Zealand economy to conduct a range of simulation experiments. Although they emphasised that their hypothetical assignments were not necessarily intended to represent realistic policymaking alternatives, it is worth noting that they found the most stable instrument/target configurations to be those involving the assignment of the fiscal instrument (Government expenditure) to the inflation objective, monetary policy (interest rates) to the real output objective, and the exchange rate to the balance of payments (although it was noted that exchange rate reactions needed to be small to preserve reasonable stability with respect to this latter assignment).

The essential points are these: if it is desired to pursue a range of economic objectives, at least as many effective policy instruments are required; the need for effectiveness generally rules out the use of direct controls other than perhaps in the short term; and if the lags in the adjustment process are indeed as long or as variable as most econometric work has suggested, then there is a need to adopt an assignment strategy and maintain it for a reasonable length of time if it is to have any chance of being effective.

Moreover, fiscal and monetary policies, and exchange rate policy for that matter, can only be regarded as effective instruments if they are independent instruments. There must also obviously be a willingness to use each of the instruments. In New Zealand, there are probably at least three hypothetical conditions which would be required to be met to achieve true instrument independence:

1 The Government would have to be prepared to finance fully its deficit before borrowing by non-bank domestic borrowing, i.e. the Government should not be able to borrow from the Reserve Bank, or otherwise it is not possible to separate Government liabilities from central bank liabilities in such a way as to ensure that reserve assets can be created only by the central bank.

2 The Reserve Bank should not lend to private sector customers, such as in the form of virtually open ended overdraft facilities for primary product marketing authorities; and

3 There should also conceptually be a market determined exchange rate to ensure equilibrium between external receipts and payments, since with a fixed rate (even if adjusted regularly) overseas exchange transactions become a potential source of cash for the banks.

What all this amounts to is the fundamental point that it is not possible to control simultaneously the money supply, interest rates and the exchange rate. If the money

18 The measures included the October 1977 mini-budget, the February 1978 easing of monetary policy, and the 1978 Budget itself.

19 G.H. Spencer and A. Grimes, On the Stability of Alternative Policy Rules Within a Model of the N.Z. Economy, in G.H. Spencer (ed.), *Experiments with a Core Model of the N.Z. Economy*, R.B.N.Z. Research Paper No. 29, Wellington, March, 1980.

supply is to be controlled, then interest rates must be freely determined by market forces to prevent disintermediation and the Government must pay market rates for its funds to facilitate full and efficient financing of the fiscal deficit (ratio financing being inefficient in the sense of also promoting disintermediation). Similarly, the exchange rate should ideally clear the exchange market; otherwise exchange transactions will inject or withdraw cash and similarly affect the money supply. To the extent that independent interest rate or exchange rate targets are pursued, the ability to control reserve assets and the money supply is impaired.

This line of analysis brings one back to the same sort of issue which dominates the monetarists versus Keynesians debate. Is it possible to fine-tune the instruments of economic policy, or is relative stability of instrument settings to be preferred if the ultimate objectives are to be achieved?

FINE-TUNING OR STABILITY?

Much of the analysis in this paper mitigates against the case for fine-tuning. The most extreme form of this case is that advocated by the monetarists and the new classical school, both of which claim that the lags in the economic processes may be so long and/or are usually so variable that it is not possible for policymakers to gauge accurately the effects of short term discretionary actions in a way which will promote stability and growth.

Activist demand management via compensatory counter-cyclical policies are themselves claimed to be a source of instability, being more likely to amplify than to dampen natural fluctuations, misallocating resources in the process, and interfering with the swift and convergent automatic market adjustment mechanisms. The second wave of monetarism has given these views an enhanced intellectual respectability by extending the analysis of free competitive markets (and the invisible hand) beyond micro-economic resource allocation to macro-economic optimality. Lucas, Sargent, Barro and others argue that market competition produces not just a tendency towards long run optimum situations but a continuous sequence of equilibria. Since demand management policies can only temporarily alter real economic outcomes, then under stable policies the economy will reach equilibrium employment on its own.

On the other hand, the typical modern day text book interpretation of the policy implications of the 'Keynesian' analytical approach involves counter-cyclical fiscal policies with, for instance, carefully timed changes in taxation rates and Government spending to promote recovery from recession. These views still have prominent and persuasive adherents, such as Meade and Tobin, both of whom have recently argued[20] that monetarists (old and new) remain to explain in their equilibrium terms the cyclical variability of real macroeconomic variables, the observed regularity of these fluctuations; why exogenous non-policy shocks do not always seem to induce the rapid adjustment monetarists claim (even in the absence of Keynesian type 'destabilising' policies); and how continuously clearing markets can be assumed in the face of so many known rigidities e.g. minimum wages established in obviously imperfect labour markets, and cost mark-up methods for setting selling prices in oligopolistic product markets. To overcome some of these problems, the Keynesians argue, Government intervention is required by such means as fiscal and incomes policies.

However, as an intriguing re-interpretation by Meltzer[21] has recently reminded us, there may be a 'vast gulf' between these views and Keynes' own theory and policy proposals. Keynes certainly believed in the need to increase the propensity to consume and promote investment to overcome a recession, but not so much by general stimulus to demand as by more attention to its distribution; and not simply by forcing and holding interest rates to low levels but rather by a planned stimulus to Government investment. While acknowledging that an increase in the stock of money could in principle raise the level of output, Keynes felt that unless there was a change in expected output the capital stock would not increase permanently and full employment could not thus be sustained.

On these grounds Meltzer argues that Keynes considered output could not be altered permanently by monetary policy and, moreover, that there is little evidence that Keynes favoured compensatory fiscal policy in today's sense. Instead, he favoured policies to stabilise investment, with a prominent role for the Government sector since it could, he argued, 'go in for a stable long term programme, (so that) serious fluctuations are enormously less likely to occur', thus moderating the impact of unpredictable private actions.

Although Keynes believed the economic system 'is not violently unstable', it tends to oscillate around an average level of employment below full employment. The latter is a 'rare and short lived occurence'. The solution was to ease the influence of volatile expectations on investment, particularly by means of an important role for Government, and thus stabilise aggregate demand as close as possible to full employment.

Meltzer concludes accordingly that Keynes 'favoured stable policies and pre-announced rules for cyclical tax changes and opposed policies that increased variability and uncertainty.'

In other words, not only do the monetarists, versions I and II, argue for stable settings of the policy instruments, but it is also possible to extract a not dissimilar interpretation from Keynes' own writings. No doubt the Tobins and the Meades of the economics profession would dispute this.

Given this impressive but conflicting body of theory, it may be of interest to reflect on the empirical evidence with respect to fine-tuning. The case against the vigorous use of discretionary changes in fiscal and monetary policies in New Zealand appears to rest on the following grounds:

(a) the lags between fiscal policy changes and their impact on the economy can be lengthy, spanning several years;

(b) these lags vary according to the nature and direction of the policy change and the point in the cycle when it takes place;

20 J. Tobin, op cit, and J.E. Meade, op cit (see footnote 9).

21 A.H. Meltzer, Keynes's General Theory: A Different Perspective, *Journal of Economic Literature*, Vol. XIX, March, 1981, pp. 34-64.

(c) although the money/nominal income lags appear to be shorter[22] they are still variable and both the demand for money functions and attempted reduced form equations are characterised by instability;[23]

(d) apart from this, little is known about the linkages between money and real income and prices;

(e) where several objectives are being pursued by the use of a variety of policy instruments, complex trade-offs are involved about which knowledge is limited, and even where research has been carried out knowledge of its implications may not be widespread;

(f) while these conclusions relate to ex post econometric model research, it must be recognised that the problems are compounded for policymakers working in an ex ante environment where considerable uncertainty surrounds not only the understanding of economic relationships but also forecasts of the prospective state of the nation.

On the other hand, model based analysis has illustrated the power of macro-economic policies to influence the target variables, and, in particular Spencer and Grimes[24] found that a number of combinations of simple instrument/objective policy feedback rules could outperform the 'no policy change' options in stabilising the economy as represented by the Bank's Core model.

But the evidence is not clear cut. For example, Morgan and Haywood[25] conducted model simulation experiments involving a constant average annual rate of increase for real Government (non-wage, non-transfer) expenditure. They concluded that discretionary Government expenditure policy, if it existed at all, had tended to be significantly pro-cyclical and furthermore if Government had followed a rather simplistic policy of constant real growth in expenditure, cycles in domestic activity would have been dampened significantly. They claimed that Government expenditure movements have generally been inconsistent with the domestic stabilisation objective, although they also acknowledged the difficulty of employing counter-cyclical fiscal policy once the economy had entered a recessionary phase which itself was more often than not associated with an unhealthy external position.

Smith[26] carried out some similar but extended policy simulations using a later version of the Bank's model and showed, for example, that although a constant growth rate of Government expenditure yielded a more stable level of aggregate expenditure for the economy and a reduced external deficit, it led to an increase in unemployment and little change in the rate of inflation. The most important point to emerge from the paper was probably the nature of the trade-offs involved between different economic objectives.

This point was also emphasised by Grimes[27] who found that in a variety of experiments (including an increase in Government expenditure and a tax wage bargain) in which the real exchange rate was held at its control level an increase in employment was only obtained subject to an increased current account deficit. A simultaneous improvement in employment and the external account was only possible in an experiment which coupled a real wage reduction with a devaluation of the real exchange rate. Any expansion of aggregate demand achieved through reduced taxation or increased Government spending aggravated inflation and led in turn to a more substantial nominal exchange rate devaluation and hence further price increases. Grimes conclusion was "that the Government must therefore choose between improving the employment situation still further (through fiscal or monetary policy) at the expense of greater inflation or refraining from stimulating aggregate demand and settling for the new employment equilibrium. Clearly there is no 'free lunch' to be had through the implementation of any single policy or mixture of policies."

The results of another simulation experiment involving a smoothed (essentially flat) path for real non-wage government expenditure between 1974(4) and 1979(3) are set out in table 7. This work differed from that of Morgan and Haywood, and Smith, in that it related to a later time period and was based on the Reserve Bank's new core model of the economy. The results were inconclusive. Smoother government spending eased some but not all of the peaks and troughs in real aggregate expenditure, yielded overall slightly more real output by the end of the simulation period, barely altered the average employment level, and adversely affected overseas reserves.

In turning from these hypothetical results to actual practice, interpretations of fiscal policy are especially complicated by its inter-relationship with a variable balance of payments situation (itself an important determinant of domestic activity), and the difficulty of distinguishing between the effect of the budget on the economy and the economy on the budget. Using an oversimplified comparison of extreme views to illustrate the point, it is possible to argue that the manipulations of fiscal policy in recent years have been successful in the sense that they were directed primarily to maintaining a tolerably stable domestic economy in real terms and indeed this was achieved. Average growth has been negligible but the fluctuations have been generally small. An alternative and perhaps broader interpretation could be that despite the fiscal adjustments, fluctuating budget deficits and money supply growth rates had little impact on the real variables, unemployment rose sharply, and the major impact was on the nominal magnitudes i.e. inflation.

Another study which attempted to assess actual trends in fiscal policy, the relationship of these to externally induced events, and the automatic/discretionary split-up of the Budget reached a set of conclusions which were touched on earlier in this paper.[28] Some important points emerged from this study of relevance to this section of the analysis.

22 D.E.A. Giles, R.G. Smith and B.D. Wilkinson, in Some Relationships Between Monetary Aggregates and Domestic Activity in N.Z., *New Zealand Economic Papers*, Vol. 12, 1978, pp. 76-95, found that the average length of lag from changes in the monetary aggregate to changes in nominal income were around two quarters for domestic credit and about four quarters for M1 and M3.

23 See tables 1 and 2 in G.H. Spencer, *Monetary Targets: A Comparison of Some Alternative Aggregates*, R.B.N.Z. Research Paper No. 30, Wellington, May, 1980, pages 25 and 26.

24 G.H. Spencer and A. Grimes, op cit.

25 G.H.T. Morgan and E. Haywood, op cit.

26 R.G. Smith, Alternative Policy Simulations with a New Zealand Model, in G.H. Spencer (ed.), *The Reserve Bank Econometric Model: A Revised Structure and Some Policy Simulations*, R.B.N.Z. Research Paper No. 28, Wellington, March, 1979

27 A. Grimes, *A Model of the New Zealand Labour Market*, R.B.N.Z. Research Paper No. 33, Wellington, July, 1981.

28 R.S. Deane and R.G. Smith, op cit.

For example, the state of the balance of payments has often been a dominant factor in determining the level of domestic economic activity. The external accounts have also had important feedback effects on the fiscal position. In periods when the balance of payments has been relatively favourable, domestic growth has picked up and increased withdrawals of funds from the private to the government sector have been induced, mainly as a consequence of additional borrowing associated with the domestic monetary expansion. But as the periods of higher growth progressed, the budget internal balance tended to decline, so that in some periods the fiscal position was easing while domestic growth persisted and the overseas current account slid into a larger deficit position.

On the other hand, slower growth periods have usually been associated with unfavourable external positions (sometimes after a lag) and the budgetary situation has often been correspondingly easier, at least in terms of the adjusted balance after borrowing.[29] In these cases, there were usually clearer counter-cyclical implications although such outcomes hinged mainly on tighter domestic monetary conditions as compared with the periods of more favourable external account positions.

