

Chapter 7

Fiscal Policy

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1. Introduction

When it was elected in 1984, the Labour government inherited a fiscal deficit of 6.5 percent of GDP. Over the previous decade the increase in net public debt had been dramatic, climbing from 5 percent to 32 percent of GDP. Although the incoming government gave high priority to the problem of restoring stability to the fiscal accounts, almost a decade was to pass before the net debt ratio began to fall from its peak of 52 percent in 1991-92. The fiscal surplus recorded in 1993-94 was the first for 15 years.

The transition to fiscal balance was, therefore, much slower than expected. One of the objectives of this chapter is to explain why this was so. An outline of the argument is as follows. In the prolonged recession of the latter half of the 1980s, a number of politically unpopular expenditure decisions could be postponed while implementing other fiscal reforms. These reforms were extensive, and were concerned primarily with the re-organisation of government activities and changes to the structure of taxation. Only when these reforms were in place did the incoming National government decide, in 1991, to address longer term problems inherent in the growth of the public debt ratio. The resulting expenditure cuts, combined with the cyclical recovery in activity in the early 1990s, resulted in a fiscal surplus in 1993-94. At the same time, significant changes were made to both the policy process and fiscal reporting requirements with the intention of entrenching a longer term focus for policymakers.

The remainder of the chapter is organised on chronological lines. We begin by outlining the reasons for the rapid deterioration of the fiscal position in the early

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1980s. Foreign price disturbances at the time of the first oil price shock provide a convenient starting point. After rising in the early 1970s, between June 1973 and June 1975, the terms of trade fell by 43 percent. From a longer run perspective, the average value of the terms of trade in the decade to 1983-4 was 21 percent lower than in the decade to 1973-4. The second section of the chapter sets fiscal policy in the context of this long run decline in the terms of trade.

The main argument of the chapter is developed in the remaining sections and their ordering reflects the sequence in which fiscal reforms were undertaken. Section 3 analyses the effects of tax reform, the first major element being the flattening of the rate scale for personal income taxes associated with introduction of a value-added tax in September 1986. Other important reforms include the move from a classical company tax system to full dividend imputation and the introduction of a fringe benefits tax. The expenditure side of the budget is the focus of Section 4. There it emerges that aggregate expenditure on core government areas, such as health and education, were relatively unaffected by the reform process in the 1980s. In addition, both social welfare and interest payments continued to grow through the 1980s; the former because of rapid growth in the number of beneficiaries, with growth in the latter reflecting a rising level of debt and the accompanying interest rates.

Section 5 deals with fiscal balances and the evolution of debt, while Section 6 analyses the way in which a longer term focus for fiscal policy has been entrenched in legislation, the instrument being the Fiscal Responsibility Act 1994. The passage of this Act does not, presumably, signal the end of changes in New Zealand fiscal policy. But the Act does mark the end of a decade in which many of the reforms envisaged by the Labour government of 1984 were carried through. A brief assessment concludes.

2. Preconditions

Two themes characterise the development of New Zealand's macroeconomic policy in the decade prior to 1983-4. This section outlines their implications for fiscal policy. One theme was the desire to insulate the economy from the effects of fluctuations in world commodity prices. Rather than allow relative price adjustments, such as changes in the exchange rate to moderate these effects, a number of fiscal interventions were undertaken. The second development emphasised in this section is the rapid expansion of income support programmes.

Fiscal Policy and Commodity Price Fluctuations

Like other exporters of a small range of primary commodities, export-price fluctuations have long been a source of disturbances in New Zealand. Unlike

previous experience, however, the sharp cycle in export prices in the early 1970s was followed quickly by the import price effects of the first oil shock. The collapse of the terms of trade implied a loss of real income (calculated using the Geary 1961 formula) of 8 percent over the period 1973 to 1977. As detailed in Wells (1987), several policy responses in the following decade can be interpreted as an attempt to reduce the effects of these terms of trade fluctuations.

First, there was increasing use of conventional fiscal policy as an instrument of demand management. However, rather than stabilising GDP, Deane and Smith (1980) make a persuasive argument that the close alignment of policy with the electoral cycle meant that the variance of output was *increased* by the active use of fiscal policy. Secondly, several farm-price stabilisation schemes were introduced. After a short time, these were biased towards income support schemes as intervention prices became increasingly out of line with long run price trends. Thirdly, a number of large import substitution projects based on the Maui natural gas reserves were either sponsored (in the sense that the taxpayer bore residual risk) or partially financed by government equity.

Of these measures, only the first had a direct impact on the conventionally measured fiscal balance. Farm price support schemes had a monetary, rather than fiscal, impact. This was because their financing involved government owned marketing agencies, such as the Dairy Board, borrowing from the Reserve Bank at concessionary rates. Many of the import substitution projects were privately financed, although with government guarantees of various kinds. An indication of the size of these 'off account' activities is provided by the decision, in 1986, to write down some of the relevant assets to market value. The amount then written off was \$7.2 billion - more than 14 percent of nominal GDP in that year.

Social Welfare Expenditures

New Zealand has a long history of government involvement in income support. An early example was the Old Age Pensions Act of 1898 which established a means tested pension for persons over 65 years of age. Means tested widows' pensions and family allowances followed in 1911 and 1926, and a national health service was introduced in 1938. In 1970, however, government payments for income support (including unemployment benefits) were much lower than in most OECD countries, amounting to five percent of nominal GDP. This reflected the lack of universality of most social welfare payments and very low unemployment rates.

This situation changed rapidly during the 1970s. The introduction of the Domestic Purposes Benefit in 1973 was followed, in 1974, by an Accident Compensation Scheme and in 1977 by National Superannuation. The Domestic Purposes Benefit is a means tested benefit for single parents and women living alone. The number of beneficiaries (some of whom had previously been in receipt

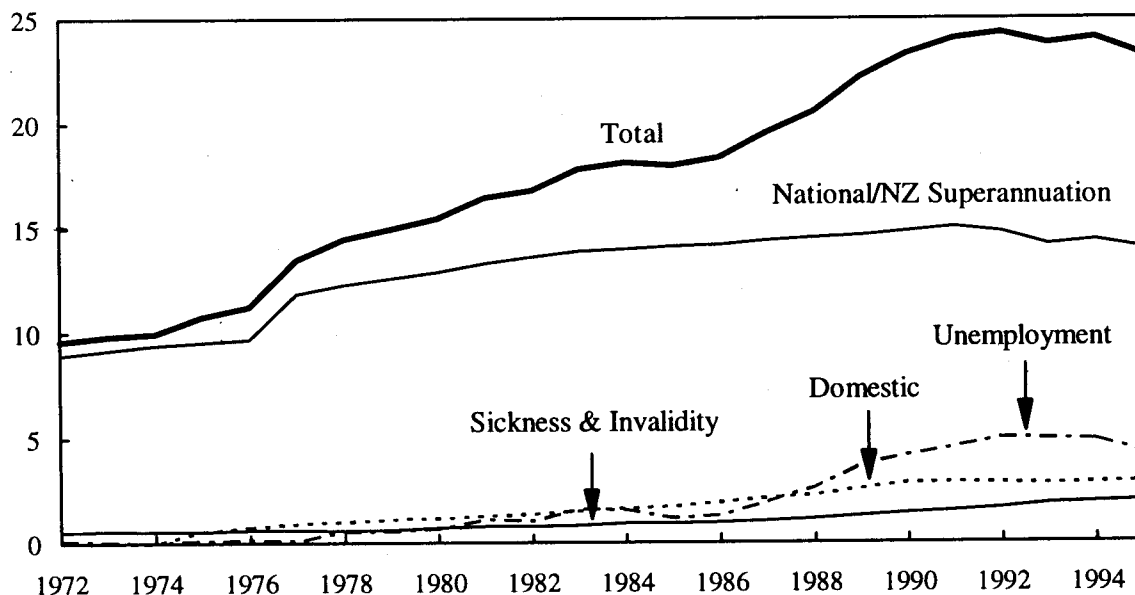
of other benefits) has grown from 17,000 in 1974 to 53,000 in 1984, and to 100,000 a decade later. Accident Compensation is an earnings related scheme giving universal coverage and is intended to be self funding by means of levies on employers. As an employer, the government is also subject to these levies.

In terms of its impact on government expenditures, the most important of the three initiatives was National Superannuation, which emerged from an electoral 'bidding war' between the Labour and National parties in the 1975 election. As a non means-tested, but taxable, pension scheme for all persons over 60 years of age (with the married couple rate set at 80 percent of the average ordinary time weekly wage), it expanded the coverage and increased substantially the benefits previously available under superannuation and age benefits.

The number of superannuitants grew from 372,000 in 1977 to 450,000 in 1984 and to 506,000 in 1991. The influence of ageing is shown by expressing these data as a percentage of the population (corresponding figures are 12 percent, 14 percent and 15 percent) or the electorate (17 percent, 20 percent and 21.5 percent).

Stephens (1992) shows that the real rates of benefits paid under each of these income support schemes did not rise during the 1970s. Rather, it was the growing number of beneficiaries which substantially increased government outlays on income support, rising to nearly 12 per cent of nominal GDP in 1983-84. Relevant data are illustrated in Figure 1.

Figure 1. Income Support Beneficiaries in New Zealand 1972-95
Main Types, Percent of Population



Sources: Statistics New Zealand, *Social Database*, Tables 8.06 and 8.07 and Annual Reports of the Department of Social Welfare.

