# Roles of Fiscal Policy in New Zealand

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# Abstract

Economic growth is one of the objectives of the current government. Fiscal policy, encompassing government expenditure and taxation decisions, can significantly impact on economic growth. This paper proposes a framework which views fiscal policy through three lenses and applies this approach to consider how fiscal policy affects economic growth. The three lenses are: fiscal sustainability, fiscal structure and fiscal stabilisation. The paper reviews international literature pertaining to these three lenses and discusses the extent to which these lenses are incorporated into New Zealand's current fiscal framework. Contemporary New Zealand fiscal challenges are discussed and, in light of these challenges, the paper concludes with consideration of areas to investigate which may yield improvements to the New Zealand fiscal framework.

**JEL CLASSIFICATION**

E6: Macroeconomic Aspects of Public Finance, Macroeconomic Policy, and General Outlook.
E61 Policy Objectives; Policy Designs and Consistency; Policy Coordination.
E62 Fiscal Policy; Public Expenditures, Investment, and Finance; Taxation.
E63 Comparative or Joint Analysis of Fiscal and Monetary or Stabilization Policy.

**KEYWORDS**

Fiscal policy, sustainability, stability, structure, taxation, government spending, economic growth.

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## 1 Introduction

This paper has three purposes. One purpose is to propose a framework which views fiscal policy through three lenses and, in particular, considers the ways by which fiscal policy can be designed to enhance economic growth. A second purpose is to explain New Zealand's current fiscal framework and to evaluate the extent to which the framework accommodates the various lenses through which fiscal policy is considered in this paper. The third purpose of the paper is to highlight and discuss current New Zealand fiscal challenges in order to identify areas to investigate which may yield improvements to the fiscal framework.

Governments have a range of economic and social objectives they endeavour to achieve by regulation, the design of institutions and also by the composition or structure of government spending and taxation (including the ownership of resources and control of service delivery). While political debates will tend to focus on the preferred set of economic and social objectives, economic debate tends to focus on the efficiency and effectiveness of policy in contributing to the achievement of these objectives. The scope for discussion on the role of fiscal policy is therefore very broad. This paper concentrates on the contribution of fiscal policy to long-run economic growth. Our justification is not that economic growth considerations necessarily dominate other reasons for fiscal decisions, but economic growth tends to be a common objective across governments and is an objective of the present New Zealand Government.[1] Furthermore, economic growth provides the base by which governments can finance their social objectives.

Our analytical framework suggests three lenses through which to view how fiscal policy impacts on growth. These lenses are fiscal sustainability, fiscal structure and fiscal stabilisation. Fiscal sustainability considers the importance of sound public finances and stable and predictable taxation rates and expenditure programs for economic growth. Fiscal structure considers how the composition of expenditure and taxation and size of government impact on growth. Fiscal stabilisation refers to the role of fiscal policy in contributing to macroeconomic stability and growth.

These considerations influence the way we think about how fiscal policy can be nestled within the broader framework for economic policy, including regulatory and

[1] The objective of higher economic growth was explicit in the 2002 Speech from the Throne and is implicit in the 2005 Speech from the Throne (Rt. Hon Helen Clark, 2005). Sustaining economic growth was the theme of the 2005 New Zealand Treasury briefing to the incoming Government, (Treasury, 2005a).

macroeconomic policy. They influence, for example, the choice between regulatory and fiscal instruments. They influence how the growth effects of taxation and government expenditure should contribute to fiscal policy decisions. They also influence the extent to which fiscal policy can be used for the purpose of macroeconomic stabilisation or whether that role should primarily be the domain of monetary policy.

A key theme which emerges, unsurprisingly, is that fiscal decision-making frameworks need to be designed to be robust to political economy considerations and recognise that government decision-making will always be in a world of imperfect information and diverse motivations. As James Madison remarked over 200 years ago:

> If men were angels, no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing a government which is to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed; and in the next place oblige it to control itself. A dependence on the people is, no doubt, the primary control on the government; but experience has taught mankind the necessity of auxiliary precautions.
>
> (Madison, 1788)

Responses New Zealand has taken to strive for fiscal sustainability and an efficient fiscal structure, and to improve macroeconomic stability, are divided into those pertaining to the fiscal framework (that is, the legislative and institutional framework), those pertaining to fiscal policy (that is, those achieved through the setting by government of their fiscal policy objectives), and those achieved at the level of fiscal management (that is, through the day-to-day operation of fiscal policy according to budget rules or the information and advice provided to Ministers).

The remainder of the paper is structured as follows. Sections 2, 3, and 4 discuss fiscal sustainability, fiscal structure and fiscal stabilisation respectively. Each section reviews insights from theoretical and empirical research as to how each of these three aspects of fiscal policy can impact on economic growth and the challenges of achieving fiscal sustainability, good fiscal structure and an appropriate contribution to macroeconomic stability. These three sections then discuss responses New Zealand has made and they review outcomes under each role. Section 5 discusses the connections between each of the three roles of fiscal policy and the implications of these connections. This discussion is couched in the context of contemporary New Zealand fiscal challenges. Section 6 draws together the main conclusions to be taken from the paper.

# 2 Fiscal Sustainability

There are several ways to define the sustainability of a government fiscal programme. One consideration is political sustainability. The focus of this paper is financial sustainability. However, political sustainability is likely to create uncertainty and induce Ricardian effects in the same was as does financial sustainability, and hence in this regard have similar economic implications. A common approach is to define financial sustainability in terms of the feasibility of funding a given expenditure programme under the prevailing taxation structure or taxation-to-GDP ratio.[2] This definition encompasses elements of short-term financial risk (that is, whether a government's financial position is robust to revenue volatility) and long-term financial sustainability.