All in all, there has been a heavy overlay of the external position on the economy and on both the state of fiscal policy and the room for manoeuvre with respect to this policy. In many years government spending has tended to be pro-cyclical, although there have been some notable exceptions. The revenue position is harder to sort out. Overall, the evidence suggests that the automatic stabilisation elements of fiscal policy have tended to work to reduce the budget deficit, although their net relationship to economic activity has been variable. The implication however is that the swings in policy have been largely of discretionary origin. In most cases, these swings were reversed or substantially modified within relatively short time spans, and probably before the multiplier effects peaked.

AN ASSESSMENT

It is clear that there are no simple answers to the question of how to achieve the most satisfactory mix of fiscal and monetary policies.

Different theories suggest different approaches and different outcomes; and different models give disconcertingly different hypothetical empirical results. There are complex trade-offs between various instrument/-objective mixes.

Having said that, there does seem to be both a theoretical and an empirical presumption in favour of less policy variability than New Zealand has experienced. This can be claimed partly because instability of the policy instrument settings, such as the budget deficit, and the intermediate targets, such as the money supply, have been particularly acute in this country since the mid-1970's.

On the theoretical side, there is a whole body of monetarist and new classical analysis which has barely been tapped in New Zealand but which makes it clear that fine-tuning to achieve stability and growth is an exercise of dubious merit. Despite the New Zealand style of fiscal policy probably bearing some resemblance to the conventional Keynesian approach, it is now being argued by some that Keynes too was more interested in stability than fine-tuning. The weight of theory thus bears increasingly against the New Zealand approach. Many other developed countries have recognised this by attempts to avoid excessive swings in fiscal policy, adoption of publicly announced monetary targets, and a willingness to allow exchange rates and interest rates to be largely determined by market forces. On the other hand, there is mixed evidence about the payoff from this approach and, indeed, in some countries the short run cost of monetarist policies in terms of unemployment has been high.[30]

Although these policy moves may be seen as a swing to a more conservative free market philosophy, there would probably be few economists of either monetarist or Keynesian persuasion who would not be pertubed by the extent of the swings in the fiscal and monetary variables in New Zealand.

Those who are not persuaded by theoretical analysis may find the domestic empirical evidence more convincing. Apart from the known variability of the lags, and of the economic relationships themselves over time, the sheer lack of knowledge about present inter-relationships, the possible inadequacy of future forecasts of activity, the unpredictability of external shocks, and the lack of understanding of the feedback effects of policy actions should induce a sense of caution about the extent to which meaningful short term adjustments can be used to 'fine-tune' the economy. At the very least, this case should be compelling with respect to substantial policy changes intended to have marked short term effects on the real output and employment variables. Although some model exercises show gains from discretionary policy actions, it is difficult to assess the trade-offs involved and to gauge the advantage to the model builder of the benefit of hindsight. Hypothetical simulation experiments can reveal as much about one's talent to fine-tune a model as they do about one's ability to replicate economic adjustments which correspond to real life possibilities.

It is not easy to be convinced by either extreme of the theoretical schools. Compromises seem inevitable in the face of multiple objectives and imperfect instruments. Nevertheless, frequent policy changes seem likely to give confused signals to the private sector and tend to 'pile up' on each other in a manner which makes it impossible to interpret accurately their ultimate impact. This may be because the policy course is altered within the period it takes for an initial policy change to become effective, or because responses can be so variable that it becomes difficult to disentangle the various cause and effect relationships.

This suggests the need to pursue medium term, two to three year, objectives in as consistent and phased a manner as external shocks permit; and so avoid major short term (say, within one year) shifts in the direction of policy. The evidence indicates that such policy changes may as often as not aggravate rather than ameliorate the problems to which they are addressed. Private sector adjustment seems most likely to be assisted by a set of Government policies about which the private sector is well informed and is confident will be maintained.

Thus if the exchange rate is to be officially managed, it

29 1977/78 was a marked exception, when there was a significant tightening of fiscal policy.

30 A cogent empirical analysis of this problem is offered by Terry Barker in The Economic Consequences of Monetarism: A Keynesian View of the British Economy 1980/90, *Cambridge Journal of Economics*, Vol. 4, No. 4, December, 1980, pp. 319-336.

should be done in a way which ensures it moves progressively towards the medium to longer run level which would be established by market forces. Monetary policy should be directed at avoiding large swings in the important monetary aggregates, and the growth rates of these should be constrained within some suitably narrow band below the inflation rate. In the face of external shocks, the positioning of this band relative to the inflation rate may need reassessment if private sector adjustments to the shocks is not to be inhibited.

If it is agreed that fiscal policy must play some discretionary role with respect to domestic activity, it should be appreciated that it will not by itself solve the unemployment problem and that the independence of fiscal and monetary policies can only be assured by appropriate financing of the budget deficit. In these circumstances, year to year changes in the deficit should normally be moderate rather than large.

There is an important case for making available a broader range of statistical and analytical information about the past operation, current stance and future intentions of fiscal policy. If this were combined with a policy strategy involving a more consistent matching of instruments with objectives over a long enough time period for the latter to have some chance of being achieved, and if there were a willingness to utilise the available instruments in an effective manner, then it seems likely that fiscal policy, and indeed other policies, could make a more positive contribution to growth and stability than has perhaps been the case in recent years.

TAXATION: PRINCIPALS, CONCEPTS AND REFORM

B.D. White*

INTRODUCTION

Perhaps the greatest risk with respect to the tax reform question in New Zealand, assuming that the need for tax reform is now accepted, is not that no changes will be made, but that reform will take the form of a series of unco-ordinated and inconsistent measures aimed not at the fundamental problems but rather at the symptoms of those problems. If this is to be avoided it is essential that a fundamental re-examination be undertaken of the basis for taxation, including its objectives and principles, and that a conceptual framework be formulated, within which alternative taxation options can be devised and evaluated. The New Zealand Planning Council, which through its *An Agenda for Tax Reform*[1] document was instrumental in having a Tax Reform Task Force established, has made an important contribution in this regard. It is now to be hoped that the Task Force, in the time it has available, will be able to get to the heart of the problems with New Zealand's tax system. This paper sets out what, in the author's view, some of those problems might be, and offers some thoughts on the general directions that tax reform could possibly follow.

The need for a fundamental review of taxation does not mean that tax reform need necessarily be a slow process. A considerable body of research has already been undertaken, both in New Zealand and overseas. Perhaps the most comprehensive and impressive contribution to this research is the report of the committee chaired by Professor J.E. Meade on the structure and reform of direct taxation in Britain.[2] While this report was prepared against the background of the British situation, it is nevertheless relevant to New Zealand in many respects, both because of its thorough conceptual analysis, which has general application, and because the U.K. tax system is, in broad terms, not unduly dissimilar from our own. Another report held in high regard is that prepared by our own Committee of Inquiry into Inflation Accounting (the Richardson Committee).[3] Although this was addressed primarily to the devising of a more meaningful method of measuring business income (including the income tax base for the business sector), the methods recommended by that committee have more general potential applications. This latter aspect has been developed by the Governor of the Reserve Bank, Mr R.W.R. White, in a series of articles in the Reserve Bank *Bulletin*[4] on a constant value unit of account.

Nor does a fundamental reform of taxation mean that the existing tax system need be scrapped overnight. This, quite apart from anything else, would not be practicable. Rather a framework once established would serve as the means of ensuring that tax policy thereafter was developed in a consistent manner, such that in time it should be possible to move towards a desired structure. A piecemeal approach along these lines would of course probably result in some of the existing problems and anomalies within the tax system being accentuated in the short term, given that anomalies in the existing tax system are so widespread that in many instances, one, to a greater or lesser degree, offsets another. Nevertheless it may well be that if progress is to be made in terms of moving towards a more soundly based tax structure, this is a price which will have to be paid.

OBJECTIVES AND PRINCIPLES OF TAXATION

Obviously, any tax framework will, implicitly or otherwise, embody a set of objectives and also those principles and criteria which it is judged need to be abided by and met if the tax system is to be an acceptable one. As other commentators have noted, it is largely because there have been so many departures from the established taxation principles and criteria, and perhaps, also because the objectives have not always been as clear as they might have been, that the present taxation system is becoming unacceptable and ineffective. An explicit restatement of the objectives and principles of taxation here is therefore considered to be warranted.

Objectives:

1. The Financing of Public Expenditure

This is unquestionably the primary objective of taxation. Any tax reform which results in a lower overall tax take in the current circumstances would not be helpful in terms of long run stabilisation objectives. This is, of course, unless a reduction in real government expenditure can be achieved at the same time. Given that tax reform for many apparently implies a reduced tax burden, at least for themselves, if not overall, it would perhaps be helpful if as much attention was given to the level and structure of government expenditure as is now being given to the reform of the tax system. This would require an examination of public expenditure patterns, levels, and growth in the light of the principles of public expenditure and perhaps also, given that public expenditure has been tending to grow more rapidly than gross domestic product, an examination of public sector expenditure control mechanisms.

2. Redistribution

The tax system is generally expected to act as one arm of redistribution policy, the other being social welfare policy. This is reflected in New Zealand in a progressive income tax rate structure on the one hand, and the payment of social welfare benefits to those in need, and in many instances irrespective of need, on the other. The two systems do not, and should not, operate entirely independently from each other. For instance, some benefits are provided by way of tax rebates etc, and other benefits are included in tax assessable income, this being an alternative means of introducing a degree of progressivity or means testing into these benefit payments. A means of

* An earlier version of this paper was presented at a conference held by the New Zealand Branch of the Australian Agricultural Economics Society, Picton, 24th-25th July, 1981. The author is grateful to R.L. Perry for assistance with the section on Tax Rate Structures, and to Dr R.S. Deane for helpful comments on the paper. The views expressed do not necessarily represent those of the Reserve Bank of New Zealand.

1 New Zealand Planning Council, 1981.

2 Meade, 1978.

3 Committee of Inquiry into Inflation Accounting 1976.

4 See Reserve Bank *Bulletins* for October, November and December 1979, May and October 1980, and January-February 1981.

operating both systems in a more fully co-ordinated manner is the 'negative income tax' approach. Under such an approach, income maintenance payments to low income earners would be made directly through the tax system, rather than through the social welfare system. In other words, tax credits would be paid to those 'taxpayers' whose income did not exceed some threshold level. This of course would not completely remove the need for a social welfare system, since many social welfare payments are made on the basis of special needs which involve greater than normal expenditures. Equally however, a large part of the social welfare system involves income maintenance programmes, which it would seem could be usefully integrated into the tax system with potential equity and efficiency gains.

3. **Macroeconomic Stabilisation**

The stabilisation role of taxation arises in part from the manner in which progressive tax rates act to generate movements in tax revenues which are proportionately greater than movements in the tax base (either up or down) thereby resulting in fiscal stimulus or restraint when the economy is depressed or buoyant respectively. Governments also adjust tax revenues in a discretionary manner as an element of 'fine tuning' stabilisation policies.

4. **Correcting Market Imperfections**

The market mechanism does not always generate price signals consistent with the optimal allocation of resources. That is, prices and costs do not always reflect true economic costs and benefits. In these situations externalities or market imperfections are said to be present and the selective imposition of taxes is one means of correcting for them.

Principles:

1. **Equity**

A tax system is expected to be equitable in both the vertical and horizontal sense. Vertical equity is perhaps best defined in terms of that degree of redistribution which finds general acceptance in the community. Horizontal equity requires that taxpayers in like circumstances should be treated equally. This in turn requires that tax laws should be capable of being enforced.

2. **Neutrality**

While taxes by their very nature must reduce private disposable incomes and thus private expenditures, they should, leaving aside those instances where the tax is designed to correct for market imperfections, alter or influence the pattern of private sector expenditures as little as possible.

3. **Administrative Efficiency**

A good tax should be capable of being administered efficiently by both the tax collecting authority and the taxpayer.

4. **Evidence**

Democratic principles require that taxes should be explicit. Taxes can be 'hidden', at best, only for a time, and then at the expense of the overall tax system eventually falling into disrepute.

5. **Stability**

Tax arrangements should be stable so that taxpayers can make decisions, particularly investment decisions, confident in the knowledge that the tax rules will not change such as to undermine the basis on which those decisions were made.

Having summarised the ground rules as it were, the paper now turns attention to the question of how the tax system should be reformed. This involves an examination of both alternative tax bases, and alternative tax rate structures.

ALTERNATIVE TAX BASES

A suggested first step to be undertaken in any tax reform exercise is an examination of the existing tax base. Other work has exposed a large number of defects in it, and the intention here is to examine, in broad terms, what would be required in order to bring it back to a meaningful basis for the assessment of taxes.

The Income Tax Base

Income, as currently defined for income tax assessment purposes, departs from a true measure of income in three fundamental respects.