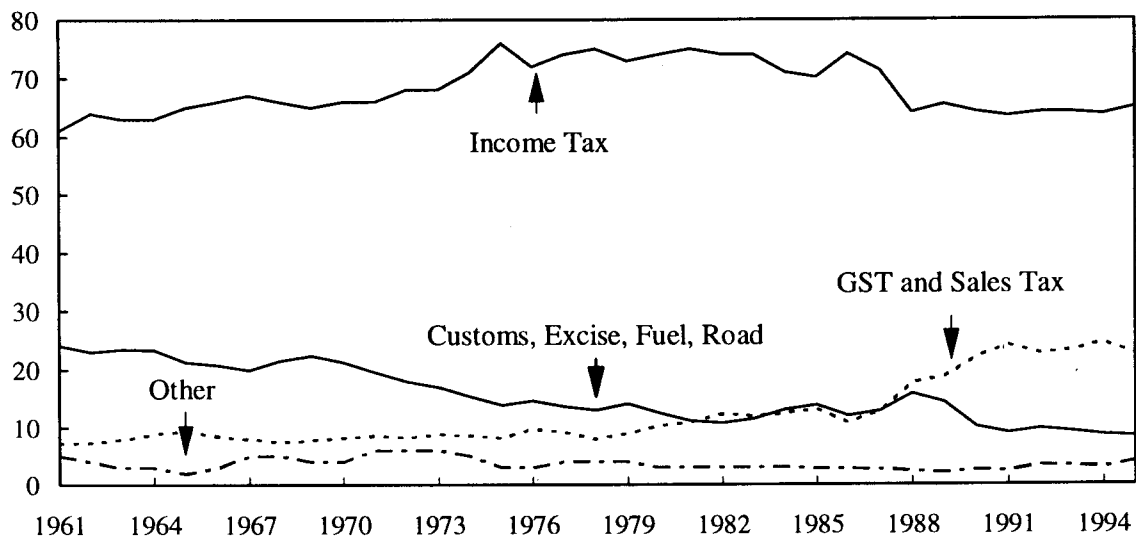
3. Tax Reform

The main objectives of tax reform since 1984 have been to broaden the base, simplify the system and flatten the rate scale. Results have been mixed. While the base is now broader than before, and the system is simpler for many taxpayers, there has been only limited success in reducing average and marginal effective tax rates. As a proportion of total tax collections, income taxes have been brought back to levels of the early 1960s in New Zealand, but are still much higher than in many European countries.

Broadening the Base

In 1984, income tax was the predominant source of tax revenue. Trends in the composition of tax revenue are given in Figure 2, which shows that reliance on income tax revenue had been increasing steadily since the early 1960s. Almost all of this revenue was derived from personal income tax. The Task Force on Tax Reform (1982) shows that, in an arithmetic sense, reliance on personal income tax arose from the interaction of high rates of inflation and the failure to index components of the system, such as nominal rate scales, rebates and exemptions.

Figure 2. Composition of Central Government Revenue 1961-95
Percent of Total Tax Revenue



Source: IMF, *Government Financial Statistics*, Table A.

As Table 1 shows, the percentage of revenue derived from this source (60 percent) was high by international standards, with the implication that many taxpayers faced high average and marginal income tax rates. Data from Stephens

(1987) are revealing. For a single person on average earnings, the average tax rate in early 1986 was 29.1 percent, while for a single person on three times average earnings, it was 47.9 percent. The top marginal rate of 66 percent was reached at an income of only 1.9 times average earnings.

Table 1. Individual Income Tax for Selected Countries and Years
Percentage of Total Tax or GDP

	1983-84		Various Years	
	Total Tax	GDP	Total Tax	GDP
New Zealand	60.0	19.2	51.3	15.2 (1993-94)
Australia	55.3	-	54.2 (1990-91)	-
Canada	63.0	-	53.9 (1992-93)	-
France	25.1	-	30.2 (1989-90)	-
United States	52.2	-	54.2 (1991)	-

Note: Data for Canada, France and the USA refer to the sum of individual income taxes and employee contributions to social security.

Source: IMF *Government Financial Statistics*, Table A.

Wholesale sales tax and import duties were the most important indirect taxes in the early 1980s. The former incorporated a complex array of rates and exemptions, variation of which was a useful form of sectional patronage for politicians. Although import quotas, which were the main protective instrument prior to the mid 1980s, have been replaced by tariffs, subsequent reduction in tariff rates means that import duties remain a relatively small source of revenue.

An important step in broadening the tax base took place in October 1986 with the replacement of the Wholesale Sales Tax by a comprehensive single rate value added tax, of 10 percent, known as the Goods and Services Tax (GST). At the same time, the nominal rate scale for income taxes was restructured. Table 2 shows tax schedules operative since 1984. It is estimated that allowing for measures to compensate social welfare beneficiaries, the effect of the tax switch was to increase the fiscal deficit in 1986-7 by about \$750 million. The actual outcome was a deficit of \$1831 million. The short run macroeconomic effects of the switch include a strong induced cycle in consumption expenditures. As Figure 3 shows, in 1986:3, for example, consumption expenditure grew at an annual rate of 13 percent as consumers brought forward expenditures. In some cases this was irrational, since the prices of some consumer durables fell with the substitution of the previous wholesale sales taxes by GST.

Although short term movements in monetary aggregates are difficult to interpret because of the deregulation in financial markets, it appears that this expenditure boom was accommodated by easy monetary policy, as bank lending rates fell over the course of the year leading up to the tax switch. In the period

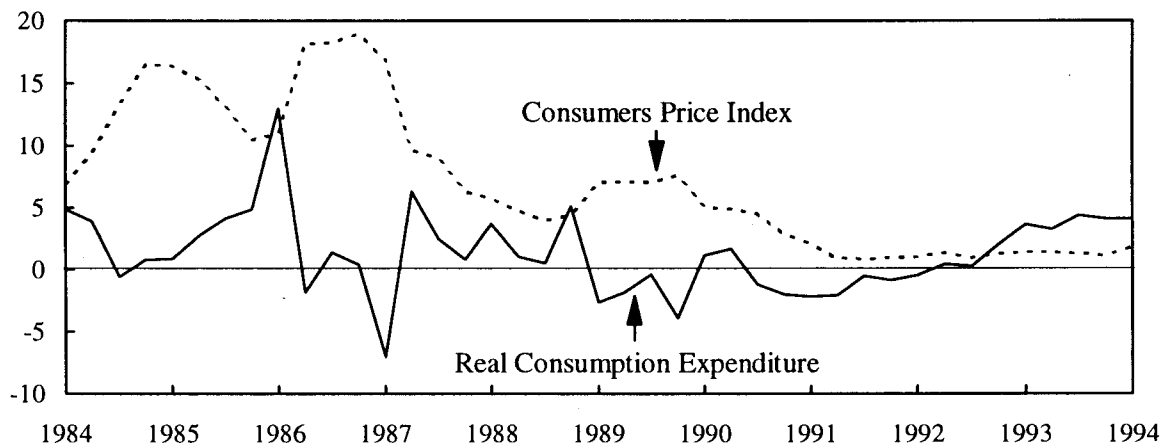
leading up to the tax switch, these developments were associated with rapid inflation in money wages. As Figure 4 shows, nominal hourly wages in the private sector grew by 19 percent in the year to September 1986, with much higher rates of increase recorded in the government sector.

Table 2. Nominal Tax Schedules in New Zealand
From October 1982, 1986 and 1988

From 1 October 1982		From 1 October 1986		From 1 October 1988	
Annual Taxable		Annual Taxable		Annual Taxable	
Income	(%)	Income	(%)	Income	(%)
< \$6,000	20	< \$9,500	15	< \$30,875	24
6,001-24,000	31	9,501-30,000	30	> \$30,875	33
24,001-30,000	45.1	> \$30,000	48		
30,001-38,000	56.1				
> \$38,001	66.0				
<i>Average Annual Earnings for a Wage and Salary Earner</i>					
1982:3		1986:3		1988:3	
\$13,700		\$20,000		\$24,000	
<i>Company Tax Rate</i>					
45%		48%		33%	
				28% (from 1 April 1989)	
<i>GST Rate</i>					
—		10%		12.5% (from 1 July 1989)	

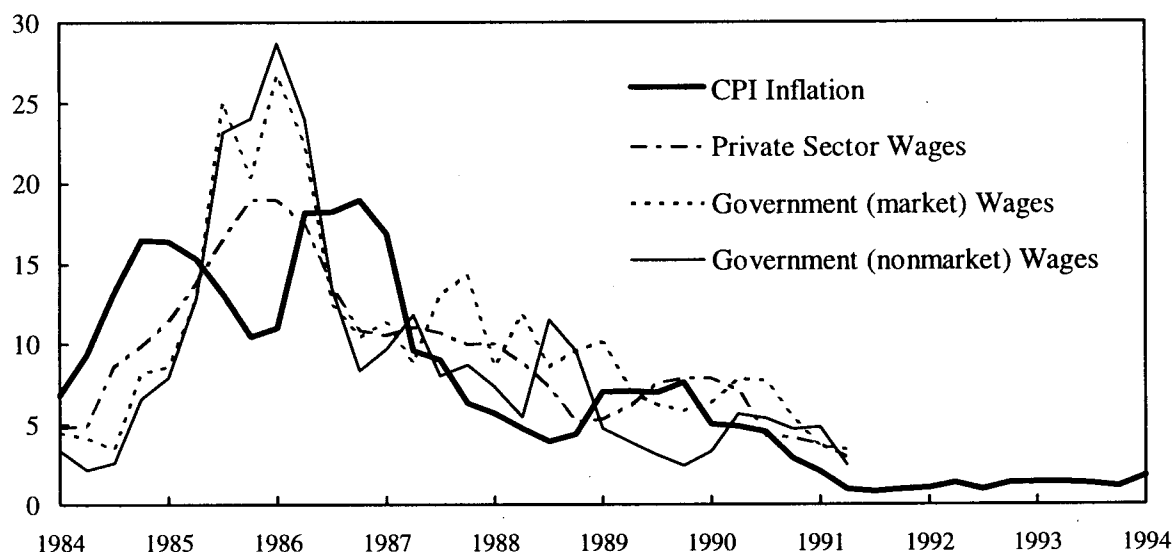
Sources: Average earnings for 1982:3 and 1986:3: estimated by author from the Reserve Bank's average hourly earnings series (assuming 36.67 hours per week and 52 weeks per year). Average earnings for 1988:3: estimated from Average Ordinary Time Weekly Earnings (both sexes), Statistics New Zealand, *Social Database*. Tax schedules and rates: *Budget Speeches*.