To focus subsequent discussion, it is helpful to write down the basic fiscal sustainability condition that emerges from the government intertemporal budget constraint (IBC). In a growing economy, where output grows at the rate $g_n$ (where $Y_n = (1+g_n)Y_{n-1}$), the government flow budget constraint can be expressed as

$$\frac{B_n}{Y_n} = \frac{G_n}{Y_n} - \frac{T_n}{Y_n} + \frac{1+r_n}{1+g_n}\frac{B_{n-1}}{Y_{n-1}} \tag{1}$$

where $B_{n-i}$ is the level of nominal government debt at the end of year $n-i$, $G$ is the sum of government primary expenditure, $T$ is government revenue from taxation and $r$ is the interest rate on outstanding government debt.

Unless there is a limit on the government debt-to-GDP ratio, this expression does not impose any restrictions, from a sustainability perspective, on fiscal policy or the level of debt. Furthermore, consideration of a framework for an optimal level of debt has concluded that there is no single level of debt that can be considered optimal no matter what the particular circumstances are. However, there are other frameworks which government could use to set the appropriate level of debt. One approach is to consider that current consumption should be financed from current taxation, but allow capital expenditure to be financed out of debt. Another approach is to consider debt as the residual of all other budgetary policy decisions. This suggests that an optimal debt policy can be derived by deciding on the desired size of government and on the best financing of this expenditure, be it tax or debt policy or a mix of both, considering the trade-offs that apply (CS First Boston, 1995). Other considerations include the role of debt as an automatic stabiliser and inter-generational equity. Whatever the reasons for raising debt, it is common practice for governments to recognise the need to operate fiscal policy within the bounds of a target level of public debt. The reasons for this are discussed in the next section.

Conceptually, the Government Budget constraint and fiscal gap can be considered over an infinite horizon. However, in practice Governments tend to set themselves goals over a limited horizon. This reflects the fact that fiscal programmes change when governments change and that there is uncertainty about the future. Furthermore, adjusting policy settings today, to account for possible future structural change, is not necessarily optimal. In particular the judgement to make adjustments should take account of the "option-value of

[2] The Treasury Statement on the long-term fiscal position adopts this approach (The New Zealand Treasury, 2006),

waiting" for better information. This approach could take explicit account of the uncertainty of future economic conditions and the potential relative costs of fiscal adjustments made later rather than earlier, in a manner similar to the approach developed, for example, for fixed investment decisions (Dixit and Pindyck, 1994). Furthermore, adjusting policy settings by trying to maintain a constant tax rate over the longer term, when there is structural change, can result in higher government expenditure than would otherwise be the case, and hence suboptimal results (Pinfield, 1998).

Given the discussion above, suppose that there is a binding debt target in some future year $N$. Using expression (1) and assuming the economy starts in year $n = 0$ and inherits a stock of public debt of $\frac{B_{-1}}{Y_{-1}}$, by substituting forward to year $N_{-1}$ and by imposing a binding debt constraint for year $N$, the government intertemporal budget constraint can be written as

$$\frac{B_{-1}}{Y_{-1}} - \rho_N \frac{B_N}{Y_N} = \sum_{n=0}^{N} \rho_N \left( \frac{T_n}{Y_n} - \frac{G_n}{Y_n} \right) \tag{2}$$

where $\rho_n = \frac{1+g_n}{1+r_n} \rho_{n-1}$ (and $\rho_{-1} \equiv 1$).

Expression (2) is an expression of the constraint that must be satisfied if a government is to satisfy its fiscal sustainability objective. It implies that, if there is a binding debt target in year $N$, the government intertemporal budget constraint (IBC) requires that the present discounted value of future primary balances must be equal to the difference between initial debt and the present discounted value of terminal debt. It shows the present discounted value of the increase in primary balances necessary to guarantee the IBC is fulfilled.

Expression (2) can be rearranged to define the fiscal gap, $FG$, in the current year. This represents the gap between two components: (i) the difference between the current debt ratio and the present discounted value of the future binding debt constraint, and (ii) the present discounted value of future primary balances. This gap can be eliminated by some combination of changes to the present discounted value of future taxation and expenditure.

$$FG_0 = \left( \frac{B_{-1}}{Y_{-1}} - \rho_N \frac{B_N}{Y_N} \right) - \sum_{n=0}^{N} \rho_N \left( \frac{T_n}{Y_n} - \frac{G_n}{Y_n} \right) \tag{3}$$

Expressions (2) and (3) help put into context the issues relevant to the discussion in the remainder of this section and in sections 3 and 4. In terms of our earlier definition, "the feasibility of funding a given expenditure programme under the prevailing taxation structure or taxation-to-GDP ratio", by representing the given expenditure programme by the present discounted value of future expenditure component of expression (3), the fiscal gap would represent the taxation revenue gap that would be required to be closed in order to simultaneously sustain this expenditure programme and satisfy the IBC condition.

What is clear from expression (2) is that the lower is the debt target ratio for a given initial debt ratio, the higher is the level of present discounted value of future primary surpluses required to realise that target and satisfy the IBC. Considerations influencing the choice of an appropriate target debt ratio, discussed next, are therefore crucial.

Also crucial is the process for deciding on the efficient level of government expenditure and its path over time. What is more, it is clear from expression (2) that if fiscal policy can have significant leverage over GDP growth by, for example, manipulating the composition of $T$ and $G$, then this represents another option for satisfying the IBC while simultaneously contributing to growth (higher growth will raise $\rho_N$). This argument, of course, assumes that government spending does not rise with income growth at a rate that offsets this effect. We discuss in section 3 how the structures of expenditure and taxation impact on growth, and we consider in section 4 how macroeconomic stability contributes to growth and whether fiscal policy has a role to play in enhancing macroeconomic stability.