1. A wide range of exemptions and rebates have been introduced which effectively exempt certain categories of income from income tax. The need for these measures, more often than not, seems to arise from either distortions elsewhere in the tax system or alternatively distortions in the economy which have their origins in some other aspect of economic policy. In both cases the more effective policy response might be to address the distortion directly, with a view to removing its cause, rather than introducing some tax measure designed to offset it. While this approach would not make tax exemptions and the like unnecessary and inappropriate in all cases – for instance the negative income tax proposition suggests that the tax system can be used to good effect as an income support mechanism – it would enable the income tax base to be defined in a manner which could be applied in a reasonably consistent manner to all sectors of the economy. The benefits in terms of increased revenue, equity, and simplicity should be apparent.
2. Non-monetary income, with some minor exceptions, is not included in the tax base. The principal items involved are the yield on personal realty and income received in the form of goods and services. The exclusion of these two categories of income from the income tax base is a negative factor in terms of the important revenue collection and re-distribution objectives, and also in terms of the equity and neutrality principles. The main justification for their exclusion is that making them subject to assessment would pose administrative problems particularly with respect to valuation and enforcement. Administrative considerations would also dictate that not every item of income of the type referred to could be taxed – so far as the yield on personal realty is concerned, it is likely that only the return on owner-occupied housing could realistically be included. Arbitrary rules would therefore continue to be needed to a greater or lesser degree. Nevertheless, on balance, it would seem as though there could well be scope to broaden the tax base in these areas with net equity and revenue gains. The case for taxing the rental of owner-occupied houses at least, was strengthened by the 1981 Budget measure which

allowed a tax rebate for interest paid on mortgages over certain owner-occupied houses.

3. Income tax is assessed on nominal income, not real income. This, during periods of inflation, gives results which again are almost without exception other than in accordance with the objectives and principles outlined above. Also the effects are perhaps more pervasive and complex than those stemming from the above mentioned defects in the income tax base and are accordingly dealt with here at greater length.

To arrive at a measure of real income, nominal (or historic cost) income needs to be adjusted in three respects: nominal interest needs to be adjusted to real interest, depreciation needs to be calculated on the basis of current (replacement) costs and inventory values used for establishing the cost of goods sold similarly need to be valued at current (replacement) cost.

Depreciation allowances based on the original purchase price of an asset, during periods of inflation, clearly understate the true economic costs which arise from the use of fixed assets in the production process, and reported income is correspondingly overstated. If tax and dividends are based on this overstated income, the capital stock of the economy is likely to be run down, or at least, not grow as rapidly as it otherwise would. This is, of course, unless firms are prepared to raise continually new funds, either from shareholders or by borrowing, in order to finance the necessary replacement investment which has not been provided for by way of adequate retention of internally generated funds. There are, however, limits on the extent to which these sources of finance can be relied on. Investors cannot be expected to be enthusiastic about commiting new funds to businesses in order just to stand still. Also firms need to exercise some prudence with respect to their gearing ratios, especially given the cash flow implications of present interest rate arrangements, as discussed below.

Much the same arguments for the use of current replacement costs in calculating depreciation allowances apply to the case for using current replacement costs of trading stock when calculating the cost of goods sold. Failure to do so results in the increased nominal value of trading stock held over the accounting period being reported as income, although in real terms, no income has in fact been earned. If a firm holds ten units of stock valued at $10 at the beginning of the accounting period and at the end of the period again holds 10 units of stock which are now valued in nominal terms at $15, there is a 'profit' of $5. Because this 'profit' is nothing more than an illusory paper profit, any taxes levied on it, or dividends distributed from it, as for the case where inadequate provision is made for depreciation, can be met only by running down the capital base of the firm, or by raising new funds from outside of the firm.

So far as the tax treatment of interest is concerned it is necessary that we recognise that with conventional debt instruments, interest is in large part, if not entirely, a capital maintenance payment, and not income. This suggests that interest, at least up to the rate of inflation, should be neither assessable for lenders nor deductible for borrowers for income tax purposes. Present income tax arrangements, which allow both, have significant adverse resource allocation implications. For instance, most investors in financial assets find that their after tax interest returns are insufficient to maintain the purchasing power of their savings. This, other things being equal, can be expected to distort expenditure patterns in favour of consumption and the direct purchase of real assets on which so called 'capital gains' are tax free, and away from the purchase of financial assets. Likely consequences include greater than average pressure on prices in some sectors (e.g. residential, rural and commercial real estate) which through a variety of ratchets and linkages can be expected to boost inflation generally, and a sub-optimal allocation of investment resources to the extent that direct investment in real assets results in projects not having to compete against each other for the limited supply of investment funds. In other words, the likelihood of investment funds being allocated via the financial intermediation process to those activities yielding the highest productive rate of return is reduced.

There is another problem in the interest rate area which again, at least in part, stems from existing taxation arrangements for interest. By using the interest rate mechanism as the means by which financial contracts are adjusted for inflation, the pattern of cash flows associated with debt servicing is severely distorted. With lenders being compensated for the erosion of the purchasing power of their capital in the form of a higher rate of interest, interest payments for the borrower have in effect become in part capital repayments. The overall debt servicing burden is thereby pushed towards the early years of the borrowing term, often causing liquidity problems for borrowers, even when the venture being financed is profitable. Investment expenditure generally is likely to be inhibited, and that which does take place is likely to be biased in favour of projects with short pay-back periods. Both can be expected to have adverse effects on economic growth. Compressed debt repayment schedules are also likely to put further pressure on the rate of inflation, given that firms facing cash flow problems are likely to raise prices in order to cover their debt servicing commitments.

If inflation cannot be eliminated, one possible response to the above problems would be for financial contracts to be indexed, i.e. the inflation adjustment would be made to the principal of the debt and not by way of the addition of an 'inflation premium' to the interest rate. This would enable debt servicing burdens to be evenly spread over the term of the loan and at the same time real rates of return to financial savers could be raised. However, existing taxation legislation does not recognise this approach – indexed contracts are taxed as if interest was paid in the conventional manner (except for inflation adjusted savings bonds). Under these conditions it is not surprising that savers/lenders are not enthusiastic about financial indexation and the overall result, paradoxical as it may seem, is that interest rates have tended to end up being too low and too high at the same time. From the point of view of savers they are too low (given that after tax, and often before tax, real rates of return on financial assets are negative), this having adverse implications for resource allocation and inflation. But from the point of view of borrowers they are too high (given the cash flow requirements imposed by 'high' nominal interest rates), this again having adverse implications for resource allocation and inflation.

So far as tax policy is concerned, the essential step required before financial indexation could be implemented is the making of the 'inflation premium' component of the return on financial assets neither assessable (for the lender) nor deductible (for the borrower) for tax purposes. This could be achieved in either or a combination of two ways. First, for contracts which are actually indexed, the inflation adjustment to the contract could be made neither assessable nor deductible for income tax purposes providing that:

(a) the adjustment did not exceed the percentage increase in the consumers' price index, or such other officially approved index, for the period of the loan; and

(b) the inflation adjustment was added to the principal of the debt for repayment purposes.

For non-indexed contracts, it would be necessary to apply an inflation accounting type net monetary assets/liabilities adjustment in order to derive the real interest return to be assessed for tax. The adjustment would be assessed by applying the percentage change in the consumers' price index, or again such other officially approved index, during the accounting period to the taxpayer's net monetary liabilities/assets; the adjustment to net liabilities being a gain and that to net assets being a loss. Given that interest received and paid would already have been credited and debited to revenue, the effect of such an adjustment would be to make only the real rate of interest received on monetary assets, and paid on monetary liabilities, assessable and deductible respectively.

It would probably be necessary, however, to restrict the application of the latter measure to only those taxpayers who finance commercial and/or financial investments by borrowing, i.e. the so-called 'business' taxpayer. 'Personal' taxpayers would continue to be taxed as at present. The rationale for this approach is as follows.

First it would probably not be practicable to make an inflation accounting type adjustment to interest received on personal savings.

Second, there would be an incentive for these savings to be indexed. In this regard, it would of course be important for indexed savings instruments to be made readily available, and on terms and conditions which would meet the varying needs of savers. For instance, it would be important for a range of terms to be made available, so that savers, if they so wished, could receive a cash flow from indexed savings which would correspond, more or less, with that provided by conventional savings instruments. The only difference would be that under an indexed contract, this would result in the real value of the capital sum being reduced in an *explicit* manner, whereas under present arrangements taking the inflation premium as income can give the saver the *impression* that the value of his capital is being maintained. The personal saver would therefore have nothing to lose, but something to gain (a tax saving) by saving by way of indexed instruments, and in these circumstances, it would be likely that in a relatively short space of time, the bulk of personal savings would be indexed. The Government, both as a competitor for personal savings, and as the source of financial institutions' reserve assets, could contribute substantially by indexing its own debt instruments.

Thirdly, interest payments by 'personal' taxpayers (i.e. interest payments on 'consumer credit') are not tax deductible, and in this case therefore the question of whether it is the nominal or real rate of interest which should be tax deductible does not arise. It could nevertheless be expected that indexed lending to the personal sector would become widespread, since financial institutions, for prudential purposes, would need to ensure that their indexed deposit liabilities were more or less matched by indexed assets and because borrowers could obtain a substantial cash flow advantage if debt were indexed.

A further point to be noted is that for firms with net monetary liabilities, the monetary adjustment proposed (and the monetary adjustment inherent in inflation accounting proposals) would exacerbate the cash flow problems which arise under existing interest rate arrangements. However, in most instances, this would be offset by the inflation accounting adjustments to stocks and depreciation, and insofar as any problem remained, it would be not so much a flaw in the proposal but a consequence of using inappropriate non-indexed debt instruments. As such it could be expected to hasten the move toward the use of a more logical form of debt instrument, i.e. indexed debt instruments.

The re-definition of income as proposed above has important implications for the meaning of so called 'capital gains' and the role of a capital gains tax. The first point to recognise is that the sale of an asset for a price higher than that for which it was purchased does not necessarily represent a real gain, if the price level has increased at the same time. In principle, real 'capital gains' can be made only if the asset in question has been financed by debt bearing a rate of 'interest' (including any inflation premium for indexed debt) which is less than the rate of increase in the general price level and/or the increase in the price of the asset concerned exceeds the increase in prices generally.

There is probably general agreement that those gains arising from the first source i.e. inflation generated financial wealth transfers, should be captured by the tax system. Whether those arising from relative price changes should be, however, is not clear-cut. Equity considerations perhaps would suggest that they should be taxed, but then, this would be at the risk of severely distorting market price signals. One's view on this point depends on what balance one wishes to strike between equity and economic efficiency considerations. It also has clear implications for the choice of index for indexation and inflation accounting purposes. If it is only the inflation generated transfer of wealth from lenders to borrowers which one wishes to capture in assessable 'income', then the appropriate index to be used would be a general price index. If gains and losses arising from relative price changes were also to be captured, then reference would also need to be made to specific capital asset price indices. This can perhaps be best demonstrated by way of a simple example:

Rate of price increase in specific asset A	'Interest' rate	General inflation rate
15%	8%	10%

The holder of Asset A, under the above conditions would over the period of ownership make a gain (in percentage point terms) of 5 per cent (15 per cent – 10 per cent) on account of the change in its relative price, and a further 2 per cent (10 per cent – 8 per cent) on account of the rate of interest being less than the general inflation rate. If it is only the latter gain which is to be included in assessable income, then this can be achieved by allowing only the real rate of interest, i.e. the nominal interest rate, less the general inflation rate, to be tax deductible. (Negative real interest rates would imply tax assessable income).

It was suggested earlier that the Government should index its own debt instruments, largely because of the influence that Government debt has in financial markets, either as an instrument in direct competition with the deposit liabilities issued by financial institutions, or as the reserve asset held, in most cases compulsorily, by financial institutions. In other words, if government securities were not indexed, financial institutions would have neither the incentive, nor the capacity to index their own deposits.

There is however, a more direct argument for the Government to index its own liabilities, or at least ensure that they return a positive after tax real rate of return – failure to do so results in an implicit tax on financial savings. A negative real rate of return on Government debt, as for any other debt, implies a transfer of wealth from the lender (the holder of the government security, usually in the first instance a financial institution, but in the final analysis, the holders of the deposits with that institution) to the borrower (the Government). To give some indication of the current magnitude of this 'tax', the average before tax rate of return on the internal public debt outstanding during the 1981 fiscal year was approximately 9 per cent. Against an inflation rate of 16.1 per cent, this implies a negative nominal return of 7.1 per cent, which in after tax terms is probably closer to 10 per cent (assuming an average marginal tax rate of only 30 per cent). Given that the average amount of internal public debt outstanding during 1981 was $6,675 million (excluding that held by the Reserve Bank and inflation adjusted savings bonds), the implied tax on private sector financial savings was some $670 million. This represents some 9.5 per cent of total reported or 'official' taxation receipts in that year.

To summarise this section, so far as the income tax base is concerned, what is required is a reassessment of the meaning of the distinction between capital and income. Traditional interest rate arrangements and accounting conventions result, in inflationary circumstances, in income being overstated, at the expense of capital. On the other hand, so called 'capital gains' in many, if not most, instances are not *real* gains, and of those that do represent real gains, they are in large part perhaps more meaningfully interpreted as a component of real income. Finally, the effective overall tax take tends to be understated.