Figure 3. Private Consumption and Consumer Prices 1984-94
September Years, Annual Percentage Changes



Source: Statistics New Zealand, Economics Database.

Figure 4. Wages and Consumer Prices 1984-94
September Years, Annual Percentage Changes



Note: 'Market' refers to wages paid in government trading enterprises and trading activities in government departments. 'Nonmarket' refers to the remainder of government employment.
Sources: Hourly wages: Reserve Bank of New Zealand, *Model XII Database*. CPI inflation: Statistics New Zealand.

The tax switch took place in 1986:4, resulting in consumer prices 18.2 percent higher than a year earlier. Wells and Fraser (1986), using input-output tables, estimated the impact effect of the removal of wholesale sales taxes and the imposition of GST to be 6.6 percent. Taking into account macro feedback effects, they estimated the total price-level effect of the tax switch to be a rise of 12 to 14 percent, spread over a number of years. The GST rate was raised further (to 12.5 percent) in July 1989. Figure 3 suggests that, as in the earlier case, some consumption expenditures were brought forward. Again, the impact effect on the price level appears to have been accommodated by monetary policy, but in this case—there was no accommodation of macro feedback effects on inflation.

Other measures have been taken to broaden the income tax base. In April 1985, a Fringe Benefits Tax was introduced which made employer provided benefits, such as company cars and low interest loans, taxable. A resident withholding tax on interest and dividend income was introduced in October 1989, along with a number of other domestic and international tax measures designed to close tax loopholes. One effect of these base-broadening measures, has been to reduce the importance of income taxes in total tax collections, although the income tax proportion is still higher than in the early 1960s.

Three partial indicators also suggest some success in effective base broadening, by reducing evasion and avoidance. First, the introduction of GST unearthed a surprising number of small businesses who had not previously paid tax.

Secondly, the proportion of income tax collected from source deductions, used here as an indicator of the share of income tax paid by wage and salary earners, has fallen from 65 percent in 1983-4 to 39 percent in 1994-5. Conversely, the tax share of companies and the self employed, areas with greater scope for tax minimisation, has risen. This comparison is little affected by cyclical variations in profit shares, since activity was at cyclical highs in both 1983-4 and 1994-5. It also runs counter to the effects of the imputation system introduced in April 1988, which integrates the company and personal income tax systems. (Since the majority of dividends are tax paid in the hands of recipients, imputation reduces the proportion of non PAYE income tax). Thirdly, the effective company tax rate has risen significantly. In 1983-4, the ratio of company tax receipts to operating surplus was less than 10 percent. In 1994-5, the ratio had risen to 22 percent.

Flattening the Rate Scale and Efficiency

As far as aggregate tax collections are concerned, base-broadening and the associated reduction in nominal rate scales have had little effect on the tax share of nominal GDP. Comparisons over the post reform period are complicated by the fact that government departments now pay GST and there has been some substitution of explicit expenditure for what were previously tax rebates. Using *Government Financial Statistics (GFS)* data, the tax share of GDP has risen from 30 percent in 1983-4 to 33.8 percent in 1994-5. However, making allowance for the effects just mentioned, and the strength of the cyclical recovery in the latter period, it is likely that there has been only a small increase in the underlying tax share.

Have the tax reforms secured significant efficiency gains? Available evidence is ambiguous on this issue. Diewert and Lawrence (1993, 1995), for instance, argue that the efficiency cost of taxation actually rose significantly during the reform period. Their analysis is based on a static, market clearing, general equilibrium model which is used to provide estimates of the marginal excess burden of various forms of taxation. Marginal excess burdens measure the deadweight costs arising from tax-induced changes in economic behaviour, expressed as costs per dollar of tax revenue. Among other things, they find that the marginal excess burden of consumption tax rose from 7.1 percent in 1984 to 13.7 percent in 1991. The increase in the burden for the tax on labour is larger, rising from 8 percent to 18.3 percent. A number of caveats apply, however. For simplicity, the model assumes that marginal and average tax rates are equal. This has important implications, since although nominal marginal tax rates on labour have fallen as suggested in Table 2, the average rate has risen. This rise is important in delivering the Diewert and Lawrence result that marginal excess burdens have risen.

In a partial equilibrium analysis of the labour market, McKeown and Woodfield (1995) confirm the conclusion that marginal excess burdens rose after

the 1986 tax reforms, although their estimates of the level of marginal excess burdens are much higher than those obtained by Diewert and Lawrence. As noted earlier by Diewert and Lawrence, however, rising average tax rates are an important ingredient in the finding of rising costs of taxation.

Also important for Diewert and Lawrence's result is that with the liberalisation of the New Zealand economy, many of the estimated production and consumption elasticities in the model have increased, increasing excess burdens. Here the market clearing assumption plays a role. Potentially troublesome is the fact that the unemployment rate rose from 0.5 percent to 11 percent over the 15 year sample period for the model. Both Diewert and Lawrence and McKeown and Woodfield interpret this as a voluntary increase in demand for leisure. If involuntary unemployment is allowed, then, as Freebairn (1995) shows, what is relevant is not the elasticity of labour supply but the responsiveness of the non market clearing wage to changes in the tax rate. Since the rise in unemployment, and more latterly the introduction of the Employment Contracts Act in 1991, reduced the bargaining power of workers, it might be expected that the wage-tax elasticity has declined in recent times, tending to reduce marginal excess burdens.

An alternative, although partial, approach to assessing the efficiency of the tax structure is to examine tax rates on income earned in different activities, or the marginal rates faced by different classes of individuals. As Bevin (1985) shows, the pre reform tax system led to significant distortions to incentives in different industries. Because of a variety of tax loopholes (such as the non taxation of capital gains, explicit investment incentives, different tax treatment of business inputs and supplementary minimum prices in agriculture), effective company tax rates differed widely between industries, ranging from minus 50 percent for forestry to 39 percent for retail trade. Although no comparable recent estimates are available, there is little doubt that almost all these distortions have now been significantly reduced, if not removed.

Turning to the effect of the tax and welfare system on labour supply incentives, a more complex picture emerges. As indicated in Table 2, nominal tax rates have been reduced significantly and the removal of almost all personal tax-deductible expenditures has greatly simplified the personal income tax system. But the attempt to narrowly target social welfare expenditures has resulted in a multiplicity of effective marginal tax rates, some of which are very high. Stephens (1993) provides a comprehensive review of changes to the tax and benefit structure, and argues that

The achievement of vertical equity objectives by the targeting, first of social security, and then of all social spending, results in a confusing array of effective marginal tax rates, as the individual-based tax system has to be blended with the family-based social security system. Simplicity disappears,

and with it reappear the problems of tax avoidance and evasion, work incentive effects, compliance costs and low take-up rates of benefits. (Stephens 1993, p.237).

For example, effective marginal tax rates (EMTRs) facing a married couple with two dependent children are shown in Table 3. Data in the second and third columns show that the operation of the guaranteed minimum family income implies an EMTR of 100 percent over low income ranges. Also, the EMTR facing a family in receipt of annual average wage and salary earnings is at least 46 percent in each of the three periods. Stephens (1993) and Compton and Euler (1992) provide many other examples of family types with high EMTRs and complex effective rate structures.

Table 3. Effective Marginal Tax Rates, 1982, 1986 and 1988
Married Couple, One Working, Two Children

1982		1986		1988	
Annual Taxable Income (\$)	Tax Rate (%)	Annual Taxable Income (\$)	Tax Rate (%)	Annual Taxable Income (\$)	Tax Rate (%)
\$0-6,658	0	0-13,416	100.0	\$0-17,685	100.0
6,659-9,800	31.0	13,417-14,000	30.0	17,686-27,000	46.0
9,801-19,160	46.0	14,001-29,022	48.0	27,001-30,313	58.0
19,161-24,000	31.0	29,023-30,000	30.0	30,314-30,875	28.0
24,001-30,000	45.1	\$30,001+	48.0	\$30,876+	33.0
30,001-38,000	56.1				
\$38,001+	66.0				
<i>Average Annual Earnings for a Wage and Salary Worker</i>					
1982:3		1986:3		1988:3	
\$13,700		\$20,000		\$24,000	

Source: Stephens (1993, p.207).

An alternative approach to describing potential work disincentives is the replacement rate: the ratio of income while receiving benefits (and not working) relative to income received while working the standard week. Rebstock and Smith (1992) calculate replacement rates for four family types with a single full time earner in receipt of the economy-wide average annual wage. In all cases, replacement rates have fallen from the late 1980s to 1991-92, although rates are still high by international standards. For instance, referring again to the family type illustrated in Table 3 (married couple, one working, two children) the replacement rate fell from 78 percent in 1987-88 to 66.1 percent in 1991-92. Lack of available data prevented Rebstock and Smith from calculating

replacement ratios on the more appropriate assumption that income earners receive the average wage specific to family types. Maloney (1993) conjectures that an increase in wage dispersion in the post reform period could, for low income families, reverse the finding that replacement ratios have fallen.