## 2.1 Fiscal sustainability and economic growth

As discussed above, sustainable public finances, represented by the maintenance of prudent debt levels over all time periods, are important from an economic perspective because this property can impact on private decisions for several reasons. This is because fiscal sustainability will influence, among other things, the stability of taxation rates and government expenditure programmes, the cost of capital and the ability of fiscal policy to act as an automatic stabiliser. Fiscal sustainability can also impact on trend inflation and financial system stability.[3]

Sustainable public finances can result in more efficient public financing by allowing government to maintain stable taxation rates. Sustainable public finances maintain the ability of government to raise debt at reasonable cost in the face of adverse shocks to the fiscal position, as opposed to changing tax rates. That stable taxation rates minimise the cost of raising taxation revenue is illustrated by the taxation rate smoothing literature (Barro, 1979). Varying taxation rates across time to finance variations in government expenditure is costly. This is because the adverse effects of taxation on welfare and growth increase more than proportionately with the taxation rate. Taxation smoothing also allows fiscal policy to act as an automatic stabiliser, and hence support macro-stability. However, in order for tax rate smoothing to be optimal, the cost of public debt must not be increasing more than the cost of raising taxation revenue. If the cost of public debt increases with the level of public debt, then the benefits of tax smoothing and fiscal stabilisation will be eroded.

Further, unsustainable fiscal programs risk sudden and unexpected adjustments to fiscal policy. Volatility in taxation rates and core government expenditure can create uncertainty which can reduce private investment and impose adjustment costs. For example, if public funding for tertiary education expenditure is highly uncertain, individuals may be discouraged from undertaking higher education. Sustainable public finances are also important for macroeconomic stability. Volatility in the components of fiscal policy can impact on private investment by generating greater volatility in interest rates, exchange rates, cash flow and by increasing uncertainty.

Governments tend to raise debt for reasons other than taxation smoothing or to provide automatic fiscal stabilisation. For example, debt financing is often seen as appropriate to fund capital expenditure, particularly when that expenditure earns a positive financial return. Given this, there are a number of reasons for government to set some target public debt ratio or "prudent" level of debt. These include the presence of borrowing

[3] Sustainability is also important from the point of view of intergenerational equity.

constraints, the potential inflation implications of high levels of public debt, and uncertainty as to the future fiscal position.

High levels of government debt may be costly if large injections of debt financed government expenditure crowd out private sector spending by driving up real interest rates and exchange rates and relative prices.[4] This will be costly to growth if government productivity is lower than private sector productivity (Baumol, 1967). In addition, high levels of government debt, or default on debt by governments, can crowd out private investment by increasing the risk premium on borrowing for private agents as well as government.[5] High levels of government debt can also create risks for macroeconomic stability if the government borrows domestically and if the risk of government default raises domestic financial system risks.[6]

Further, high levels of government debt can lead to difficulties in controlling inflation. For example, Sargent and Wallace (1985) consider the situation of a government running deficits which are financed by issuing government bonds. If these deficits are unsustainable, in that government will not be able to finance deficits indefinitely through issuing bonds, then eventually the outstanding debt will need to be financed by an increased level of currency, and hence could lead to higher inflation in the future. Further, if demand for money actually depends on expected inflation, then unsustainable deficits could lead to higher inflation in the present period.[7] This argument illustrates an important nexus between fiscal and monetary policy and it justifies fiscal sustainability from the perspective of inflation targeting. It is another reason to consider deviation from strict tax smoothing debt policy if, despite satisfying the intertemporal budget constraint, large swings in the level of public debt impact adversely on inflation expectations.

Another issue is the need to provide insurance in the face of uncertainty. The existence of uncertainty implies that fiscal forecasts and projections are not deterministic, and hence policy must provide for random shocks. Insurance against shocks will be particularly important when the need for taxation in the future is negatively correlated with private consumption. When this correlation is negative, the need for taxation increases would occur when individuals can least afford them. The susceptibility of New Zealand to volatile productivity shocks arising from terms of trade and climate shocks is a *prima facie* reason to suggest that the correlation between taxation revenue needs and private income and consumption will be negative.[8] However, CS First Boston point out that the case for insurance may be weakened if individuals are willing to reduce their consumption of

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4 For example, in the Mundell-Fleming open economy sticky-price model a debt-financed fiscal expansion puts upward pressure on interest rates and the real exchange rate, and reduces private investment and net exports. In the case of perfect capital mobility the initial fiscal expansion completely crowds out private sector spending.

5 Evidence of this comes from studies which show that US states with legislated expenditure targets face lower borrowing costs than those without such targets (Eichengreen and Bayoumi, 1994; Poterba and Reuben, 1999).

6 Giammarioli, Nickel, Rother and Vidal (2006) provide a useful discussion of potential financial indicators of short-term government financing risks. This is an aspect that perhaps warrants deeper consideration than provided in this paper.

7 Several versions of the fiscal theory of the price level have evolved since Sargent and Wallace's paper; some are based on the government budget constraint and some are based on the implications of game-theoretic conflicts between fiscal and monetary authority objectives. See also Allsopp and Vines (2005) who show that unsustainable fiscal policy will hinder the monetary authority's ability to control inflation.

8 This argument is supported by New Zealand business cycle research. For example, Kim, Buckle and Hall (1994) reveal a high contemporaneous correlation between fluctuations in New Zealand's terms of trade, real gdp growth and private consumption growth.

publicly-provided goods and services during adverse economic conditions. Insurance against shocks could be in the form of keeping debt at levels lower than strictly required, maintaining an asset buffer which could be run down in the face of shocks or through precautionary taxation. CS First Boston (1995) argue in favour of precautionary taxation, that is higher current taxes and higher Crown net worth than required to fund expenditure.

## 2.2 What are the challenges in obtaining sustainability?

The time path of the primary fiscal balance is critical to achieving sustainable fiscal policy. Across both developed and developing economies, the achievement and maintenance of primary fiscal balances commensurate with fiscal sustainability has proved to be a difficult challenge. Experiences with rising budget deficits and inflation across a number of countries from the late 1960s to the 1980s prompted interest in the way the design of policy institutions can influence macroeconomic outcomes, including overcoming the tendency for fiscal "deficit bias". Deficit bias can be attributed to two main sources.