The Expenditure Tax Base

Expenditure, as a tax base, means different things to different people. For many, the characteristic feature of expenditure taxes is that they are *indirect* i.e. the tax is levied on goods and services at some selected point, or points, in the production and distribution chain. For others, expenditure means final *consumption* expenditure only. This excludes all expenditures on investment goods and also intermediate consumption, i.e. non-capital inputs into production and distribution processes. It is only this latter definition of the expenditure tax base which differs from the income tax base in a fundamental sense; the difference between direct and indirect taxes is limited to the fact that they have different points of initial impact, and thus essentially distributive implications. This latter aspect will be discussed later; for the present, attention is focussed on the nature and appropriateness of the 'expenditure' tax base as it currently applies in New Zealand.

The 'expenditure' taxes currently levied in New Zealand comprise a wholesale sales tax and customs and excise duties. They are applied in a selective manner and to both *consumption* and *investment* goods (examples of the latter being business motor vehicles and a range of manufacturing plant and machinery), and it is therefore probably fair to say that they represent, insofar as they resemble any meaningful tax base as opposed to an ad hoc collection of separate taxes, an indirect tax on income (which is equivalent to consumption and investment) as much as they represent a tax on consumption. This, however, should not be taken as suggesting that they come very close to either tax base measure. The fact that they are selective in their application, most notably exempting services, means that either way the base is not at all comprehensive. Moreover, levying the tax at a single point in the production/distribution chain (the wholesale level for sales taxes, and the point of importation for customs duties) results, in many instances, in intermediate consumption being taxed in such a manner that taxes have a cumulative effect, i.e. taxes are paid on a base which has often been inflated by previously paid taxes.

A feature of final consumption expenditure as a tax base is that it is neutral with respect to the capital market. The basis for this is that the taxpayer, in making a choice between consuming and saving, is really making a choice between consuming the resources at his disposal now, as a lump sum, or postponing current consumption in favour of consuming a flow of goods and services (equivalent to the yield on his saving) thereafter. Under an income tax regime, which taxes both funds invested (postponed consumption) and the yield thereon (future consumption), there is in effect double taxation on income saved and thus a disincentive to save and invest.

A true consumption expenditure tax on the other hand, by exempting saving/investment from any tax liability, taxes consumption only once. The effect is that, for any given rate of tax, the rate of return to the saver on consumption foregone is made equal to the rate of return which can be earned on the investment his saving finances. Thus, the saving/consumption decision is based entirely on the adequacy of the rate of return available on investment. For the Meade Committee, this was the essential feature of a true expenditure tax.[5]

So far as the labour market is concerned, the comparative effects of income and consumption based taxes are less clear. On the one hand their effects are likely to be similar, given that for most people work decisions are undoubtedly made with the expectation that the greater proportion of the income will be consumed. It should be noted, however, that if savings for the private sector as a whole are positive then a consumption tax base will be narrower than an income base and, for a given revenue requirement, tax rates would need to be correspondingly higher. Thus if wage and salary earners typically consume a greater proportion of their income than those deriving an income from other sources, and are therefore concerned more with immediate than future returns, an expenditure tax could result in worse labour market distortions than an income based tax. Whether the distortions will be in the nature of incentives or disincentives to work effort and labour market participation depends, of course, on the relative weights of the income and substitution effects.

In terms of equity considerations, there appear to be two broadly opposing views on expenditure taxes. On the one hand, it is often claimed that a tax which taxes what one takes out of the community's pool of resources, i.e. consumption expenditure, is a fairer tax than one which taxes what one contributes to the pool of resources, i.e. output or income. Moreover, an expenditure tax would result in all consumption being taxed; not only that financed from current income, but also that financed from inheritances, gifts, and proceeds from the sale of assets (including any element of capital gain). In this sense, it might be claimed that an expenditure based tax system would be more comprehensive than the present income based system. On the other hand, however, it needs to be acknowledged that any inheritances, gifts, capital gains and income not consumed would escape tax, and that there would therefore be considerable scope for wealth to be accumulated. While the principle of taxing only what one

5 Meade, 1978, p.37.

takes out of the community's pool of resources would suggest that this should not be a cause for concern, it needs to be acknowledged that concentrations of wealth can imply benefits to the holders of that wealth in terms of economic security and power. These latter considerations suggest that equity would be enhanced under an expenditure tax regime if taxes on consumption were augmented with taxes on wealth, say an annual wealth tax or an effective system of estate and gift duties.

The alternative view on the equity of an expenditure based tax system is that expenditure taxes are inherently regressive; first because consumption expenditure typically absorbs a larger proportion of the income of low income earners than of high income earners, and second, because expenditure taxes are usually seen as being indirect and therefore not progressive. Both these objections to expenditure based taxes are, however, capable of being overcome. The first could be taken care of by appropriately balancing taxes on consumption expenditure with taxes on wealth, while with respect to the latter, it needs to be recognised that an expenditure tax can in fact be applied either directly or indirectly.

To tax expenditure as defined in this paper, i.e. final consumption expenditure, indirectly, it would be necessary to introduce a value added type tax. Under this approach, the whole of the sales value of consumer goods and services, whether imported or produced at home, is taxed by instalments as the goods move along the production and distribution chain involving successive transactions between businesses. Although the tax is levied at all stages, their total value is subject to the tax once and once only since each business pays the tax as a percentage of its sales, but *less* a credit for the VAT invoiced to it by its own suppliers. The tax comes home to rest, as it were, on the final consumer, for whom there are no tax credits.

The first, and perhaps most characteristic feature of the VAT approach is that it avoids what is commonly referred to as the 'cascade' effect which arises with turnover taxes, i.e. the effect referred to earlier where taxes can be cumulative if goods or services happen to have unintegrated production stages. In other words, a VAT is neutral with respect to differing methods of production and distribution.

Another feature of a VAT is its treatment of imports and exports. As mentioned, imports, to the extent that they are consumed, are taxed, while exports, not forming any part of domestic final consumption expenditure are exempted or more precisely taxed at a zero rate. If they were totally outside of the system, exporters could not claim a credit on the VAT charged to them. This treatment of imports and exports clearly provides scope for a more integrated approach to protection and export encouragement policies, compared with the present collection of export tax incentives and tariffs.

The major difficulties with VAT are not conceptual, but are of a more practical nature. First, as it is a tax which would be passed on to the consumers of goods and services, its introduction would inflate the consumers' price index (CPI). Given present institutional arrangements for incomes determination, where the CPI assumes considerable significance, the consequences for cost and price inflation, in the absence of any change to institutional arrangements, could be serious. As suggested, however, this problem is essentially a practical one; there is no reason why the CPI could not be adjusted to show price movements exclusive of VAT and why the parties involved in incomes determination should not agree that such an adjusted index would be more relevant for this purpose than the CPI, providing of course, that the introduction of VAT represented a genuine switch from income tax to expenditure tax, and not an increased tax burden overall. If the latter were the case, then it may well be difficult to bring about the required change in institutional arrangements.

The second disadvantage of a VAT is the administrative costs involved, for both businesses and the tax collecting authority. Extensive accounting records would be required to 'keep track of' all VAT charges and credits. Whether the costs involved would be worthwhile has to be judged against the benefits to be derived from the taxes' neutrality and also, the fact that it could be effectively enforced. In this regard, it should perhaps be noted that the value added method of taxation has been used for many years now in a number of overseas countries, particularly the EEC countries.

However, perhaps the overriding consideration in making a choice between direct or indirect expenditure taxes (or income taxes) is their respective distributive implications. With a direct tax, i.e. one which is levied on taxpayers rather than on goods and services, it is possible to relate the amount of tax payable by an individual to his level of expenditure (or income). For example, the tax can be made progressive whereby those with higher incomes/expenditures pay a proportionately higher rate of tax than those with lower levels of assessable income or expenditure. This cannot be achieved, at least not so readily and efficiently, with an indirect tax.

A commonly suggested means of building at least some progressivity into indirect taxes is to structure the system such as to exempt, or tax at a lower rate, expenditures on basic commodities, which are likely to absorb a relatively greater proportion of the income of low income earners than high income earners. Under this approach, however, the amount of redistribution actually achieved is at best uncertain; inequities tend to arise given that the tax burden on any individual becomes as much a function of his tastes as of his income/expenditure level; and stemming from the latter point, the neutrality principle is contravened in a rather obvious way.

While indirect taxes clearly have serious limitations as an instrument of redistribution policy, it has to be acknowledged that even with direct taxes, the distribution of the tax burden cannot be guaranteed to correspond with that desired, since the final or effective incidence of a tax does not necessarily correspond with its initial incidence. For example, income taxes can have an influence on the level of wages that unions may attempt to negotiate with employers; indeed, it is becoming apparent that wage and salary negotiations are increasingly being based on after tax rates of pay rather than gross rates. In this way, employees attempt to shift at least some part of their tax burden on to employers, who may in turn of course attempt to pass it on to the 'consumer' by increasing the prices of the goods produced. The extent to which taxes can be shifted in this way depends very much on the supply and demand conditions in the various markets concerned, and in the final analysis the effective incidence of a direct tax is neither stable nor certain.

On the other hand, it is probably fair to say that in general taxes are not perfectly 'mobile' and therefore that the final incidence of a direct tax will at least to some extent correspond with its initial incidence. This, in conjunction with the fact that indirect taxes are also capable of being 'shifted', perhaps even more so than for direct taxes given that there has been a general and long standing acceptance

of the practice of adding indirect taxes to resale prices, would suggest that so far as income distribution policy is concerned direct taxes may be a more effective instrument than indirect taxes.

A direct expenditure tax could operate administratively along much the same lines as the present income tax system, at least for personal taxpayers. By being direct, tax rates could readily be made progressive, and it is also conceivable that a PAYE system could be operated. Personal taxpayers would be required to prepare an annual return which would be based on something like that set out in table 9.

A major point at issue with the direct personal expenditure tax is the treatment of expenditures on consumer durables. If treated as consumption expenditure the tax burden on, say, the purchase of a house could be rather lumpy especially if tax rates were progressive. If this was considered to be a problem then an alternative approach to the taxing of large consumer durable items might need to be found. One alternative approach would be to treat consumer durables as investment or non-assessable expenditure items at the time of purchase, and to capture the consumption element either by way of an annual current cost depreciation charge, or by an annual imputed rental value charge. Either way there would be administrative difficulties, which in some respects are not dissimilar from problems which arise in the same area with the income tax system. Perhaps the instructive point is that under this approach to the taxation of consumer durables non-monetary items (i.e., the yield on personal realty and income/expenditure in kind) form part of a comprehensive expenditure tax base as much as they do a comprehensive income tax base. Much the same types of difficulties need to be grappled with in these areas, irrespective of the tax base selected. It goes without saying that an expenditure tax base would also be capable of developing the first of the major areas of defect identified in our present income tax base – the extent or rebates and exemptions.

While on the question of uneven tax burdens, it should be noted that this is not a problem peculiar to expenditure based taxes. Some sectors of the economy (e.g. the farming sector) experience considerable fluctuations in income from year to year, and for these sectors, it is likely that consumption expenditure would provide a more stable tax base. If so, the introduction of a consumption expenditure based tax regime would probably ease or remove any need for the existing tax smoothing devices for the farming sector, namely income equalisation accounts and livestock standard values.

For business taxation to be consistent with a personal tax system based on a direct expenditure tax, which it is important that it should be, given that non-incorporated businesses fall within the 'personal' tax system, it would be necessary for the business tax base to be converted from the income base to a flow of funds base. In the same way that personal tax would be assessed on total receipts (cash income and capital receipts) less capital payments, business taxation would be assessed on net cash receipts arising from the sale of goods and services plus/minus the net flow of funds arising from borrowing/lending and real asset transactions. This amount is, by way of the flow of funds framework, definitionally equivalent to the net withdrawal of funds from the business by its owners, i.e. dividends in the case of companies (including any distributions from capital, either during the life of the company, or on it being wound up) and drawings for unincorporated businesses. It should be clear that in the case of the latter, if both the business affairs and the personal affairs of the owner are recorded in a single set of accounts, as is usually the case for small businessmen, then drawings are identical to the owner's consumption, and the business tax liability would be equivalent to the personal tax liability. An outline of a business flow of funds tax return is contained in table 10.

For companies, distributions once in the hands of shareholders, whether from income or capital, would be liable for additional tax; maybe not immediately if they were saved, but eventually when they were spent on consumption. In other words, double taxation for companies could be retained. Whether or not this can be considered as being desirable, however, is another matter.

Indeed, it is difficult to find an economic justification for the double taxation of company income. While a company is clearly a separate *legal* entity in its own right, it can be misleading to view a company as being a separate economic entity with a tax paying capacity. Taxes levied in company income, like all other taxes, must ultimately be borne by individuals – either consumers if the company is able to shift the tax forward, or by its shareholders if it is not. If, as is the case, taxes are also imposed on shareholders when they receive distributions of company income, then it is clear that in some instances the effective rate of tax borne by the equity investor can be very high. This, particularly in combination with the tendency for conventional accounting methods to result in business income being overstated in the first place, must act as a disincentive to business investment.