Overall, available evidence suggests that although the tax base has been broadened, and the nominal tax rate scale has been simplified and flattened, adverse efficiency effects, particularly in relation to the personal tax and benefit structure, are still significant.

4. Expenditure Policy

At first glance, the rapid pace of tax reform seems difficult to reconcile with the evident lack of progress in restricting the growth of government outlays and, as a consequence, government debt from 1984 onwards. It may be argued that it was simply not possible to do everything at once and that the breadth of reform in other areas precluded an early and thorough expenditure review. In the following subsections, we advance a number of complementary and more convincing explanations for this seeming imbalance.

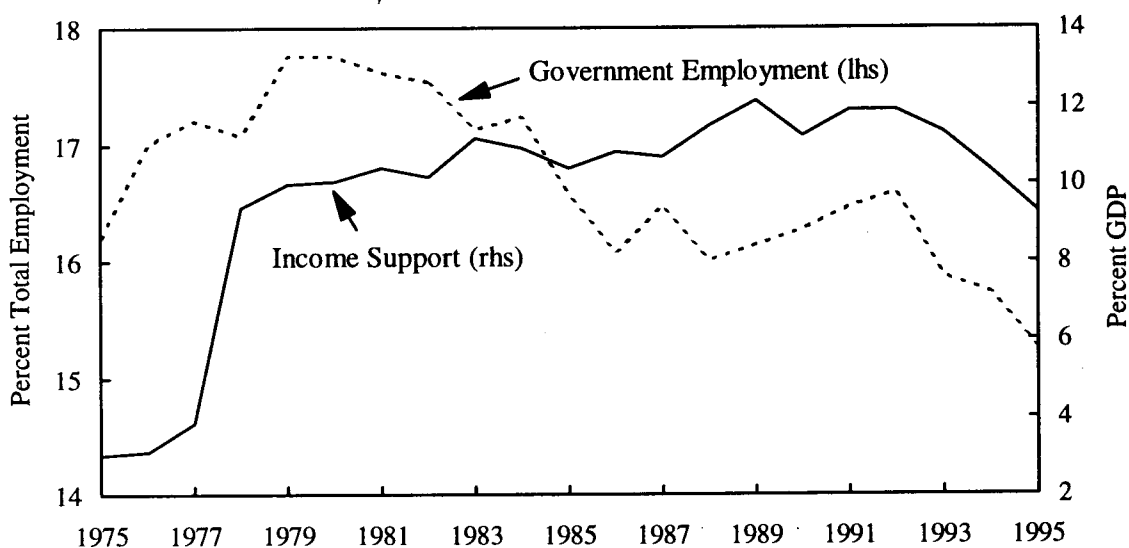
The Electoral Politics of Reform

Early in the process, New Zealand's deregulation and reform can be characterised in two ways. On the one hand, the Labour Government implemented a number of important reforms which reversed interventions made by the previous National Government. While there were sound economic arguments for these reversals, the interventions had tended to favour National party voters; the supplementary minimum prices scheme for farm output provides an example. Instances of this kind offered the opportunity for removal of distortions without giving too much offence to Labour's traditional electoral base. On the other hand, there were reforms which may not have been to the taste of the left wing of the government. New Zealand's tariff protection, for example, had traditionally favoured low wage industries. But Sieper and Wells's (1991) conjecture that there was an implicit accord between factions of the cabinet allowing reformist ministers scope to implement radical change in financial markets, tariff and tax policy and government owned enterprises, while maintaining expenditure on core areas of health, education and social welfare.

Data for real government consumption are consistent with this interpretation. In 1984, government consumption comprised 16.5 percent of real GDP and this proportion did not fall throughout the 1980s. In an arithmetic sense, the observed constancy results from an increase in the relative price of labour in the government sector, with some contraction in employment being offset by higher

wages in the government sector. Data illustrated in Figure 5 show that from 1984 onwards, there was a relative contraction in general government employment from 17.2 percent of the workforce in 1983 to 16.2 percent in 1988. In absolute terms, this represents a fall from 252,000 to 239,000. But, as Figure 3 showed, the government agreed to large wage increases for its employees. In part this reflected a flow-on effect of large salary increases for senior office holders determined by the Higher Salaries Commission. In the year to September 1986, for example, the wage rate in the government nonmarket sector was 28 percent higher than the previous year.

Figure 5. Components of Government Activity 1974-95
Employment and Income Support



Sources: Income Support Payments: Statistics New Zealand, *Social Database*, Tables 8.08 and 8.09. General Government Employment: *OECD Economic Outlook Database*.

The other important constituency for the Labour Government was the large number of persons in receipt of income support payments. In 1984, 18 percent of the population (approximately 25 percent of the electorate) were beneficiaries of income support. This proportion grew through the 1980s in response to an ageing population, rising unemployment and a fall in the number of two-parent families.

The election of October 1990 replaced Labour by a National government determined on continuing reform. Priorities changed. Almost immediately an 'Economic and Social Initiative' was announced which cut welfare benefit rates and tightened eligibility rules. Superannuation rates were frozen by foregoing the normal indexation increase and the age of eligibility was phased to increase from 60 to 65. Government consumption was also constrained, falling from 16.8 percent of GDP in 1990 to 15.5 percent in 1994.

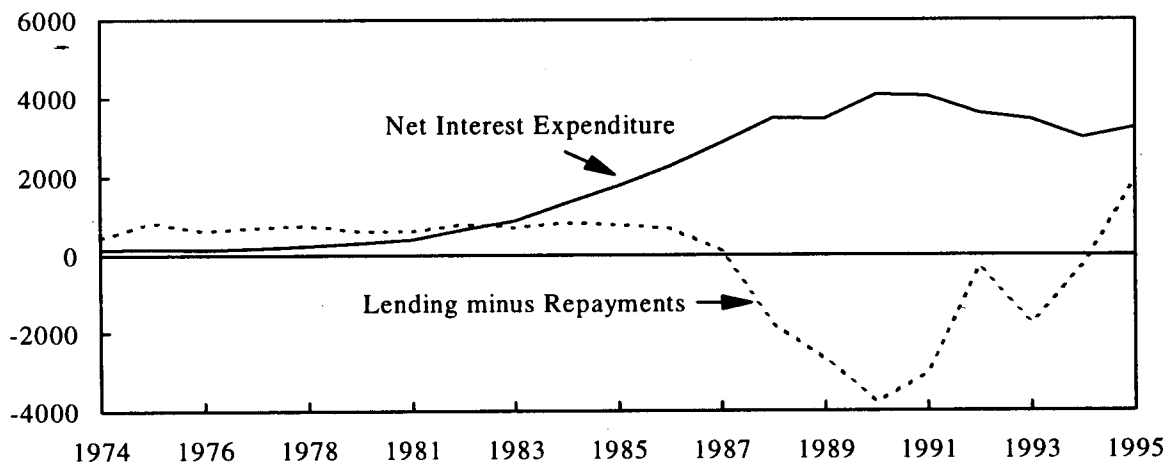
Dynamics of Debt Accumulation

For different reasons, it proved difficult to cut net interest expenditure. In part this was a simple consequence of the debt accumulation implied by large fiscal deficits. But a necessary by-product of reform was an increase in interest rates payable on debt. One aspect of the *dirigiste* financial system had been that domestic financial institutions were obliged to hold government securities in various ratios, effectively reducing debt interest payments below market rates. Financial deregulation, which allowed banks more flexibility in portfolios and free access to world capital markets, together with the worldwide rise in real interest rates in the 1980s, implied an increase in the cost of debt servicing.

Restructuring of the debt of the agricultural producer boards and the so-called 'Think Big' projects also impacted on debt accumulation, independently of the recurring deficits. As described in Section 2, these activities had been financed off the public account, but were either subject to government guarantee or had some form of government equity. In 1986, it was decided to refinance these operations and restructure them for privatisation. In 1986, \$7.2 billion was written off their value. Refinancing these projects over the period from 1986-87 to 1989-90 involved the issue of \$7.5 billion of government debt, which also added to net interest expenditures.

As shown by the Net Lending minus Repayments data in Figure 6, the sale of state-owned assets began in 1987-88, and has continued subsequently. Among other things, these assets included forestry cutting rights, an airline, a steel mill, several banks, the telecommunications monopoly, and several natural gas-based enterprises. (OECD 1992, pp.132-33, provides further details). Net interest payments began to fall, in nominal terms, from 1990-91 onwards.

Figure 6. Government Budgets 1974-95
Net Interest and Lending, Millions of Dollars



Source: New Zealand Treasury.