First, political economy problems can lead to a level of debt which is socially suboptimal. For example, governments guided by immediate political priorities and the desire to be re-elected have an incentive to raise debt now to fund present expenditure, and thereby shift costs onto future generations. Similar to the time inconsistency arguments discussed below, this behaviour arises from a high discount rate on the future (Kennedy and Robbins, 2001). This myopia may have a cost today in terms of an increased risk premium, as it will be difficult for government to credibly commit to paying back debt in the future. All else equal, the likelihood of deficit bias is influenced by the type of political system. Stein, Talvi and Grisanti (1999) find that electoral systems which exhibit a high degree of proportionality tend to lead to larger fiscal deficits, although Hallerberg and von Hagen (1999) find that negotiated spending targets can sometimes limit deficit growth in proportional systems.

A fiscal deficit bias may also arise if governments have a tendency to raise their spending during periods of strong income and taxation growth but struggle to reduce spending when taxation revenue declines (as this requires ending existing programs). In those circumstances, government expenditure and fiscal deficits will tend to rise over the longer term (Alesina and Perotti, 1995).

Second, weak fiscal institutions make it difficult to manage fiscal deficits. For example, where tax collection and budget management capacity is inadequate, fiscal discipline will be compromised. Inadequate budget systems in China evidently mean that the Budget is not an effective instrument to curb expenditure. Governments at all levels spend funds not only allocated through the Budget process but also obtained off-budget by, for example, leases over land and charges (Dingjian, 2007). This means there is no effective central monitoring of expenditure. Another challenge in managing potential contingent liabilities (such as the risk of a natural disaster) is uncertainty as to the likelihood and size of that liability. As measures taken today to provide funds or mechanisms for a future risk impose costs on the current taxpayers, good information is needed for efficient risk management.

## 2.3 What approaches has New Zealand applied?

### 2.3.1 Fiscal framework

Sustainability concerns have influenced both the design of public institutions and the conduct of fiscal policy in New Zealand. For example, in terms of institutional design, the delegation of regulatory policy to independent agencies in many cases was considered to help manage risks to the government balance sheet. For example, the delegation of banking regulation to the Reserve Bank is intended to limit government's exposure to financial sector distress, first by ensuring financial institutions are unlikely to fail and, second, by removing any explicit government guarantee of the financial system. Although these institutional responses are important to manage risks facing the government, this paper focuses on the design of fiscal institutions.

New Zealand has put considerable weight on the design of fiscal institutions to help avoid deficit bias and reduce and maintain a lower debt ratio, and to provide appropriate information for decision making. One of the key tenets of the Public Finance Act 1989 (PFA) is to allow for government decision-making to be disciplined through setting out requirements for information provision, transparency and accountability.[9] These disciplines can occur through the electoral process, through market mechanisms (such as increases in risk premia on lending) and rating agencies or through external commentators.[10]

However, although transparency will discipline government by holding decision-makers to account, market-led adjustment can be abrupt and costly.[11] Furthermore, transparency is not necessarily sufficient to avoid deficit bias because future generations do not have a voice. Hence the PFA transparency provisions are reinforced in New Zealand by the principles of responsible fiscal management.

### 2.3.2 Principles of responsible fiscal management

The principles of responsible fiscal management, specified in Section 26G of the Public Finance Act 1989, are summarised in Table 1. They are a set of guiding principles designed to be appropriate under any administration. Aside from the requirement that, once prudent levels of debt have been achieved, governments must maintain those levels by ensuring that on average (over a reasonable period of time) total operating expenses do not exceed total operating revenue, the principles do not impose mandatory targets. This approach was deliberately chosen as it was considered that there was no solid justification for any target over a long period of time and it allowed greater flexibility to take account of other objectives, such as macroeconomic stability (Janssen, 2001).

The idea of using guiding principles that are prescribed in legislation has also been adopted by Australia and the UK. In the UK, the actual fiscal rules (that is, the "golden rule" and the "sustainable investment" rule) have to satisfy the guiding principles. This

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9 The Public Finance Act 1989 was amended in 2004 and incorporated the key requirements of the earlier Fiscal Responsibility Act 1994.

10 There are, however, limits on what is desirable to make transparent in cases where agents' behaviour may be adversely affected.

11 Mattina and Delorme (1996) find evidence of a non-linear supply of credit function for Canadian provincial governments.

approach is in contrast to the Stability and Growth Pact in the European Union which fixes an upper limit on public deficits and debt.

Restrictions on the budget balance are the most common fiscal rule applied internationally. In a study of these rules, Poterba (1997) concludes that balanced budget rules are effective in influencing fiscal outcomes. In common with many other countries, the New Zealand principle is defined to apply on average, allowing deficits when growth is below trend and surpluses when growth is above trend. This approach provides scope for more efficient financing as it allows for tax smoothing and the operation of automatic stabilisers. It also supports sustainability to the extent that it prevents cyclical increases in revenue being spent on ongoing expenditure.

The New Zealand balanced budget principle is specified to apply only to the current operating balance, therefore allowing borrowing to fund capital spending. To avoid a large build-up of debt, the principles also require that government maintain a prudent level of debt and net worth and make these intentions transparent. In this regard, governments in New Zealand have set self-binding debt targets as a long-term objective.

### 2.3.3 PFA: Reporting requirements

The fiscal responsibility section of the PFA requires the production and reporting of comprehensive financial information. These requirements seek to improve decision making by ensuring decision-makers have comprehensive financial information available on the short, medium and longer term, improve accountability through transparency and reduce opportunities for manipulation by providing for independence in the preparation and audit of financial information.

Information requirements include production of a government balance sheet and fiscal forecasts on an accrual basis over a period of at least three years, and reporting of specific fiscal risks to which the government will be exposed. All Crown reporting entities are subject to reporting and monitoring requirements, including a statement of service performance that is included in the audited financial statements. These reporting and monitoring requirements were introduced as a critical component of the comprehensive programme of public sector management reform introduced during the late 1980s and early 1990s in which chief executives became explicitly accountable for the performance of government departments and were given greater discretion over the acquisition and utilisation of resources (McCulloch and Ball, 1992).