Against this background, it is interesting to note that a growing number of companies over recent years have been able to avoid their income being taxed twice by using increases in the nominal value of their assets to create 'capital profit reserves', from which dividends can be distributed tax free. While this development has undoubtedly assisted in making equity investment less unattractive than would otherwise have been the case, the present situation cannot be judged as being a satisfactory one. It is characterised by uncertainty, inequities and anomalies, with some companies being better placed to create 'capital profit reserves' than others, simply because of differing corporate structures.

There are therefore two fundamental questions which need to be addressed in relation to the tax treatment of company income. The first involves the reassessment of the meaning of the distinction between capital and income in an inflationary environment already referred to. One approach to this problem would be to introduce inflation accounting concepts and methods as discussed in the preceding section. An alternative approach would be to shift from the income based tax system to an expenditure based system, with a flow funds system as outlined above being applied to the business sector. The latter approach; aside from having some appealing conceptual features, would have the major practical advantage of being relatively simply compared with inflation accounting methods. In particular, all flows could be measured in terms of the monetary unit of account, since they would all relate to the same accounting period.

The second issue concerning the taxation of companies is that of double taxation. Given that there is a little if any economic justification for this practice, it is suggested that distributions of company income, having already been taxed as company income, should be free of tax in the hands of shareholders. An explicit move in this direction is certainly to be preferred to the de facto removal of taxes

on company dividends which is currently occurring by way of distributions being made from 'capital profit reserves'. Also given that the amount of revenue involved would not be large, it would appear to represent a means of assisting the business sector in a meaningful way, at a limited cost.

TAX RATE STRUCTURES

One of the objectives of taxation is the redistribution of income within the community, generally from those with high incomes to those with lower incomes. This, perhaps in conjunction with a view that income and expenditure is subject to diminishing marginal returns, has resulted in a tax rate structure, at least so far as income is concerned, which is progressive. The existing indirect taxes perhaps reflect a degree of progressivity in the sense that so called 'luxury' goods are taxed at higher rates, but then it is perhaps regressive in the sense that expenditure may represent a greater proportion of the income of low income earners than high income earners. Another aspect which also needs to be taken into account when considering the structure of tax rates overall is the interrelationship between the tax system and the social welfare system. If social welfare benefits are means tested, there is a tendency for effective marginal 'tax' rates at the lower end of the income scale to be quite high.

This points to the need to look at the tax system as a whole when considering an appropriate rate structure. For New Zealand, it is not at all clear what the effective incidence of taxation is, although it is probably safe to say that it is not as it might superficially appear to be, given that our measures of income and expenditure depart substantially from true income and expenditure concepts and our lack of knowledge on the final incidence of taxes. Moreover, it is often claimed that tax avoidance is more common for higher income earners, because they face high marginal tax rates and are more likely to have the expertise required to arrange their affairs in such a manner as to minimise their tax liability.

Focussing for the moment on the present income tax rate structure, it is probably fair to say that it corresponds, at least to some extent, with what the Meade Committee described as a 'high-low-high' structure.[6] Effective marginal tax rates at the lower end of the scale, when the effect of the abatement of the low income family and other rebates are taken into account, are significantly higher than the rates specified in the schedule of rates contained in the Income Tax Act. Rates in the middle of the scale are generally only a little higher, (if not in some circumstances lower) than these effective rates at the lower end, while rates clearly do rise toward the upper end of the scale.

A marginal rate structure of this nature can be criticised on the grounds that it does not represent the most satisfactory balance between redistribution and economic efficiency considerations. The disincentive effects may be strongest for the lowest income earners, giving what is often referred to as the 'poverty trap', and for the highest income earners, who are perhaps best placed to substitute 'leisure' for 'labour'. Moreover, there is often little to be gained distributionally by taxing very high incomes at very high rates, given that the number of taxpayers involved is likely to be small: the income distribution may be made more even, but not much income will be redistributed.

Against this background it may be that a flatter rate structure would represent a more appropriate balance. In the attached table 8, the results of applying a flat 23.6 per cent rate of income tax to the 1975/76 fiscal year income tax data (the latest sufficiently detailed data available) for personal taxpayers are set out. The flat rate chosen is that which generates the same revenue as was in fact collected in that year. The most notable feature in the table is that if a flat rate of tax at this level, and without exemptions and rebates, had applied, the after tax distribution of declared income would in fact have been substantially different, with as would be expected, lower incomes bearing more tax and higher incomes less. While lower rates of tax on high incomes would undoubtedly result in there being less disincentive for high income earners to earn additional income and an incentive to declare the assessable income in respect of which they presently find it worthwhile to incur expenses and inconveniences in order to avoid paying tax, it must be considered as being doubtful whether this would result in sufficient additional income being declared to enable the tax burden on those at the lower end of the scale to be restored to what it was under a progressive rate structure. In other words, the progressive rate structure, in New Zealand at least, probably does achieve a significant amount of redistribution. If a reasonable amount of redistribution was to be achieved under a flat rate structure, it would probably be necessary to move in the direction of the negative income tax approach.

If a flat rate structure cannot be achieved, either because the redistribution implications are not acceptable, or because a negative income tax system is judged not to be appropriate, then it may well be worthwhile to consider reducing marginal rates of tax on high income levels, since as already suggested, the disincentive effects here may considerably outweight the benefits to be obtained in terms of income redistribution, given that the aggregate amount of income involved is small. It is indeed argued by some (e.g. Professor Friedman during his recent visit to New Zealand) that, for the reasons already given, the amount of tax paid by high income earners may actually rise if marginal tax rates above some threshold were lowered, and that in this sense income redistribution objectives would be assisted.

Whether the change in income distribution which would be implied by a flat tax rate would be politically acceptable is a matter for conjecture. If it is not, and it is considered that progressive tax rates have a role to play, there is another point which requires attention. This is the question of tax indexation.[7]

Where tax rates are progressive and/or where exemptions and rebates are specified in nominal dollar terms, there is a tendency for average tax rates to rise as inflation pushes incomes into ever higher tax brackets, and erodes the real worth of the exemptions and rebates. The result is a tendency for the tax take to increase in an automatic and arbitrary manner. If both rates and exemptions/rebates were indexed, this could not occur, this outcome being desirable for a number of reasons.

First, increased Government expenditure in real terms would require the Government explicitly to raise tax rates. This would result in the electorate being faced with a clearer choice between more Government expenditure and higher taxes, or lower Government expenditure and lower taxes. At present, it is not always evident that this

6 Meade, 1978, p.308.

7 This topic is dealt with in some detail in the Reserve Bank *Bulletin* for January-February 1981.

trade-off is fully appreciated. At the same time, it is becoming evident that trade unions and others are realising that in order to maintain real disposable incomes, it is necessary either for before tax incomes to rise significantly more rapidly than the rate of inflation, or for an increased proportion of income to be paid in a form which is not subject to tax. The former obviously accelerates the wage/price spiral, while the latter results in inequities. Finally, as more and more taxpayers move into higher tax brackets, the progressivity of the tax structure is effectively reduced, i.e. the effective tax rate rises proportionately more for low income earners than high income earners. Just as any change in the overall tax take should be made explicit, so should any change in the distribution of the tax burden. With an indexed tax system, a change in the distribution of taxes could only be achieved by legislation.

The principal argument against the indexation of the tax system is that as it operates at present, it operates as an automatic macroeconomic stabiliser, i.e. when incomes rise, the tax take rises more than proportionately and vice versa. However, it is doubtful, to say the least, whether this mechanism works satisfactorily any longer, since with persistent inflation it continually works as a deflationary influence, irrespective of whether real activity is rising or falling. Governments, in these circumstances, have found it necessary to make tax cuts (from time to time) and increase Government expenditure as a means of offsetting this deflationary influence during periods when real activity has been falling, notwithstanding high rates of inflation. From this point of view, 'fiscal drag' has perhaps more than just facilitated increased levels of Government expenditure. It may well have been an underlying cause.

Against this background, it should be apparent that stabilisation objectives, where the objectives are specified primarily in terms of real activity, and not the price level, would be better served by an indexed tax system, given that fiscal restraint would then be imposed only when real incomes and activity were rising strongly, and vice versa.

CONCLUSION

This concluding section summarises the essential points made in the paper.

First, it is important that tax reformers and policy makers are clear on their objectives and on the principles which underly a good tax system. The latter aspect is of particular importance in taxation, because any tax system, in the final analysis, is dependent on it being acceptable, or at least not unduly unacceptable, to those to whom it is applied. The objectives and principles of taxation are listed in the paper, not because they are not set out elsewhere, but because, if tax policy over the last decade or so is any guide, they are too readily overlooked.

The second section of the paper examines alternative tax bases. This involves asking the questions, what is income? what is expenditure? what are our capital gains? It is argued that income as conventionally measured is severely distorted by inflation, and that capital gains, when income is redefined to account for the effects of inflation, are much less of an issue. In essence there is a need for a reassessment of the distinction between capital and income in an inflationary environment. Inflation accounting concepts and methods provide one approach to this problem, but an alternative approach would be to adopt an expenditure based tax system where all expenditure flows would relate to the same time period and therefore could be measured in terms of the monetary unit of account. With respect to so called expenditure taxes, we need to be clear on whether we are referring to taxes on consumption expenditure only, or whether it is indirect taxes (i.e. taxes on goods and services generally) which we are referring to. Each raise different sets of issues.

The section on alternative tax bases also provides a conceptual framework within which behavioural responses (i.e. incentives/disincentives) under the two tax systems can be evaluated. The conclusion reached is that an expenditure tax, compared with an income tax, might cause less distortions in the capital market but perhaps greater distortions in the labour market. With respect to the equity implications of income versus expenditure taxes, it is suggested that the latter need not imply an increased tax burden on low income earners if it is accepted that expenditure taxes can be applied as a direct tax and if they were to be augmented with appropriate taxes on wealth.

The final section looks briefly at some aspects of alternative tax rate structures. While the overall level of tax rates is obviously dependent on the Government's revenue requirements, the structure of tax rates does have some important implications, both for the ability of the system to meet its objectives, and for the choice of tax system, particularly the choice between direct and indirect taxes. It is suggested that the structure of rates applied in New Zealand probably does effect a significant redistribution of income (at least reported income), but at the expense of disincentives for both high and low income earners.

Finally, it is argued that if a progressive tax rate structure is to be retained, on account of redistribution requirements, there would be considerable merit in indexing the tax rates and exemptions and rebates for changes in the price level.

REFERENCES

Allan, Charles M., *The Theory of Taxation*, Penguin Books Ltd., Middlesex, England, 1971.

Brash, D., *Should We Reform the Tax Structure*, Address given to Takapuna Rotary Club, November 1980.

Committee of Inquiry into Inflation Accounting, Report of; New Zealand Government Printer, Wellington, 1976.

Crick, B., and Robson W.A., (Eds), *Taxation Policy*. Penguin Books Ltd., Middlesex, England, 1973.

Department of Statistics, *Incomes and Incomes Tax to 1979*, Wellington, New Zealand. November 1980.

Kay, J.A., 'The Meade Report After Two Years,' in *The Journal of the Institute for Fiscal Studies*, July 1980.

Kay, J.A., and King, M.A., *The British Tax System*, Second Edition, Oxford University Press, 1980.

McKay, L., 'Direct or Indirect Taxation,' in *The New Zealand Law Journal*, November 1977.

Meade, J.E. (Chairman) *The Structure and Reform of Direct Taxation*, George Allen and Unwin, London, 1978.

Monetary and Economic Council, *The Public Sector*, Report No. 31. Wellington, October 1976.

New Zealand Planning Council, *An Agenda for Tax Reform*, Wellington, June 1981.

Taxation Review Committee, Report of; New Zealand Government Printer, Wellington, October 1967.

Ross, L.N., 'The New Zealand Tax System, are changes Necessary?' in *Canterbury Chambers of Commerce Economic Bulletin*, No. 3, 1981.

Reserve Bank of New Zealand *Bulletins*, October, November and December 1979, May and October 1980 and January - February 1981.

Stout, D., 'Value Added Taxation,' in Crick, B., and Robson, W.A. (eds), *Taxation Policy*, Penguin Books Ltd, Middlesex, England, 1973.

LIST OF TABLES

Table

1 Some Illustrative Budget Indicators

2 Monetary Aggregates and Consumers' Price Index

3 Changes in the Money Supply and Selected Liquid Assets (M3)

4 Government Financing Transactions

5 Comparison of Domestic Growth, External Balance and Fiscal Balance

6 Core Model Multipliers in Response to Reduced Size of Government Budget

7 Core Model Simulation of Smoothed Government Expenditure

8 Alternative Tax Rate Structures: Application to 1975/76 Data

9 Personal Direct Expenditure Tax Return computation of Assessable expenditure.

10 Outline of Business flow of funds Tax return

Figure

1 Inflation, Current Overseas Balance and Output Responses to a One Per Cent Increase in Government Expenditure under a Fixed Exchange Rate using the Different Variants of the Core Model.