5. Budgetary Outcomes

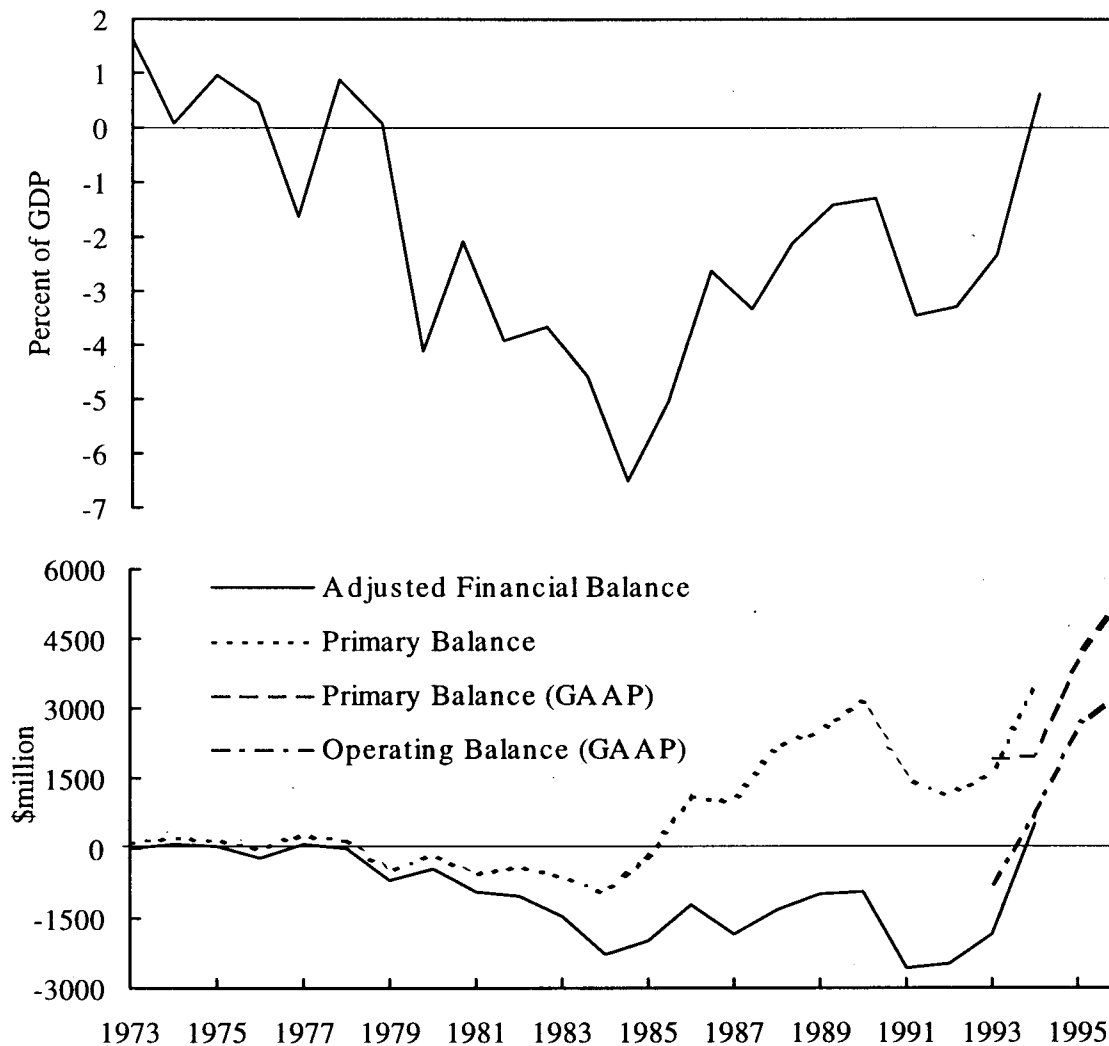
The consequences of the tax and expenditure decisions described in the previous two sections are illustrated below. The top panel of Figure 7 shows the conventional Financial Balance measure (the sum of the *GFS* current balance and net lending) and so includes the effect of asset sales. The early stages of the reform period were accompanied by large budget deficits and the rapid buildup of net debt (from 31.6 percent of GDP in 1983-4 to a peak of 51.6 percent of GDP in 1991-92). Together with high interest rates, these developments produced rapid growth in debt servicing costs as reflected in the gap between the financial and primary balances in the lower panel of Figure 7. Using more recent definitions, data for 1992-3 onwards show that the operating balance continues to increase, and that the gap between it and the primary balance is forecast to be eliminated by 1997-98.

On assuming office in 1984, the incoming Labour Government announced that future fiscal imbalances would be 'fully funded', signalling abstention from money financing, and hence an intention to control the money supply. In the event, as Sieper and Wells (1991) describe, monetary policy did not focus on the conventional definition of the monetary base. The fulcrum of monetary policy became the settlement balances of M3 institutions held at the Reserve Bank. While there was some departure from the full funding commitment, this was a minor source of deficit finance. Over the eight years from March 1984 to March 1992, for instance, the monetary base grew from \$815 million to \$1297 million, while gross debt grew from \$21.87 billion to \$47.1 billion.

The post 1984 era has also seen a number of changes in the mode of bond financing. An inflation-indexed bond, guaranteeing a positive after tax real interest rate, had been available to small savers since 1977. During the wage and price freeze, in December 1983, the National (Muldoon) Government expanded this programme by making retail indexed bonds more liquid and adding a tradeable indexed bond to the wholesale bond tender programme. In March 1984, indexed bonds comprised less than 10 percent of outstanding government debt, while 37.5 percent of gross debt was effectively indexed against domestic inflationary shocks by being denominated in foreign currency.

It is well known (see, for example, Bohn 1988) that the optimal issue of nominal debt involves a tradeoff. Inflationary surprises impose a lump sum tax on holders of long run nominal bonds. To the extent that this tax substitutes for distorting taxes, this is an argument in favour of nominal debt issue. On the other hand, the private sector knows policymakers' incentives to impose the inflation tax, which imposes welfare costs by increasing the time-consistent inflation rate. In 1984, the incoming Labour Government announced its intention to maintain tight monetary control with a view to maintaining low inflation. So it is surprising that at the same time as announcing the end of the price freeze (in November

Figure 7. Fiscal Balances 1973-95
Adjusted, Primary and Operating Balances



Sources: Prior to 1993-94, the fiscal surplus is measured by the Adjusted Financial Balance, which is the sum of the current balance (as recorded in Budget Table 2) and net lending. The Primary Balance deducts interest payments on gross debt. The second pair of series, from 1992-93 onwards, shows data derived according to generally accepted accounting practice (GAAP). The Operating Balance is taken from the 1994 and 1995 *Economic and Fiscal Outlook*. Data for 1995-6 to 1997-8 are forecasts in the 1995 *Economic and Fiscal Outlook*. The Primary Balance series is derived from underlying data provided in the 1994 and 1995 *Economic and Fiscal Outlook*. Consistent with the definition implied by equation 2 of the text, the calculation is intended to remove all income flows associated with assets (for example, dividends) and liabilities (for example, interest on debt).

1984), the Minister of Finance simultaneously announced the cessation of indexed debt issue. In retrospect, this change appears to have been offset by a shortening of the maturity structure of New Zealand dollar (\$NZ) debt, and an increase in the proportion of gross debt denominated in foreign currencies. As shown in

Table 4, by March 1988, almost half of \$NZ debt was less than two years to maturity, while the percentage denominated in foreign currency had risen to 43.3 percent.

Table 4. Composition of Gross Public Debt in New Zealand

As at the End of March 1984, 1988 and 1994

	1983-84	1987-88	1993-94
\$NZ Debt Held by the Private Sector (percent less than two years to maturity)	35.5	49.8	33.1
Foreign Currency Debt (percent of total gross debt)	37.5	43.3	36.3

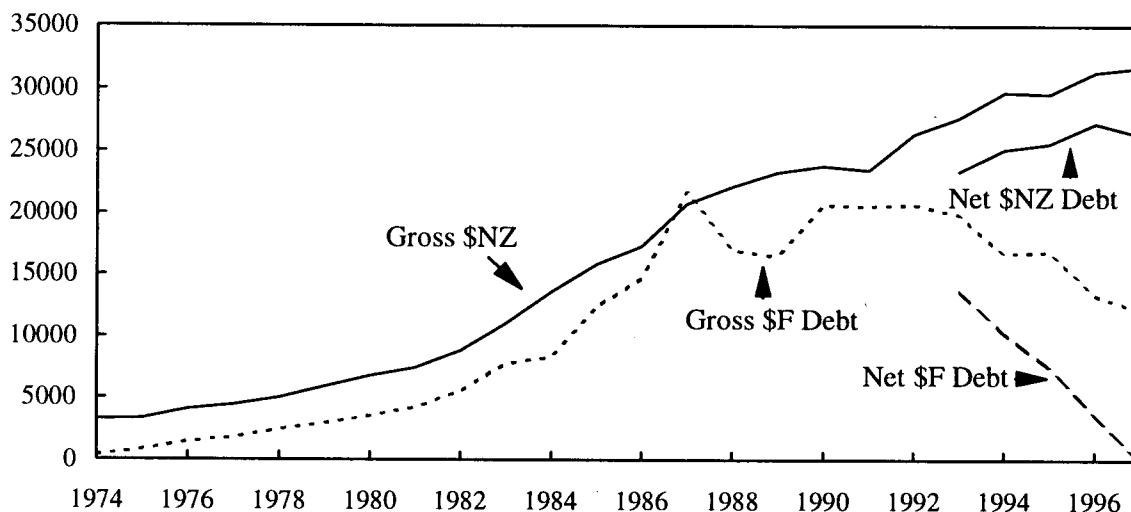
Source: Reserve Bank of New Zealand, *Bulletin* (various issues).

In the late 1980s, the move away from indexation of debt was accelerated, by using the proceeds of sales of state owned assets to repay foreign currency debt. This development coincided with the beginning of a concerted disinflation policy by the Reserve Bank and by the passage of the Reserve Bank Act in late 1989. Of itself, passage of the Act could never be sufficient to immediately establish the credibility of a disinflationary strategy.

In retrospect, it is possible that the policy of reducing the Crown's exposure to foreign currency risks increased the cost of disinflation because it increased the incentive to impose a lump sum tax *via* surprise inflation. More recently, the announced intention has been to move to a position where the Crown has no net foreign-currency debt. As can be seen from Figure 8, this is forecast to occur by 1996-97.