Independence requirements include the use of financial reporting standards, independent preparation of the fiscal and economic forecasts by the Treasury and independent audit of financial statements. Recently, International Financial Reporting Standards (IFRS) adjusted for the public sector have been adopted.[12] In addition, the Public Audit Act (2001) requires that the Auditor General provide an *ex-post* audit of appropriations administered by departments or Officers of Parliament to ensure that expenses and capital expenditure is appropriately authorised and incurred for the purpose for which it was intended. Under the Controller function in the PFA, the Controller and Auditor

[12] Reporting standards relate to recognition, measurement, presentation and disclosure of assets, liabilities, revenue and expenditure and related cash. The IFRS provides an internationally recognised and more comprehensive set of standards than previously applied in New Zealand. The main implications for the New Zealand fiscal statements are in the enhancement of consistency and in the measurement of insurance and defined retirement benefit liabilities. These changes generate minor alterations in the measurement of net worth and the operating balance (See The Treasury, 2007, pages 90-91).

General monitor the incurrence of expenses and capital expenditure against appropriations throughout the year (The Treasury, 2005b, page 26).

The Fiscal Strategy Report (FSR), is a key tool to make government's medium-term intentions explicit. In the FSR, the government is required to set long-term objectives (over a period of 10 years) and short term intentions (over a period of 3 years) relating to debt, operating balance, net worth, revenues and expenses. Government is also required to provide fiscal projections over a period of at least 10 years and assess the consistency of the projections with the 10-year objectives specified in the FSR. The objectives act as a form of self-binding rule which the government outlines to the public, and states how government intends to ensure it will maintain a prudent level of debt and net worth.

The sustainability framework has recently been reinforced by the requirement for the Treasury to publish at least every four years, a statement of the long-term fiscal position (LTFP) for a horizon of at least 40 years.[13] The first statement was published in 2006 (The Treasury, 2006). In contrast to the FSR, the Statement and projections it contains is a Treasury document based on The Treasury's assumptions. Although, the Statement is required to be published, the fiscal framework does not require Government to adjust current fiscal policy if that policy is consistent with the debt objective over a 10-year time horizon, even if it implies a rising debt ratio over a 40-year time horizon.

### 2.3.4 Fiscal policy: Long-term objectives

Successive governments have shown a strong commitment to the principles of responsible fiscal management and to setting and achieving challenging long-term objectives. The PFA allows different governments to specify differing objectives, depending on their particular policy agenda, whilst being consistent with medium-term sustainability. External parties have also focused on governments' stated intentions, hence providing discipline.

To illustrate, in 1998 and 1999 the Government focused on expenditure control, debt reduction and tax relief. This was expressed through the long-term objectives to reduce the level of gross debt to 30% of GDP, and to "limit the burden of State spending on current and future taxpayers by focusing on the efficiency and quality of expenditure and by reducing expenses to below 30% of GDP" and to "use a low-rate, broad-based tax regime to raise sufficient revenue to meet its long-term operating balance objective of running surpluses, on average, over the economic cycle."

Since 1999, the Government has followed a strategy focused on the longer-term sustainability of public finances by continuing the reduction of gross debt and by building up financial assets. In particular, since 2001 the Government has specified in its long-term objectives that operating surpluses will be large enough to pre-fund some of the costs of the ageing population through contributions to the New Zealand Superannuation Fund (NZS Fund). The focus on reducing debt has also seen the debt target being progressively reduced to the current one of maintaining gross sovereign-issued debt (GSID) broadly stable at around 20%, as specified in the 2006 and 2007 Fiscal Strategy Reports.[14]

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[13] The rationale for this "Statement on the long-term fiscal position" and the key judgements required to prepare the Statement are discussed in Rodway and Wilson (2006).

[14] See, for example, the Minister of Finance's 2007 Fiscal Strategy Report, page 52 (Minister of Finance, 2007).

The debt target has been the main anchor to restrain government expenditure growth over recent years. It is common to see Government scaling back (or increasing) new expenditure programs during the Budget process in order to remain consistent with the debt objective.

### 2.3.5 Fiscal management

Fiscal management encapsulates the processes and rules that link budget decisions to the sustainability framework.

Prior to 2003 the Government used a provisions framework to manage Budget decisions. Under this framework, a fixed three-year nominal spending amount was set (called the "fiscal provision"). This approach was introduced at the time when New Zealand moved to a parliamentary electoral system of proportional representation. The cap was motivated by concerns that a coalition government would usher in a period of fiscal imprudence. As the provision was intended to cover controllable expenditure only, there were detailed rules for what did and did not "count". The provision was intended to be set at the beginning of the three year parliamentary term and not changed. In practice, however, it was changed in times of significant economic shocks (such as the successive droughts and the Asian financial crisis in 1997 and 1998). Nevertheless, the provisions framework improved on previous approaches by providing a tangible constraint on spending, shifting the focus from a one year to a three-year spending track and making forecasts more realistic (Vandermolen, 2002, page 7).

In 2003, the Government moved to a new fiscal management approach (FMA). The motivation for this was in part to achieve greater consistency between Budget decision-making and the long-term (10-year) objectives (Vandermolen, 2002, page 4). Under this approach the Government communicates spending and taxation intentions by explaining how these intentions relate to a desired 10-year operating balance and debt track. New operating initiatives and capital expenditure must be funded out of a specified accrual-based allocation for a given Budget, known as the operating "allowance" and capital "allowance", which is consistent with the overall fiscal strategy.[15]

Under the FMA, operating and capital allowances are reassessed during the Budget process to ensure Budget decisions remain consistent with long-term objectives. When the FMA was designed, it was envisioned that allowances for the next Budget would be reasonably firm and changes would most likely occur in future years (Vandermolen, 2002). In practice, over recent years, allowances for the next Budget have been revised frequently and by significant amounts in response to upward revisions of tax revenue forecasts and lower-than-budgeted expenditure. Since the beginning of the century, successive FSRs have reiterated the view that there has been a permanent increase in the level of government revenue allowing increases in allowances which are consistent with the fiscal strategy.