2 As for Figure 1, but with a Flexible Exchange Rate.

TABLE 1

SOME ILLUSTRATIVE BUDGET INDICATORS

(Deficit (-), Surplus (+))

March Year	Conventional Deficit Before Borrowing[1]	Adjusted Domestic Deficit Before Borrowing[2]	Cyclical Effect of the Adjusted Budget[3]	Adjusted Internal Balance (After Borrowing from the Non-Bank Private Sector)[4]
		($ million)		
1976	- 1,001.7	- 789.1	- 905.1	- 523.1
1977	- 506.1	- 199.2	- 253.3	+ 42.0
1978	- 694.4	- 360.7	- 159.6	— 25.7
1979	- 1,445.9	- 977.1	- 606.1	- 181.4
1980	- 1,026.9	- 410.2	+ 74.4	+ 178.8
1981	- 1,524.9	- 942.7	- 528.8	- 223.7
		(% of GDP)		
1972	-1.1	+0.4	-0.0	+1.2
1973	-2.6	-1.2	-2.0	+1.9
1974	-2.6	-0.3	-1.1	+2.4
1975	-3.9	-2.5	-3.9	-2.2
1976	-8.7	-6.9	-7.9	-4.6
1977	-3.7	-1.4	-1.7	+0.3
1978	-4.6	-2.4	-1.0	-0.2
1979	-8.3	-5.6	-3.5	-1.0
1980	-4.9	-2.0	+0.4	+0.9
1981	-6.4	-3.9	-2.2	-0.9

1 As per Budget Table II format.

2 Column 1 adjusted to exclude government overseas transactions.

3 As defined in N.Z. Planning Council, Planning Paper No. 5, *The Stabilisation Role of Fiscal Policy*, by R.S. Deane and R.G. Smith, with 1971/72 as the base year.

4 Column 2 less borrowing from the non-bank private sector.

TABLE 2

MONETARY AGGREGATES AND CONSUMERS' PRICE INDEX

Years Ending March	M1 Annual % Change	M3 Annual % Change	DC Annual % Change	CPI Annual % Change
1961	3.7	6.0	13.0	1.7
1962	-5.8	-0.1	0.6	3.0
1963	4.2	6.6	3.2	1.6
1964	7.7	8.9	8.9	2.5
1965	2.2	7.4	7.7	4.3
1966	-5.6	3.9	9.9	2.9
1967	0.4	5.1	4.2	4.3
1968	-2.9	3.7	3.9	4.9
1969	4.0	7.2	7.7	5.5
1970	7.2	9.1	8.6	4.7
1971	5.0	7.5	7.7	10.4
1972	13.1	10.3	5.1	8.4
1973	25.0	23.3	18.2	5.9
1974	14.4	15.6	21.3	10.3
1975	2.6	2.8	13.3	13.2
1976	19.8	17.0	18.5	17.2
1977	5.9	15.6	18.6	13.7
1978	1.8	13.3	11.3	14.6
1979	18.3	22.5	21.0	10.4
1980	5.5	15.7	14.1	18.4
1981	14.2 (P)	14.3 (P)	16.0 (P)	15.2

(P) Provisional.

Definitions

1 The money supply (M1) includes notes and coin held by the public, cheque account balances at savings banks, and demand deposits at trading banks (net of government deposits and the demand deposits of selected financial institutions at trading banks).

2 The money supply and selected liquid assets of the public (M3) includes the money supply as defined above together with all other demand, time and other deposits with the selected financial institutions (net of deposits of these institutions with each other).

3 Total domestic credit (DC) measures the total credit extended by the selected financial institutions to the domestic economy, including both private and government sectors.

4 The consumers' price index (CPI) measures changes in the general level of goods and services which households purchase.

TABLE 3

CHANGES IN THE MONEY SUPPLY AND SELECTED LIQUID ASSETS (M3)

($ million)

Year ended March	Changes in M3 Institution Claims on: Overseas Sector	Government	Private Sector	Other	Change in Money Supply	Total Money Supply (M3)	Percentage Change in Money Supply (M3)
1961	- 92.6	38.8	119.9	32.2	98.0	1,730.5	6.0
1962	7.8	19.8	- 26.9	17.0	- 1.1	1,729.4	-0.0
1963	63.2	55.3	- 0.8	- 1.0	114.2	1,843.6	6.6
1964	0.9	69.8	92.2	- 8.9	164.5	2,008.1	8.9
1965	- 18.5	52.3	78.1	14.2	149.3	2,157.4	7.4
1966	- 98.8	107.8	71.0	21.6	85.2	2,242.6	3.9
1967	- 44.9	61.9	19.4	13.2	113.9	2,356.5	5.1
1968	51.0	69.7	- 8.5	29.2	88.3	2,444.8	3.7
1969	27.4	67.6	106.9	10.9	176.8	2,621.6	7.2
1970	87.3	66.4	152.0	6.1	239.8	2,861.4	9.1
1971	- 3.8	44.6	179.8	- 7.9	216.0	3,077.4	7.5
1972	195.2	43.0	110.1	2.0	317.7	3,395.1	10.3
1973	212.6	249.7	281.8	49.4	789.8	4,184.9	23.3
1974	- 99.7	208.8	665.2	- 68.9	653.3	4,838.2	15.6
1975	-510.5	125.2	280.5	205.0	133.2	4,971.4	2.8
1976	-297.0	624.1	321.8	12.4	846.4	5,817.8	17.0
1977	- 90.1	262.5	851.4	30.7	907.7	7,625.5	15.6
1978	-105.5	253.6	537.2	32.9	895.5	7,621.0	13.3
1979	27.5	511.5	1,087.4	105.2	1,715.4	9,336.4	22.5
1980	- 26.1	224.1	1,170.5	- 6.7	1,463.6	10,800.0	15.7
1981(P)	139	321	1,341	-260	1,541	12,341	14.3

(P) Provisional

TABLE 4

GOVERNMENT FINANCING TRANSACTIONS

($ million)

Year ended March	Deficit Before Borrowing (1)	Financed By Domestic Borrowing from - Non-Banks (2)	Trading Banks (3)	Reserve Bank (4)	Net Overseas Borrowing & Investment (5)	Other Financial Transactions (6)	Cash Surplus/ Deficit(-) (7)
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
1980	1,026.9	599.8	145.0	166.1	327.7	-207.0	4.7
1981	1,524.9	748.6	- 31.6	-149.2	753.8	207.0	3.7

TABLE 5

COMPARISON OF DOMESTIC GROWTH, EXTERNAL BALANCE AND FISCAL BALANCE

Year ended March	Change in Real GDP %	Balance of Payments Current Account as % GDP	Adjusted[4] Fiscal Internal Surplus/Deficit as % GDP	Adjusted Fiscal Deficit before Borrowing as % GDP
PART I: PERIODS OF LARGE EXTERNAL DEFICITS				
1961	(+ 5.4)[3]	- 4.12	+ 2.9	- 0.3
1962	+ 3.6	- 3.91	+ 0.8	- 0.3
1963	+ 4.9	(- 1.48)	(- 1.9)	(- 1.5)
1966	(+ 4.0)[3]	- 4.64	+ 1.7	- 0.2
1967	+ 3.5	- 4.15	+ 1.5	- 0.5
1968	- 0.6	(- 2.50)	(+ 1.6)	(- 0.4)
1971	(+ 2.0)[3]	- 3.87	+ 1.9	+ 0.3
1972	+ 3.8	(- 0.23)	(+ 2.2)	(+ 0.2)
1975	(+ 6.2)[3]	-13.61	- 2.8	- 2.5
1976	- 0.5	- 8.84	- 2.3	- 6.9
1977	+ 2.1	- 5.99	- 0.6	- 1.4
1978	- 3.1	- 4.68	+ 4.6	- 2.4
1979	+ 0.1	- 2.68	- 0.5	- 5.6
1980	+ 2.9	- 3.81	+ 1.6	- 2.0
1981	+ 1.0	- 3.20	- 0.9	- 3.9
Average	1.6[1]	- 5.3[2]	+ 0.7[2]	- 2.1[2]
PART II: PERIODS WITH EXTERNAL SURPLUSES OR SMALL DEFICITS				
1964	(+ 4.8)	- 0.89	+ 2.9	- 0.9
1965	+ 5.3	- 0.99	+ 4.0	+ 0.2
1966	+ 4.0	(- 4.64)	(+ 1.7)	(- 0.2)
1969	(+ 1.4)	+ 0.54	+ 2.5	- 0.6
1970	+ 8.0	+ 0.23	+ 2.3	+ 0.2
1971	+ 2.0	(- 3.87)	(+ 1.9)	(+ 0.3)
1972	(+ 3.8)	- 0.23	+ 2.2	+ 0.2
1973	+ 4.8	+ 1.76	+ 4.4	- 1.2
1974	+ 6.4	(- 1.00)	(+ 1.1)	(- 0.3)
Average:	+ 5.1[1]	+ 0.1[2]	+ 3.1[2]	- 0.44[2]

1 Omitting first bracketed year of each period to allow for lags.

2 Omitting last bracketed year of each period, except 1980/81.

3 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.

4 Differs from column 4 of table 1 by extent of borrowing from trading banks, i.e. internal balance in this table 5 is adjusted deficit before borrowing less *all* private sector borrowing.

TABLE 6

CORE MODEL MULTIPLIERS IN RESPONSE TO REDUCED SIZE OF GOVERNMENT BUDGET

Derived from responses to a 5 per cent decrease in total real government expenditure offset by an approximately equivalent nominal reduction in personal income tax (about 10 per cent) so that the Government's budgetary deficit before borrowing remained steady.

Multipliers after:	1 Year	2 Years	3 Years	4 Years	5 Years
For:					
Consumer Prices	- .007	.006	.013	.016	.013
Private Real Output	- .022	.080	.099	.062	.054
Total Real Output	- .019	.062	.083	.054	.050
Private Employment	- .014	.003	.035	.051	.048
Money Supply (M3)	.056	.083	- .108	- .343	- .506
Current External Balance as a Proportion of Current Overseas Receipts	.212	.161	-2.064	-2.568	-1.939

Note: Percentage responses were divided by 5 when calculating multipliers. The results are based on simulations with the Reserve Bank's core model of the New Zealand economy.

TABLE 7

CORE MODEL SIMULATION OF SMOOTHED GOVERNMENT EXPENDITURE

	EXOGENOUS VARIABLE			DEVIATION FROM CONTROL					
	Real Non-Wage Government Expenditure $m.			Real Output		Consumer Prices	Private Employment		Overseas Current Account
	Control	Smoothed	Difference	%	$m.	%	%	000's	$m.
1974(4)	339.9	346.1	6.2	- .01	- 0.1	—	—	—	—
1975(1)	367.4	346.1	-21.3	- .7	- 8.9	—	-0.05	-0.3	2.3
1975(2)	394.3	346.2	-48.1	-2.6	-34.5	-0.03	-0.24	-1.5	10.0
1975(3)	393.2	346.4	-46.8	-3.8	-51.5	-0.12	-0.53	-3.2	23.8
1975(4)	378.2	346.9	-31.3	-2.2	-29.8	-0.31	-0.74	-4.6	46.3
1976(1)	315.0	347.2	32.2	0.1	1.1	-0.46	-0.84	-5.3	62.8
1976(2)	330.1	347.0	16.9	-1.1	-14.1	-0.40	-0.99	-6.1	78.0
1976(3)	328.7	346.7	18.0	-0.5	- 6.8	-0.23	-0.97	-6.0	62.6
1976(4)	272.5	346.6	74.1	2.6	34.1	-0.22	-0.75	-4.7	41.7
1977(1)	326.8	346.5	19.7	2.2	28.9	-0.15	-0.55	-3.5	21.2
1977(2)	314.5	345.9	31.4	1.9	24.7	0.11	-0.24	-1.5	- 20.8
1977(3)	329.5	345.7	16.2	3.5	43.2	0.21	0.17	1.1	- 60.0
1977(4)	385.3	345.6	-39.7	1.8	21.7	0.25	0.44	2.7	- 82.5
1978(1)	324.2	345.8	21.6	3.0	35.4	0.42	0.82	5.1	-104.8
1978(2)	314.9	345.9	31.0	3.4	40.1	0.39	1.10	6.8	-114.3
1978(3)	394.2	345.9	-48.3	0.5	6.2	0.47	1.21	7.3	-118.1
1978(4)	377.7	345.8	-31.9	-0.3	- 3.3	0.51	1.22	7.6	-112.9
1979(1)	357.5	345.5	-12.0	0.9	11.2	0.33	1.23	7.8	- 84.5
1979(2)	323.5	345.8	22.3	-0.1	- 0.7	0.20	1.08	6.8	- 57.1
1979(3)	355.9	345.7	-10.2	0.2	2.8	0.23	1.00	6.1	- 43.4

Note:
1. Government expenditure control and smooth totals both $6,923.3 million.
2. Real output overall change +0.4 per cent i.e. $99.7 million on control total of $25,216 million.
3. Employment (private sector) averages (000) 622.2 control, 622.9 simulation experiment.
4. Overseas current account overall deterioration $449.6 million.