The level and composition of the government's optimal bond portfolio raises a number of difficult issues. Credibility arguments support the inclusion of indexed bonds in the government's portfolio. In a reversal of previous policy, indexed domestic currency bonds were reintroduced from 1995-96. By 1997-98, it is intended that all new domestic bond issues will be inflation indexed bonds. However, forecasts in the 1995 Minister of Finance's *Economic and Fiscal Outlook* imply that by 1997-98, only five percent of gross domestic currency debt will be indexed. Additionally, hedging arguments developed by Bohn (1990) suggest that if the covariance between foreign shocks and domestic output is known, then this information should be used to construct an optimal government debt portfolio - the intermediate objective being to minimise the need to vary tax rates in the face of various shocks. Existing literature in New Zealand offers little guidance on the structure of the optimal portfolio. But it is difficult to believe that the government's objective of having no net foreign currency debt is necessarily optimal.

Figure 8. Gross and Net Public Debt 1974-96
Domestic and Foreign, Millions of Dollars



Note: Data prior to 1992-93 are, for the net series, a consolidation including loans from the public account and assets of the Reserve Bank. Subsequent data are the GAAP series which consolidates the general government, the Reserve Bank, and state-owned enterprises.

Source: New Zealand Treasury and Table 'Forecast Statement of Borrowings', *Economic and Fiscal Outlook* 1994 and 1995. Data for 1995-6 to 1997-8 are *Outlook* forecasts.

6. Legislative Reform

In its effort to reduce tax rates, privatise state owned enterprise and reduce government debt, New Zealand fiscal policy has similarities with a number of other Western economies. To varying degrees, these policies were dictated by the mistakes of previous administrations. But in legislative reform of fiscal accounting, New Zealand policymakers have taken imaginative steps to improve efficiency and accountability in fiscal affairs. This section analyses these developments.

Public Sector Accounting

The State Sector Act 1988 and Public Finance Act 1989 set out to improve efficiency in core government departments. The State Sector Act changed the departmental head's employment contract from its traditional setting in which heading a government department was seen as part of a long term career in the public service. Now chief executive officers (CEOs) are employed on fixed term contracts under performance criteria agreed between the CEO and the relevant minister, the latter being an elected Member of Parliament. Associated with greater accountability for performance, chief executives have been given freedom to choose efficient input combinations, for example, the removal of requirements

to purchase inputs, such as office space, from other government departments.

One objective of the Public Finance Act 1989 was to reform departmental management systems by introducing accrual accounting (thus enabling chief executives to identify efficient input combinations as mentioned in the previous paragraph). Previously, these systems had been dominated by cash budgeting and the requirement to monitor conformity with Parliamentary appropriations. The new regime was introduced progressively over the two years to 1991 and is designed to follow, as far as possible, accounting practice in the private sector. Two important changes to previous public accounting practice are implied.

First, costs and revenues are allocated to the period in which obligations are incurred. Important examples are that changes in unfunded employee retirement pension liabilities are recorded as an operating expense and a capital charge is levied on departmental use of public assets. The second (and consequential) change is that departmental operating statements are integrated with balance sheets, as in the private sector. Notes to these balance sheets provide details of contingent assets and liabilities.

In parallel with departmental accounts, the Act also requires the government (described as 'the Crown' in the accounts) to produce an aggregate operating statement and associated balance sheet, thus returning government accounts to the system which New Zealand had used in the 1930s.

Local government in New Zealand accounts for three percent of GDP, and derives its functions and funding powers from central government. In parallel with the above measures for central government, a series of measures implemented since 1989 have shifted local authority funding (apart from roading) to local communities and, as with central government departments, local authorities are required to prepare accrual accounts, including balance sheets.

Fiscal Responsibility Act 1994

Earlier sections of this paper detailed instances of short term decisions leading to long term fiscal outcomes which proved difficult to reverse. One was the vote bidding during the 1975 electoral campaign, resulting in the introduction of the National Superannuation scheme. A second was government sponsorship of petrochemical projects and farm price support schemes. The ultimate cost of these projects and schemes were not apparent at the time because of the contingent nature of the government's undertakings. In any case they were 'off-budget' items.

In the late 1980s, a number of other examples focussed attention on the issue of providing clear information to markets and electorates. One was the failure, in October 1989, of the Development Finance Corporation (DFC), a financial institution owned by the statutory body which managed public servants' pension funds. At the time the statutory manager was appointed, Japanese bankers were

owed more than \$NZ1 billion by DFC. The resulting uncertainty over winding-up procedures was potentially costly. In November 1989, Japanese banks withdrew their backing from a \$NZ600 million bond issue in an unsuccessful attempt to get favourable treatment in the disposition of DFC assets. Information available to the electorate in the 1990 election provides another example. As described in Scott (1995), the insolvency of the government owned Bank of New Zealand was known to the government during the election campaign, but not to the National opposition (which subsequently won the election).

If these instances highlighted the need for transparency and consistency in fiscal reporting, the 1990 referendum, which endorsed the introduction of mixed member proportional (MMP) parliamentary representation raised other issues. MMP, to be introduced in the 1996 election, may result in the election of a large number of small party groups. Indeed, fragmentation of the previous two party system has already (by 1995) taken place, resulting in minority government. Alesina and Perotti (1995) suggest a number of reasons why this situation leads to increases in government expenditures and larger deficits. One is that sectional groups internalise the benefits of specific government expenditures, while concomitant tax increases are opposed by the legislature as a whole. The result of this externality is an inefficient increase in both government expenditures and the deficit. In countries like Italy, dissatisfaction with this process has led to changes in electoral law, with the intention of reducing the fragmentation of parliamentary representation. An alternative approach to institutional change is illustrated by Groves (1994), who proposes changes to parliamentary voting mechanisms in ways which link voting on expenditure and taxes.

A third legislative possibility is illustrated by deficit control measures in the United States such as the Gramm-Rudman-Hollings Act of 1985 and its 1990 successor, the Budget Enforcement Act (BEA). As Auerbach (1994) points out, however, the BEA suffers from a number of defects. It does not impose an actual deficit target. Rather, it requires that policy not increase the deficit in the current and immediate future relative to forecasts made at the beginning of the current fiscal year. Hence, forecasting errors lead to base drift and there is no presumption that the initial forecast deficit is, in any sense, optimal. The second criticism of BEA is that its emphasis on flows of taxes and expenditures does not adequately capture longer run effects of fiscal policy.

New Zealand's Fiscal Responsibility Act provides two mechanisms intended to promote fiscal outcomes insulated from short term political lobbying. The first concerns budgetary *process*. A Budget Policy Statement (prepared by the Treasury for the Minister of Finance) of fiscal objectives and the economic outlook is tabled in Parliament three months before the presentation of the budget itself. The Fiscal Strategy Report presented with the Appropriation Bill uses the Budget Policy Statement as a benchmark to identify and justify changes in fiscal objectives and strategy. This mechanism is intended to clarify the effects of political

bargaining and tradeoffs in the period immediately preceding finalisation of the annual budget. To preserve the independence of the Treasury, Parliament's standing orders have been amended so that its Finance and Expenditure Committee of Parliament is entitled to examine the Minister of Finance, the Treasury, and any other relevant experts on both the Policy Statement and the various Budget papers, including the Fiscal Strategy Report.

The second insulation mechanism is that the Act (Section 4(2)) defines fiscal objectives in the following terms:

The principles of prudent fiscal management are

- (a) Reducing total Crown debt to prudent levels so as to provide a buffer against factors that may impact adversely on the level of total Crown debt in the future, by ensuring that, until such levels have been reached, the total operating expenses of the Crown in each financial year are less than its total operating revenues in the same financial year; and
- (b) Once prudent levels of total Crown debt have been achieved, maintaining these levels by ensuring that, on average, over a reasonable period of time, the total operating expenses of the Crown do not exceed its total operating revenues; and
- (c) Achieving and maintaining levels of Crown net worth that provide a buffer against factors that may impact adversely on Crown net worth in the future; and
- (d) Managing prudently the fiscal risks facing the Crown; and
- (e) Pursuing policies that are consistent with a reasonable degree of predictability about the level and stability of tax rates for future years.

Unlike the US Budget Enforcement Act, fiscal objectives are cast in stock rather than flow terms: Section 4(2a) refers to Crown debt and Section 4(2c) to Crown net worth. Section 4(2e) implicitly accepts the arguments of Barro (1979) that deadweight losses of taxes are reduced by having stable tax rates. This, in turn, implies the appropriate timeframe for budget balance during the debt reduction phase is the business cycle, as Section 4(2b) acknowledges. Nevertheless, it is clear, despite the impression conveyed in some of the generational accounts debate (see Auerbach *et al.* 1994 for instance), that *both* the operating statement *and* the balance sheet are essential components of fiscal accounts. The fact that the objectives refer to stocks does not make annual measurement of the flows irrelevant, if for no other reason than Parliament must make an annual appropriation of funds.

It should be noted that in steady state, there is a possible inconsistency in the second of these principles (to balance the budget over the business cycle). If a stable and non zero debt/GDP ratio has been achieved, then as long as the interest

rate is greater than the growth rate of GDP, maintenance of this ratio requires that the Crown run a steady state *deficit*, the size of which depends on the difference between the interest rate and the growth rate.

Net Worth

The practical interpretation of the stock objectives leaves considerable room for discretion. Consider first net worth. The Act requires that net worth be calculated from aggregation of balance sheets of government departments and other reporting entities. In each case, private sector accounting criteria are applied. This opens up a number of issues. First, there is the well known problem of drawing the boundary of fiscal powers and obligations. For example, the accounts draw a distinction between the unfunded superannuation liabilities of government employees and national superannuation. The former is included as a liability because it exposes departmental managers to the full costs of labour inputs. But the latter is not included. The argument is that it is a non contributory benefit payable at rates chosen from time to time at the discretion of the government of the day. The present value of other social welfare benefits are excluded from net worth calculations on similar grounds.