The model used to assess whether a particular operating or capital allowance is consistent with the medium and long-term fiscal objectives is the Fiscal Strategy Model (FSM) developed by the Treasury, discussed below. The FSM provides projections of the impacts of fiscal policy decisions on the operating balance, revenue, expenses, debt and net worth. Long-term fiscal projections based on the FSM have proved to be a very important tool for

[15] See for example the Treasury (2007), Economic and Fiscal Update, page 97.

decision making, with new spending allowances (in current or future years) being increased or decreased in order to maintain consistency with long-term objectives.

## 2.4 Fiscal sustainability outcomes

New Zealand's fiscal position is sound by historical and international standards. New Zealand is amongst a small group of OECD countries with a positive net financial asset position (see, for example, 2007 FSR, page 40 of Budget 2007). Figure 1 shows that there has been a steady decline in the public gross debt-to-GDP ratio over recent years.[16] Gross Sovereign-Issued Debt (GSID) has fallen from 37.7% of GDP in 1998 to 23% of GDP in 2007.[17] Simultaneously, large operating surpluses over recent years have allowed the accumulation of around NZ$13 billion of financial assets through the NZS Fund.[18]

The strength of the fiscal position has been noted by international credit rating agencies and has been a determinant of New Zealand's sovereign credit rating. For example, Standard and Poor's recently maintained New Zealand's sovereign credit rating whilst noting that current macroeconomic imbalances meant that there was some potential that a shock to the economy could have a negative impact on government finances. However, they remarked that "the low level of net debt provides a strong buffer to absorb any such shock without threatening credit quality" and hence "only a significant and unexpected weakening of government fiscal policy is likely to lead to a down grade in the next few years" (Standard and Poor's, 2007).

These achievements have been associated with a strong period of economic growth and Budgets that helped achieve the transition to higher surpluses required to finance the NZ Superannuation Fund. The reduction in the public debt-to-GDP ratio has occurred as a result of nominal GDP growth rather than a reduction in the level of nominal debt. Higher than expected GDP, and hence tax revenue growth, have resulted in Government achieving its fiscal objectives faster than expected at the start of the millennium.[19]

Projections of the government fiscal position are used to assess the medium and long term sustainability of government fiscal policy. The modelling approach is applied in two different ways. First, the Fiscal Strategy Model is used for the purpose of providing projections for the FSR, and hence assessing how government intends to meet its 10-year objectives.[20] The model used in the Statements of Long Term Fiscal Position uses the

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16 The ratio of GSID to GDP has usually been the measure used to assess financial performance of the NZ public sector since 2002. This choice was a judgement based in part on the fact that there is not a standard measure of net debt. However, more recently there have been situations when there have been increases in GSID that have left net debt unchanged. One example is when the RBNZ's cash settlement process was changed (See Minister of Finance, 2007, Fiscal Strategy Report, page 45).

17 According to CS First Boston (1995), New Zealand's gross sovereign issued debt was145% of GDP in 1945; it fell to around 42% in 1973, rose again to 77% by 1987. GSID has fallen gradually since the late 1980s (See Figure 2).

18 The essential features of the NZ Superannuation Fund are explained in McCulloch and Frances (2001) and details of the governance arrangements are available from http://www.treasury.govt.nz/release/super/ and from the Fund's own internet site http://www.nzsuperfund.co.nz/.

19 For example, the 2003 Fiscal Strategy Report notes that progress towards long-term fiscal objectives was "better than expected at the beginning of the previous parliamentary term" (Minister of Finance, 2003; Page 1).

20 Previously known as the Long-Term Fiscal Model (LTFM), the Fiscal Strategy Model (FSM) is available from the Treasury internet site www.treasury.govt.nz/ltfm

same projection methodology but makes different assumptions about the level of new government initiatives.

The modelling approach applied in each model is to take the government flow budget constraint (expression 1) and project revenue and expenses forward. The projections of GDP, $Y_n$, are based on demographic projections (including some allowance for changes in labour force participation across cohorts) and constant productivity growth. This provides the base for taxation projections, $T_n$. The models include debt finance dynamics, $\frac{1+r_n}{1+g_n}\frac{B_{n-1}}{Y_{n-1}}$, and trace out the debt ratio for each future period, $\frac{B_n}{Y_n}$. The modelling approach reveals the projected time path of each component of the flow budget constraint (including the components of taxation and government spending) and the implications for the debt ratio in each future time period.

The difference between the FSM and the model used in the statement of the long-term fiscal position (LTFP) is in the assumptions relating to the growth of Government expenditure, $G_n$. In the model used in the LTFP statement, all expenditure projections are developed from a "bottom-up" approach. Given current fiscal parameters, government expenditure, $G_n$ is grown based on demographic projections, relative price changes for some components of government spending (notably health) and assumptions about the income elasticity of demand for the current portfolio of public goods (Rodway and Wilson, 2006; The Treasury, 2006). In contrast, the FSM is consistent with the Government's approach to fiscal management, and assumes a degree of fiscal constraint in order to meet Government's stated 10-year objectives. Baseline spending, at the end of the forecast period, is projected forward assuming that current policies continue. New policy initiatives are assumed to be funded from an operating or capital allowance. The assumed allowances are reassessed during the Budget process to ensure consistency with the fiscal strategy. The different assumptions relating to growth of new initiatives in the model imply that the present values of the operating balances produced by the models and projections of debt will differ.

The modelling approach applied in the Statement is similar to techniques used by the OECD, and the Australian and UK Treasuries. Nevertheless, there are a number of issues that need to be recognised when considering the robustness of the fiscal projections and policy insights. These include, for example, the extent to which Ricardian behaviour could result in offsetting responses by individuals to emerging fiscal deficits (including, for example, changes in private savings and labour force participation), feedback effects of government expenditure paths on productivity growth, and feedback effects of rising debt levels on interest rates. These issues are also relevant to estimates of the present discounted values that enter calculations of the IBC and the fiscal gap (expressions 2 and 3).