TABLE 8

ALTERNATIVE TAX RATE STRUCTURES: APPLICATION TO 1975/76 DATA

Income	Average Tax Rate (From Income Tax Act Schedule)	Average Tax Rate After Rebates and Exemptions[1]	Proportional Tax Rate %	Differences % Points	Differences $m	Ratio of tax Change to tax Actually Assessed
0-2000	19.20	6.11	23.6	17.49	56.746	+186.9
-4000	22.49	14.33	23.6	9.27	81.995	+ 55.0
-6000[2]	26.95	19.09	23.6	4.51	86.718	+ 23.6
-8000	31.50	23.20	23.6	0.40	7.728	+ 1.7
-10000	34.81	27.22	23.6	- 3.62	-40.215	- 13.0
-12000	37.19	30.69	23.6	- 7.09	-35.697	- 23.1
-14000	39.02	33.51	23.6	- 9.91	-28.307	- 29.6
-16000	40.48	35.65	23.6	-12.05	-22.735	- 33.8
-18000	41.70	37.50	23.6	-13.90	-11.448	- 37.1
-20000	42.82	38.88	23.6	-15.28	-10.955	- 39.3
-30000	47.47	42.06	23.6	-18.46	-39.034	- 43.9
-40000	49.90	46.42	23.6	-22.82	-19.702	- 49.2
-60000	52.50	49.36	23.6	-25.76	-16.010	- 52.2
-80000	53.80	51.56	23.6	-27.96	- 5.205	- 54.2

1 **Tax assessed**
taxable income + exemptions (i.e. total declared income)

2 Average weekly earnings (including overtime) as at April 1976 were $112.93, which is equivalent to an annual income of $5,872.

TABLE 9

PERSONAL DIRECT EXPENDITURE TAX RETURN [1]
COMPUTATION OF ASSESSABLE EXPENDITURE

ADD

1. Personal Incomes
   - Wages
   - Salaries
   - Dividends
   - Interest
   - Rent
   - Profits
   - Royalties

2. Capital Receipts
   - Realisation of capital assets
   - Amount borrowed
   - Receipt of repayment of past loans
   - Reduction in money balances

3. Other
   - Inheritances
   - Gifts

Total Chargeable Items _____

DEDUCT

4. Non-consumption outgoings
   - Acquisition of assets
   - Amount lent
   - Repayment of past borrowings
   - Increase in money balances

Total Allowable Deductions _____

5. Chargeable Balance
(representing expenditure on consumption) _____

1 This 'return' is essentially that suggested by the Meade Committee (Meade, 1978).

TABLE 10

OUTLINE[1] OF BUSINESS FLOW OF FUNDS TAX[2] RETURN

INFLOWS		OUTFLOWS	
Sale of goods and services		Purchase of materials, wages and salaries, etc.	
Sale of fixed assets		Purchase of fixed assets	
Increase in borrowing		Decrease in borrowing	
Decrease in lending		Increase in lending	
Decrease in cash balance		Increase in cash balance	
Interest received		Interest paid	
Capital Account Flows		**Capital Account Flows**	
Shares issued		Reduction in share capital	
		Dividends/drawings	
Total Inflows		**Total Outflows**	

1 For a more detailed "return" see Meade 1978, p.231.

2 Tax could be calculated on either the balance of other than capital account flows, or alternatively on the balance of capital account flows, given that the two are, by way of the flow of funds identity, equal.

FIGURE 1: INFLATION, CURRENT BALANCE AND OUTPUT RESPONSES OVER A FOUR YEAR HORIZON TO A ONE PER CENT INCREASE IN REAL NON-WAGE GOVERNMENT EXPENDITURE UNDER A FIXED EXCHANGE RATE. DEVIATIONS FROM CONTROL. (INFLATION AND CURRENT BALANCE, RESPONSES ARE ADDITIVE. OUTPUT MULTIPLIERS ARE PROPORTIONATE).

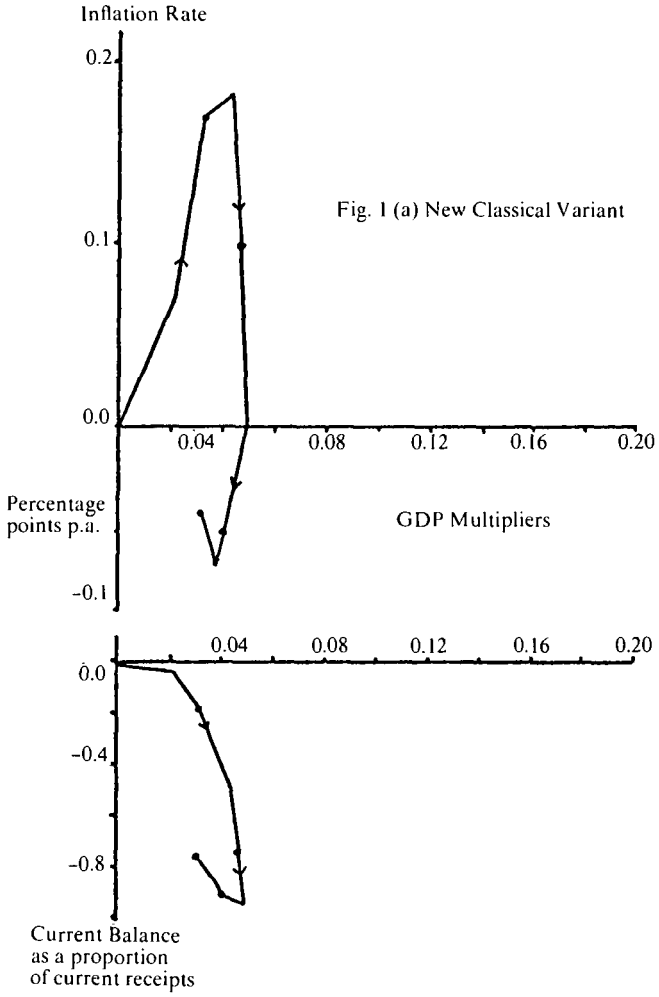

Fig. 1 (a) New Classical Variant

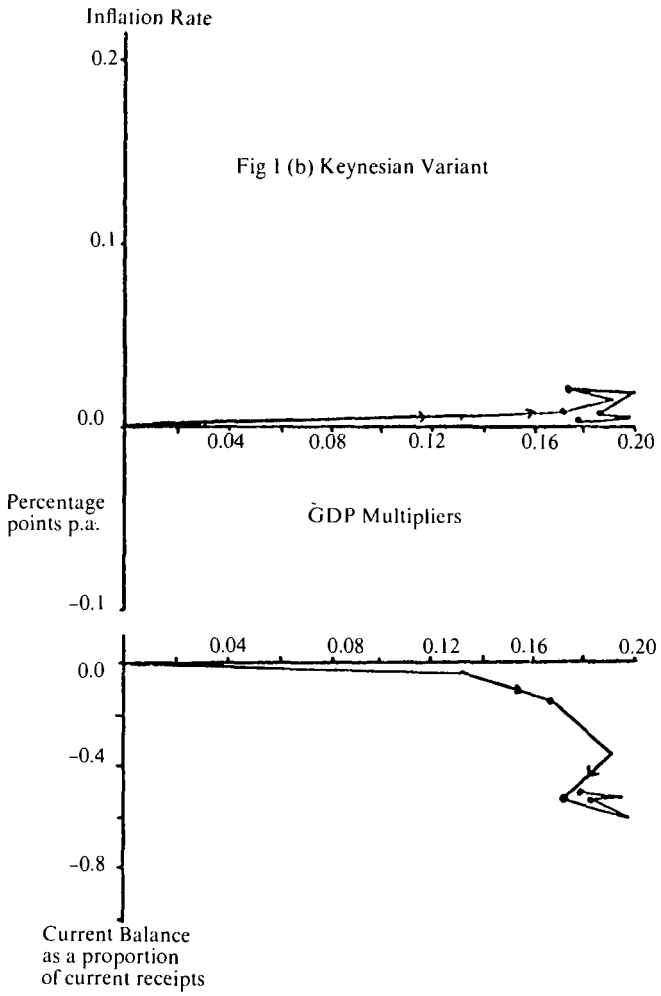

Fig 1 (b) Keynesian Variant

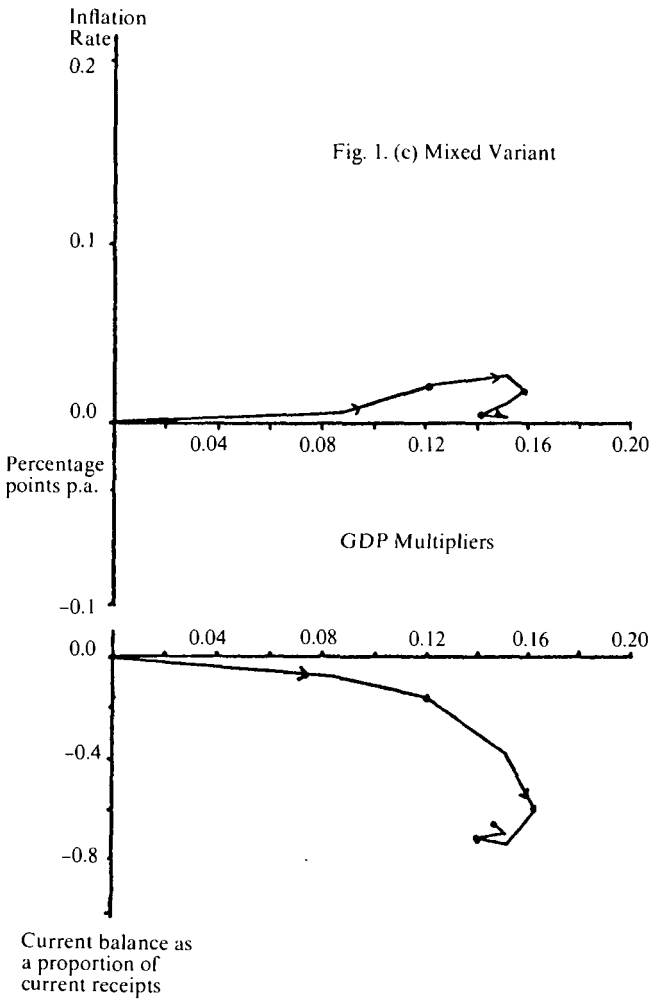

Fig. 1. (c) Mixed Variant

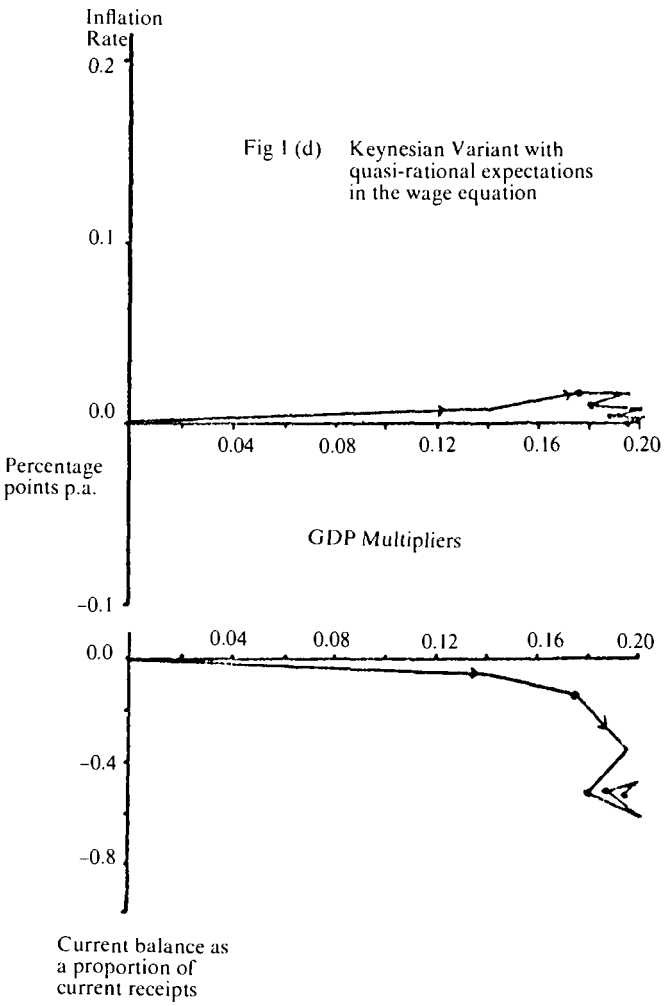

Fig 1 (d) Keynesian Variant with quasi-rational expectations in the wage equation

FIGURE 2: INFLATION, CURRENT BALANCE AND OUTPUT RESPONSES OVER A FOUR YEAR HORIZON TO A ONE PER CENT INCREASE IN REAL NON-WAGE GOVERNMENT EXPENDITURE UNDER A FLEXIBLE EXCHANGE RATE, DEVIATIONS FROM CONTROL. (INFLATION AND CURRENT BALANCE RESPONSES ARE ADDITIVE, OUTPUT MULTIPLIERS ARE PROPORTIONATE).