The asset side of the balance sheet raises other issues. As Philpott (1992) shows, valuation of public fixed assets is sensitive to accounting procedures. Two approaches are widely adopted. One uses a perpetual inventory method together with conventional accounting depreciation rates to derive what the OECD calls the Net Capital Stock. The alternative is to calculate the Gross Capital Stock - the difference being that retirement and obsolescence rates are estimated from survival functions. While the former is consistent with private sector accounting practice (and is, therefore, endorsed by the Public Finance Act), the latter may give a better indication of productive capacity. Philpott shows that in New Zealand the latter measure is approximately twice as large as the former. Given the data provided in the balance sheet for 1993-94, use of a gross measure of physical capital would increase Crown net worth by approximately 21 billion dollars. Conversely, including the capitalised value of future national superannuation payments would reduce net worth by an even larger amount.

Presently, balance sheet information plays a dual role in fiscal management. In its 'micro management' role, it supports a set of departmental accrual accounts in which the objective is to use private sector prices to identify efficient input combinations. It provides a vehicle for the periodic statement of off balance sheet contingent assets and liabilities in those cases where they are potentially sustainable in courts of law. It also provides a transparent mechanism for monitoring the government's performance as an asset manager, by accounting for asset revaluations. For example, an asset sold at less than book value requires an explicit appropriation of funds.

In aggregate, an accounting measure of Crown net worth is derived from the balance sheet. Introducing notation for net debt (B), net worth (NW) and net assets (A), Table 5 shows the Crown balance sheet

$$B_t + NW_t = A_t \quad (1)$$

This is a highly condensed version of that provided in the Minister of Finance's annual *Economic and Fiscal Outlook*. The actual increase in net worth is the sum of the operating balance and net asset revaluations. In periods beyond 1996, net asset revaluations are forecast to be zero. The operating balance is positive in 1994, while net worth is forecast to be positive in 1996. Almost all the increase in net worth is reflected by a decline in debt.

This accounting measure of net worth is, however, difficult to interpret from a 'macro management' perspective. The greater portion of the Crown's physical capital provides services to the public at large, rather than to government departments. Similarly, most Crown outlays are not for public production of goods and services, but are transfers of various kinds. So the Crown balance sheet is not simply an aggregation of departmental and enterprise balance sheets. Nor does it reflect the Crown's power to tax, or its commitments to future outlays. For instance, the argument in the case of social welfare transfers is that commitment to benefit rates is not legally binding, and so is neither capitalised as a liability, nor included in contingencies.

Table 5. Crown Balance Sheets in New Zealand
Years ended June 1993-1998

June Years	Operating Balance	Net Asset Revaluations	Net Worth	Net Debt	Net Assets
1993	-\$819	\$1026	-\$7695	\$37111	\$29416
1994	755	1312	-5628	35423	29795
1995	2603	-38	-3063	33152	30089
1996	3287	0	224	30843	31067
1997	5440	0	5664	26270	31934
1998	7809	0	13473	18876	32349

Source: Derived from New Zealand Minister of Finance, *Economic and Fiscal Outlook*, 1994 and 1995.

In its 'micro management' role, the use of private-sector accounting criteria provides useful information to the Crown. However, it is argued that in its 'macro management' role, existing balance sheet data should be supplemented by a measure of economic net worth reflecting future taxes and spending. This

measure is now derived. Write the budget identity as

$$G_t + (A_t - A_{t-1}) + rB_{t-1} = T_t + sA_{t-1} + (B_t - B_{t-1}) \quad (2)$$

where as in equation 1, A and B refer to Crown assets and net debt measured at end-period balance dates. The real rate of interest is assumed constant and denoted r while the measured rate of return on Crown assets is denoted s . Crown outlays exclude net investment in assets and interest payments on outstanding debt. Iterating forward on B_t and assuming that assets grow at rate ρ , equation 2 yields

$$B_0 = \sum_{j=1}^{\infty} \frac{T_j - G_j}{(1+r)^j} + \lim_{t \rightarrow \infty} \frac{B_t}{(1+r)^t} - \frac{\rho - s}{r - \rho} A_0 \quad (3)$$

If the stock of outstanding bonds grows at a rate less than r , then, denoting the primary surplus by $T-G=PS$, intertemporal solvency requires that

$$B_0 = \sum_{j=1}^{\infty} \frac{PS_j}{(1+r)^j} - \frac{\rho - s}{r - \rho} A_0 \quad (4)$$

Alternatively, the overall budget identity can be written in ratio terms by dividing by Y_t . Assume the real GDP growth rate is also ρ where the economy operates in the efficient region $r > \rho$. In the context of a small open economy, r is the after tax real interest rate, while s is necessarily a pretax rate. However, since A includes physical assets, such as roads with low explicit returns to the Crown, it is likely that $r > s$. The budget identity implies that for any arbitrary path of expenditures and taxes

$$\frac{B_{t-1}}{Y_t} = \frac{PS_t}{(1+r)Y_t} - \frac{A_t - A_{t-1}}{(1+r)Y_t} + \frac{sA_{t-1}}{(1+r)Y_t} + \frac{B_t}{(1+r)Y_t} \quad (5)$$

or

$$\frac{B_{t-1}}{Y_{t-1}} = \frac{1+\rho}{1+r} \frac{PS_t}{Y_t} - \frac{\rho - s}{1+r} \frac{A_{t-1}}{Y_{t-1}} + \frac{1+\rho}{1+r} \frac{B_t}{Y_t} \quad (6)$$

which, using lower case notation for ratios, gives

$$b_{t-1} = \frac{1+\rho}{1+r} ps_t - \frac{\rho - s}{1+r} a_{t-1} + \frac{1+\rho}{1+r} b_t \quad (7)$$

Iterating forward over b_t from $t = 1$ yields

$$\begin{aligned} b_0 &= \sum_{j=1}^N \left(\frac{1+\rho}{1+r} \right)^j p s_j - \frac{\rho-s}{r-p} \sum_{j=0}^N \left(\frac{1+\rho}{1+r} \right)^j a_0 + \left(\frac{1+\rho}{1+r} \right)^N b_N \\ &= \sum_{j=1}^N \left(\frac{1+\rho}{1+r} \right)^j p s_j - \frac{\rho-s}{1+r} \left(1 - \left[\frac{1+\rho}{1+r} \right]^{N+1} \right) a_0 + \left(\frac{1+\rho}{1+r} \right)^N b_N \end{aligned} \quad (8)$$

If $\lim_{N \rightarrow \infty} \left(\frac{1+\rho}{1+r} \right)^N b_N = 0$, equation 8 implies

$$b_0 = \sum_{j=1}^{\infty} \left(\frac{1+\rho}{1+r} \right)^j p s_j - \frac{\rho-s}{1+r} a_0 \quad (9)$$

which is analogous to equation 4. The requirement that the debt ratio approach zero is stricter than required by the Fiscal Responsibility Act. The Act's reference to 'prudent debt levels' has subsequently been interpreted in terms of a sustainable debt/GDP ratio. An alternative measure of net worth consistent with this interpretation can be derived by noting that b evolves according to

$$b_N = - \sum_{j=0}^{N-1} \left(\frac{1+r}{1+\rho} \right)^j p s_{N-j} + \frac{\rho-s}{\rho-r} \left(1 - \left[\frac{1+r}{1+\rho} \right]^{N+1} \right) a_0 + \left(\frac{1+r}{1+\rho} \right)^N b_0 \quad (10)$$

where, to be consistent with the generational accounting approach of Auerbach *et al.* (1994), N reflects the expected life of the youngest existing generation. (Note that if $r > s$, asset accumulation by the Crown increases the debt ratio). Denote the desired debt ratio at terminal time by b_N^* . Then the required proportional change to the sequence of primary surpluses is δ , where

$$b_N^* = -\delta \sum_{j=0}^{N-1} \left(\frac{1+r}{1+\rho} \right)^j p s_{N-j} - \frac{\rho-s}{\rho-r} \left(1 - \left[\frac{1+r}{1+\rho} \right]^{N+1} \right) a_0 + \left(\frac{1+r}{1+\rho} \right)^N b_0 \quad (11)$$

It follows that

$$b_N^* - b_N = (1-\delta) \sum_{j=0}^{N-1} \left(\frac{1+r}{1+\rho} \right)^j p s_{N-j} = \frac{(1-\delta)}{Y_N} \sum_{j=0}^{N-1} (1+r)^j PS_{N-j} \quad (12)$$

leading to a definition of 'economic net worth' in terms of the present value of the

difference between the forecast and desired debt ratios. In terms of the original variables, this is

$$\begin{aligned}
 ENW_0 &= \left(\frac{1+\rho}{1+r} \right)^N \frac{Y_0(1-\delta)}{Y_N} \sum_{j=0}^{N-1} (1+r)^j PS_{N-j} \\
 &= \frac{(1-\delta)}{(1+r)^N} \sum_{j=0}^{N-1} (1+r)^j PS_{N-j}
 \end{aligned} \tag{13}$$

An advantage of the proposed measure of net worth is that it provides useful information additional to that presently required by the Act. Net worth is zero if, on unchanged policy, the path of A and ps is consistent with the desired debt ratio at the terminal date, since $\delta = 1$ in that case. If an increase in the primary surplus is required ($\delta > 1$), net worth is negative and *vice versa*. Unlike the Act, where the desired level of net worth is unspecified, equation 13 leads naturally to a desired level of zero. A measure of economic net worth, as defined in equation 13, supplements rather than replaces the existing accounting measure. The former has no implications for either the flow accounts from which the so-called operating balance is derived, or procedures for valuing B and A .