The different assumptions relating to the growth of new initiatives in the models represent the different information purposes of the models. As FSM projections are used for the FSR, the assumptions as to growth of new initiatives are set by the Government of the day. These projections therefore provide a means for the Government to communicate how it intends to meet its 10-year fiscal objectives. The modelling approach in the statement of LTFP provides a projection of outcomes if fiscal parameters remain essentially unchanged and policy behaviour is unchanged. This approach highlights future policy challenges by, for example, revealing future gaps between the projected debt outcome and the present debt objective if government followed a particular expenditure path. Although the Treasury is still developing its thinking about how to best utilise the

insights from the LTFP statement, it has the potential to help communicate the timing and reasons for changes in policy parameters.

Projections from the FSM are published in the annual FSR. These projections have consistently shown Government achieving on its long term objectives. For example, projections in the 2007 FSR (see for example the 2007 FSR, page 48 of Budget 2007) show a level of debt consistent with the Government's objective to maintain GSID-to-GDP at around 20% over the projection period.

The first statement of the long-term fiscal position (LTFP), published in June 2006, shows that the fiscal position is strong over the medium term. However, the statement projects a higher path for gross debt from the 2020s. The ratio of GSID-to-GDP is projected to be around 25% in the mid-2020s and rising thereafter (Figure 2). On the assumption of no change in policy, operating expenditure is projected to grow as a percentage of GDP and is projected to exceed operating revenue from around 2030. Two of the main influences on government expenditure growth are spending on health and superannuation (Figure 3). Superannuation spending is significantly influenced by the ageing population structure. Health expenditure has grown significantly over recent years owing to increased coverage and rising costs and these are key influences on the projections. Partly in response to this Statement, the current Government has recognised the need to address the growth in health expenditure (see for example the 2007 FSR, page 48 of Budget 2007).

# 3 Fiscal Structure

We define fiscal structure as the composition of government expenditure, the structure of taxation, and the overall size of government. By opening up several avenues through which economic growth can occur, endogenous growth models have provided tools for investigating how fiscal policy can influence economic growth and have given impetus to the idea that the structure of fiscal policy matters for growth. In an early contribution to this development, Barro (1990) demonstrates that certain forms of government expenditure can in theory improve economic growth, whereas, if lump-sum taxation is ruled out, financing of that expenditure will typically have negative impacts on economic growth. Two important insights emerged from Barro's paper. It explicitly demonstrated that in theory fiscal policy can impact on economic growth and, moreover, by incorporating the government budget constraint it revealed that the growth effects of fiscal initiatives were conditional on the method of financing.

These theoretical insights have been reinforced by empirical research distinguishing types of government expenditure and taxation and explicitly incorporating the government budget constraint. As Barro (1990) and Leeper and Nason (2005) have emphasised, theoretical work that takes seriously the restrictions imposed by the government budget constraint has established some important results. Accordingly, and following the work of Kneller, Bleaney and Gemmell (1999) and Bleaney, Gemmell and Kneller (2001), there is growing recognition that the robustness of empirical tests of the growth effects of different fiscal initiatives depends on the appropriate treatment of the government budget constraint. As Gemmell and Kneller (2003) state: "[T]he predicted effects of taxes and expenditures on growth rates depends on: (i) the *type* of tax or expenditure considered (and the tax/expenditure mix); (ii) the total level of expenditures; and (iii) how this is financed (compensating tax or expenditure change)" (page 2). Hence, fiscal structure will have a substantial influence on economic performance.

## 3.1 Fiscal structure and economic growth

### 3.1.1 The structure of expenditure

There is a long-standing debate in the economic literature about how and the extent to which government expenditure can raise long-run economic growth. According to neoclassical growth models, while taxation and government expenditure initiatives that influence the savings rate or incentives to invest in physical or human capital may affect the equilibrium factor ratios, they do not affect steady-state long-run growth. The source of economic growth in these models is exogenous, being unspecified technological change. Although not casting much light on the sources of growth, models of this form nevertheless help us to understand how some types of behavioural change, such as changes in labour force participation, may affect factor ratios and the level of income per capita. To the extent that fiscal policy can change these behaviours, it can affect the steady-state growth path and transition path but not the steady-state growth rate.

The fundamental long-run growth mechanism in endogenous growth models is constant or even increasing returns to scale for the factors of production which can be reproduced by savings and investments. Long-run growth becomes endogenous in that growth depends on investment decisions pertaining not just to physical capital but also to investments in knowledge, human capital, research and development and public infrastructure. These decisions may be influenced by the quality of institutions in the economy, including financial markets and government regulatory institutions. They can be influenced by fiscal policy, including public infrastructure investments. Fiscal policy may directly raise the marginal productivity of private input factors which encourages their accumulation and hence may induce output growth. This process may occur either through the effect on allocation decisions in the private sector or by influencing the productivity of factor inputs.

Public expenditure on various forms of economic and social infrastructure is an example of how allocation decisions of the private sector can be influenced by fiscal policy, as is apparent from Barro's (1990) early model of growth which incorporated public infrastructure in the representative firm production function. Several studies have evaluated, for example, the effect on private sector productivity of public expenditure on transport and information systems (Auschauer, 1989 and 2000; Feehan and Matsumoto, 2002).

Public expenditures may also have the potential to influence the quality of production inputs to private production. For example if, as Lucas (1988) argues, investment in education increases the level of human capital and if the returns to education do not decline over time, education funding will be a source of long-run economic growth.

Although there are many areas where investment can, in theory, improve economic growth, the rationale for public provision of services or government funded incentives typically rests on the presence of either information asymmetries or externalities. For example, the presence of credit market imperfections and human capital externalities provides a rationale for government funding of education (Lucas, 1988).

Although fiscal policy can have positive impacts on long-run economic growth, fiscal policy can also change incentives in ways that are harmful to economic growth. These costs, such as the deadweight loss associated with government discouraging private activity, need to be taken into account in any consideration of government involvement.

Modern growth literature is therefore intended to clarify where it might be most fruitful for policy-makers to focus attention if the objective of fiscal policy is higher income growth. That research is not a substitute for robust cost-benefit analysis of fiscal proposals, but it may help identify where that analysis may be best applied.