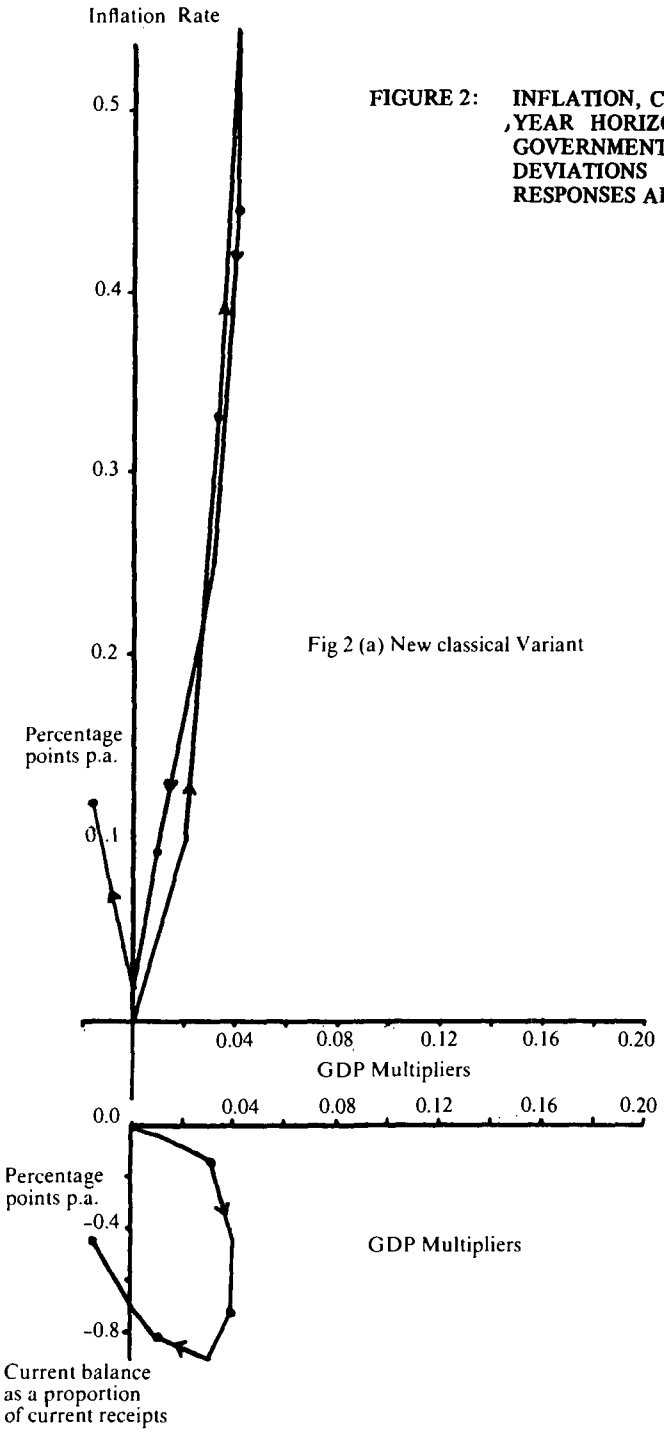

Fig 2 (a) New classical Variant

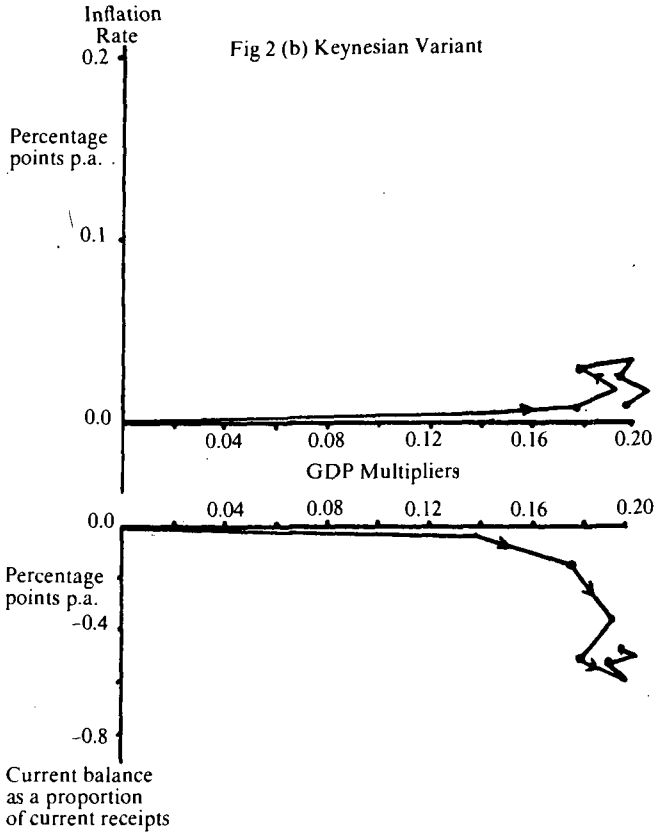

Fig 2 (b) Keynesian Variant

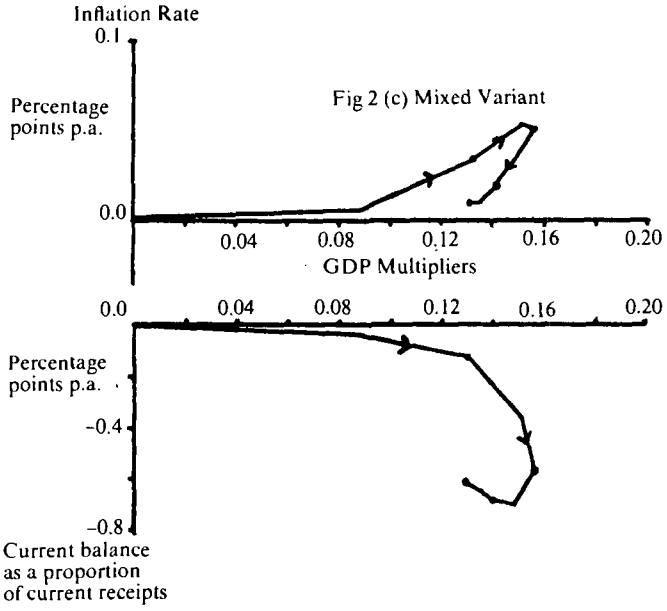

Fig 2 (c) Mixed Variant

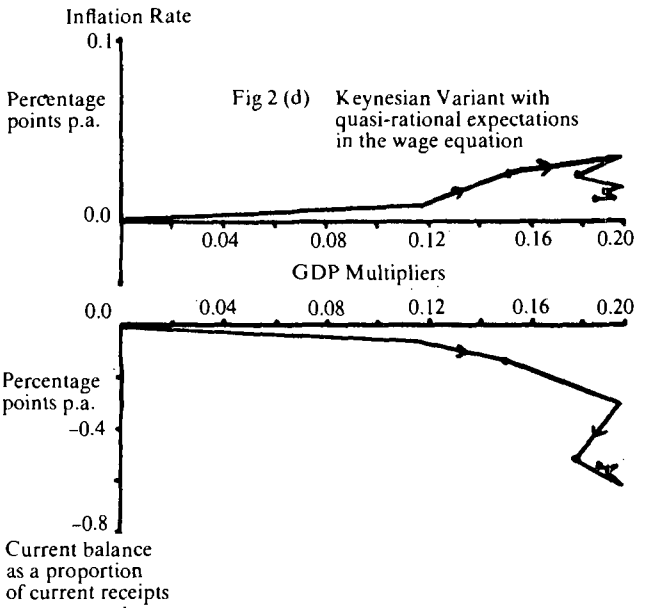

Fig 2 (d) Keynesian Variant with quasi-rational expectations in the wage equation

RESEARCH PAPERS

No. 1	TOWARDS A MODEL OF THE NEW ZEALAND ECONOMY September, 1971	*R.S. Deane*
No. 2	A MODEL OF THE NEW ZEALAND MONETARY SECTOR December, 1971	*R.S. Deane* *M.A. Lumsden*
No. 3	NEW DATA FOR ECONOMIC RESEARCH February, 1972	*R.S. Deane* *D. Grindell* *M.A. Lumsden*
No. 4	THE DATING OF POST WAR BUSINESS CYCLES IN NEW ZEALAND 1946-70 March 1972.	*E. Haywood*
No. 5	AN ECONOMIC APPROACH TO FORECASTING NEW ZEALAND'S IMPORTS May, 1972	*R.S. Deane* *M.A. Lumsden*
No. 6	CONSUMPTION EQUATIONS FOR NEW ZEALAND: TESTS OF SOME ALTERNATIVE HYPOTHESES August, 1972	*R.S. Deane* *D.E.A. Giles*
No. 7	QUARTERLY TAXATION RELATIONSHIPS FOR NEW ZEALAND October, 1972	*R.S. Deane* *D. Grindell*
No. 8	A NEW ZEALAND MODEL: STRUCTURE, POLICY USES, AND SOME SIMULATION RESULTS November, 1972	*R.S. Deane* *(Editor)*
No. 9	PAPERS ON MONETARY POLICY, CREDIT CREATION, ECONOMIC OBJECTIVES AND THE RESERVE BANK December, 1972	*R.S. Deane*
No. 10	ESSAYS ON ECONOMETRIC TOPICS: FROM THEORY TO PRACTICE January, 1973	*D.E.A. Giles*
No. 11	FINANCIAL ASSET BEHAVIOUR AND GOVERNMENT FINANCING TRANSACTIONS IN NEW ZEALAND April, 1973	*R.S. Deane* *D. Grindell* *A.C. Fenwick*
No. 12	THE DETERMINANTS OF QUARTERLY GROSS CAPITAL FORMATION IN NEW ZEALAND October, 1973	*R.S. Deane* *M.A. Lumsden*
No. 13	FURTHER DATA FOR ECONOMIC RESEARCH: SOME METHODS AND RESULTS FOR NEW ZEALAND June, 1974	*M.A. Lumsden* *(Editor)*
No. 14	TWO ESSAYS ON ECONOMETRIC FORECASTING WITH AN ECONOMETRIC MODEL August, 1974	*A.C. Fenwick* *J. Gallacher*
No. 15	NEW QUARTERLY DATA FOR STABILISATION PURPOSES December, 1974	*M.J. Pope* *D. Grindell*
No. 16	ESTIMATION OF AGGREGATE EMPLOYMENT AND PRODUCTION FUNCTIONS FOR NEW ZEALAND February, 1975	*J. Gallacher*
No. 17	INTEREST RATE POLICY: A NEW ZEALAND QUANDARY March, 1975	*R.S. Deane*
No. 18	AN ECONOMIC POLICY DILEMMA: THE CASE OF FOREIGN INVESTMENT IN NEW ZEALAND April, 1975	*R.S. Deane*
No. 19	THE NEW ZEALAND ECONOMY: MEASUREMENT OF ECONOMIC FLUCTUATIONS AND INDICATORS OF ECONOMIC ACTIVITY May, 1976	*E. Haywood* *C. Campbell*
No. 20	ECONOMETRIC MODEL FORECASTS IN NEW ZEALAND: A PRELIMINARY ASSESSMENT June, 1976	*P.J. Ledingham*
No. 21	INTERNATIONAL MONETARY REFORM: CONTENT AND PERSPECTIVE September, 1976	*R.S. Deane*
No. 22	THE RESERVE BANK'S MODEL OF THE NEW ZEALAND ECONOMY September, 1977	*J. Gallacher* *G.H.T. Morgan* *D.E.A. Giles P.B. Quinn*
No. 23	NEW ZEALAND MONETARY POLICY IN THE 1970's: ANALYSIS AND PERSPECTIVE December, 1977	*P.W.E. Nicholl*
No. 24	TOPICS IN ECONOMETRIC MODEL RESEARCH April, 1978	*G.H.T. Morgan* *(Editor)*
No. 25	A STATISTICAL BASIS FOR MEDIUM-TERM PROJECTIONS July, 1978	*C. Gillion* *M.J. O'Neil*
No. 26	AN INPUT-OUTPUT MODEL OF STRUCTURAL DEVELOPMENT November, 1978	*C. Gillion* *M.J. O'Neil*
No. 27	TRADE, INCOME SHARES, MIGRATION AND PUBLIC EXPENDITURE: FOUR CHOICES FOR THE MEDIUM-TERM November, 1978	*C. Gillion* *M.J. O'Neil*
No. 28	THE RESERVE BANK ECONOMETRIC MODEL: A REVISED STRUCTURE AND SOME POLICY SIMULATIONS March, 1979	*G.H. Spencer* *(Editor)*
No. 29	EXPERIMENTS WITH A CORE MODEL OF THE NEW ZEALAND ECONOMY March, 1980	*G.H. Spencer* *(Editor)*
No. 30	MONETARY TARGETS: A COMPARISON OF SOME ALTERNATIVE AGGREGATES	*G.H. Spencer*
No. 31	SUPPLY BEHAVIOUR IN NEW ZEALAND'S EXPORT INDUSTRIES February, 1981	*A.J. Tweedie* *G.H. Spencer*
No. 32	CONSOLIDATED NATIONAL ACCOUNTS FOR NEW ZEALAND ON AN SNA BASIS May, 1981	*D. Grindell* *(Editor)*
No. 33	A MODEL OF THE NEW ZEALAND LABOUR MARKET July, 1981	*A. Grimes*
No. 34	ESSAY ON FISCAL POLICY AND TAXATION REFORM November, 1981	*R.S. Deane* *B.D. White*