To illustrate the order of magnitude of this alternative measure of net worth, components of the primary surplus (defined implicitly by equation 2) are projected forward for 80 years. Beyond the three year forecasts provided in the 1995 Budget, demographically driven spending rises in line with population and productivity, while 'discretionary' spending, such as defence and transport, increases in line with GDP. Taxes are assumed to increase in line with GDP. Data provided in Table 5 imply that at 30 June 1995, $a_{1995}=0.379$ and $b_{1995}=0.344$. It is assumed that $r = 0.5$, $\rho = 0.032$, and $s = 0.035$. If it is further assumed that the target debt ratio is in the desired 20 to 30 percent range nominated in the 1995 Budget, then, for $b_{2074}^* = 0.241$, equation 11 gives $\delta = 0.9$. Using this value of δ in equation 13 implies that economic net worth is $ENW_{1995} = \$2324$ million compared to the accounting measure of $-\$3063$ million.

As noted earlier, $\delta < 1$ implies that in 1995, a permanent tax cut was possible while at the same time achieving a lower debt ratio. If the permanent cut in the primary surplus is achieved by reducing labour income tax, then $\delta = 0.9$ translates to a cut in the average tax rate of approximately five percentage points. The tax smoothing argument of Barro (1979) and others is that since the burden of distorting taxes increases with the square of the tax rate, the optimal policy (in the absence of any short run stabilisation effects) is to implement the required tax cut immediately.

To summarise, balance sheet information enhances micro management to the extent that it improves efficiency of departmental resource use. It increases trans-

parency by requiring disclosure of asset revaluations and legally binding off balance sheet contingencies for the Crown. But from the macro-management perspective, it is difficult to see the rationale for the emphasis on net worth as defined in the Fiscal Responsibility Act 1994.

It is not surprising, therefore, that operational definition of fiscal objectives has emphasised achievement of a debt target. Nor is it surprising that, in view of the narrow definition of Crown assets and liabilities, the Act requires budget statements to include outlooks for operating revenues, expenses and net debt over a ten year horizon. If it were calculated in a manner consistent with the definitions of G and T in equation 2, this practice provides the information necessary to derive the present value expression

$$\sum_{j=1}^{10} \left(\frac{1+\rho}{1+r} \right)^j ps_j$$

It would be a useful extension to existing reporting requirements to extend these projections and derive a measure of economic net worth.

Which Debt Target?

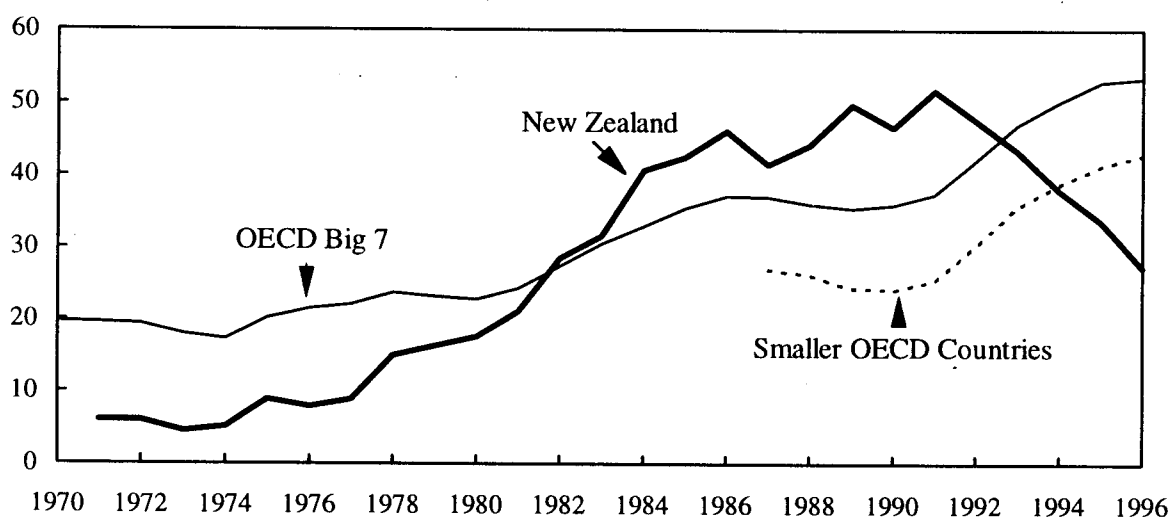
While this analysis leads to an objective for economic net worth, the net debt target b^* is at the discretion of the government of the day. In the 1994 Budget, the first to follow passage of the Fiscal Responsibility Act, the target was specified as a ratio of net debt to GDP of 20 to 30 percent on a sustainable basis. At the time of this announcement, the ratio stood at 42.1 percent and was forecast to fall to 28.7 percent by June 1997. As Figure 9 illustrates, New Zealand is forecast to be moving against the trend (within the OECD) of increasing debt ratios. By June 1997, its ratio will be lower than almost all other OECD countries.

Clearly, contemplation of optimal net debt ratios restricts attention to non Ricardian situations. In the context of steady states of an open economy growth model, with no tax effects in labour supply and non Ricardian consumers, there is little to choose between alternative steady net debt/GDP ratios, because the supply side of the economy is independent of this choice. Choosing a lower ratio essentially involves an intertemporal substitution whereby current consumption is lowered while debt is being reduced. In the new steady state, the lower interest bill allows for lower taxes and higher consumption.

If allowance is made for both risk and distorting taxes, a tradeoff emerges. Distorting taxes tilt the balance in favour of higher rather than lower debt ratios, because the present value of the welfare costs of taxation is minimised by reducing taxes sooner rather than later. Unforeseen disturbances, such as earthquakes or terms of trade shocks, introduce the possibility that the government may wish

to increase its debt at some time in the future. This risk is assessed continuously by the market for New Zealand government debt, and its presence is indicated by a risk premium. The optimal debt ratio does not drive this premium to zero, however, because of the welfare gains from early tax reductions. There is a scarcity of empirical evidence on both margins of this tradeoff (although Orr *et al.* 1995 report estimates of the effects of *flow* variables such as the government deficit on the risk premium for New Zealand). However, it is possible that risk premia on government debt are relatively invariant across a range of stable debt ratios, including those somewhat higher than the target currently envisaged for New Zealand, in which case the tradeoff may be pushed too far in the direction of debt reduction.

Figure 9. Debt-GDP Ratios of Selected Countries 1970-96
Percent of GDP



Notes: Annual data for the OECD Big 7: the ratio of general government net debt to nominal GDP; the arithmetic average of USA, Germany, Japan, United Kingdom, France, Canada, Italy. Smaller OECD: the arithmetic average of data for Australia, Belgium, Denmark, Finland, Netherlands, Norway, Spain and Sweden. Actuals up to 1994, OECD forecasts thereafter. New Zealand data: a spliced series using June year data rather than annual data; 1996, for example, refers to 1996-97.

Sources: OECD Economic Outlook, New Zealand Treasury, Statistics New Zealand.

7. Conclusions

When one considers the relatively small number of policy analysts in the New Zealand government and the changing political complexion of successive governments, the scope and pace of reform in New Zealand fiscal policy has been remarkable. Significant distortions in the structure of business taxes and incentives have been removed. The structure of indirect taxes has been greatly

simplified. The previously unstable growth of debt has been arrested and reversed. Government accounting systems have been changed so that efficient input choices can be identified. By assessing fiscal policy against longer term targets, the Fiscal Responsibility Act 1994 makes a major contribution to ensuring sustainable fiscal policies.

The effects of these changes on the wider economy, on income distribution, on long run growth rates, and on efficiency in the public sector, are evaluated in other chapters of this volume. As to timing, it can be argued that delays in achieving fiscal balance during the 1980s put upward pressure on the real exchange rate which, together with the effects of cuts in border protection, increased the severity of the late 1980s recession. Against that, we have argued that maintenance of expenditures on core areas of health, education and social welfare were an important ingredient in persuading a Labour government to undertake reforms in other areas.

A number of problems and opportunities remain. Although the nominal rate scales on personal income have been simplified and rates have been cut, the effective rate scale is complex. For many taxpayers the system still involves high effective marginal tax rates and replacement ratios, with consequent adverse incentive effects. But preliminary calculations suggest that substantial tax cuts, which are consistent with sustaining a debt/GDP ratio of between 20 and 30 percent, are possible. So there is scope for well designed changes to tax and benefit regimes to reduce these disincentive effects.

Changes to the fiscal policy process and various aspects of fiscal reporting represent a significant improvement over past practice in New Zealand and elsewhere. However, the net worth criterion for prudent fiscal management is difficult to justify, and uncertainty also surrounds the appropriate net debt target. Also, there is a long run inconsistency between flow and stock targets: between the Fiscal Responsibility Act's requirement to balance the budget over the cycle and the interpretation of 'prudent levels of debt' in terms of constancy of the debt/GDP ratio. Since the stock target is ultimately the more important, and since it is most unlikely that the optimal debt ratio is zero, this legislative inconsistency will need to be addressed at some stage.

Appendix

Data Sources

The New Zealand Treasury changed its fiscal year in 1989, while national accounts data and most other data prepared by the Statistics New Zealand continue to be reported on a March-year basis (an exception is some of the Statistics New Zealand's international trade volume and price data). The implica-

tion is that many of the series cited in this chapter are splices of two yearly series with a break in timing. Thus, 1988-89 refers to the year April 1988-March 1989, while 1989-90 refers to the year July 1989-June 1990.

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