### 3.1.2 Financing: the structure of taxation and debt

As illustrated by expression (1), the flow government budget constraint implies that in any period government expenditure can be financed through taxation, raising debt or reducing other expenditure. However, as government must be able to pay back the debt which it raises, the budget constraint implies that the present value of the benefits of expenditure must exceed the present value of the costs of taxation.[21] Debt and financial asset accumulation therefore shift the financing of expenditure across time. Nevertheless, as Kneller, *et al* (1999) and Bleaney, *et al* (2001) show, the form of financing at any point in time is important. That is, the net impact of a category of government expenditure on economic growth will depend on how it is financed. We discuss each in turn, starting with taxation.

#### Taxation

The effects of taxation on welfare and long-run economic growth can be considered through two lenses. First, taxation reduces economic growth through reducing incentives to work, save and invest. Second, like expenditure, the taxation system could be designed to influence private behaviour in ways considered beneficial for growth. Below we discuss these arguments.

Empirical evidence on the effects of taxation on growth is diverse. In his review of some of this evidence, Myles (2000) remarks that empirical evidence is "dogged by the difficulty of defining the appropriate measure of the tax rate and the choice of appropriate regressors." (page 164). Nevertheless, he does conclude that the structure of the taxation system does seem to be important. That is, for a given level of revenue, some tax structures are more costly to growth than others. Theoretical models also identify several channels whereby the structure of taxation could impact on growth.

While all taxes reduce incentives to undertake activity, the extent to which a tax discourages behaviour will depend on the tax rate and the responsiveness of the agent to the tax (elasticity). For a given responsiveness, the deadweight loss from taxation rises more than proportionately with the tax rate. It rises at approximately the square of the tax

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[21] Using expression (2), assuming that the debt ratio target for year *N* is $\leq \frac{B_{-1}}{Y_{-1}}$ and assuming government activity extends to infinity, the intertemporal government budget constraint becomes $\frac{B_{-1}}{Y_{-1}} \leq \sum_{n=0}^{+\infty} \rho_n \left( \frac{T_n}{Y_n} - \frac{G_n}{Y_n} \right) + \lim_{N \to \infty} \rho_N \frac{B_N}{Y_N}$. By ruling out a Ponzi game forever, $\lim_{N \to \infty} \rho_N \frac{B_N}{Y_N} \leq 0$, then we obtain a widely used definition of fiscal sustainability, $\frac{B_{-1}}{Y_{-1}} \leq \sum_{n=0}^{+\infty} \rho_n \left( \frac{T_n}{Y_n} - \frac{G_n}{Y_n} \right)$, which implies all government expenditure must ultimately be paid by taxation.

rate (Harberger, 1964; Creedy, 2003).[22] This implies that increases in the tax rate applying to a given base will display an increasing marginal cost.

Given that the deadweight loss of a tax also increases with the elasticity of a particular activity, Ramsay (1927) proposed that in order to minimise the distorting effect of raising taxation revenue governments should tax each of the multitude of private sector activities at rates equivalent to the inverse of the own price elasticity of demand (and cross-price elasticities, and so on). This approach minimises the overall cost of taxation by ensuring that the marginal taxation burden on each activity is equal. However, in general the information requirements of implementing Ramsay taxes would make full implementation of such an approach intractable. Furthermore, this conclusion does depend on the design of the tax system. For instance, Atkinson and Stiglitz (1976) point out that under a progressive tax system and certain preference structures, even in theory it may be preferable to have uniform consumption taxes.

One important question is the appropriate tax rate to apply to income versus consumption. The importance to growth of capital investment and research and development lends support to the argument that a move from less reliance on income taxation to a greater reliance on consumption taxation could enhance growth. The mechanism through which this is argued to occur is that income taxes distort the choice between consumption and saving by reducing the return on saving. A shift toward greater reliance on consumption tax relative to income taxes reduces the effective price of consumption tomorrow relative to the price of consumption today, thereby raising saving and investment. However, the counter to this argument is that, for a given level of revenue, failure to tax capital income (under an income tax) requires a higher rate of taxation on labour income, which would discourage investment in human capital.

Aggregate taxation regressions also suggest that the design of income taxes is important. There is not scope in this paper to fully review the literature, but a series of studies sponsored by the OECD growth project serves to illustrate some potential channels by which taxes affect growth.

In a series of studies evaluating the effect of taxes on the extensive and intensive margins of labour supply, the OECD have found that the participation decisions of females may be adversely affected by taxation where there is effectively heavier taxation of married women relative to men and single women in OECD countries (Jaumotte, 2003). Other work suggests that a high marginal tax wedge influences the hours worked by second-income earners; that tax incentives for early retirement influenced by retirement pension schemes and measured by the implicit tax on continued work, can have a discouraging effect on employment amongst older workers; and that the extent to which the tax system is progressive can affect the decision to become an entrepreneur.

Similarly, taxation can affect labour productivity through the effect of income taxes on the opportunity cost of investing in tertiary education (Oliveira Martins, Baorini, Strauss and de la Masoinneuve, 2007), through the effect of corporate taxes on foreign direct investment (Hajkova, Nicoletti, Vartia and Yoo, 2006), and tax policies can be effective at leveraging investment in R&D expenditure (Jaumotte and Pain, 2005). While circumstances will vary from country to country, the main point to take from this research is that the structure of the taxation system does seem to matter for economic growth. The importance of high marginal tax rates in discouraging economic behaviour supports the principle of seeking to

[22] Creedy (2004) shows that the excess burden = $\alpha/2(X_i P_i)T^2$ where $\alpha$ is the point elasticity of demand along the Hicksian demand curve and T the tax rate.

marginal tax rates in discouraging economic behaviour supports the principle of seeking to minimise deadweight losses through implementing a broad- based low-rate taxation system.

However, Zagler and Durnecker (2003) show that taxation can be designed to influence private behaviour in ways considered beneficial for growth. For example, they show that information asymmetries and externalities can be addressed through taxation or expenditure measures. Further if, as Romer (1986) and Lucas (1988) stressed, human capital is an engine of long-term growth then biasing the tax system in favour of the accumulation of human capital may improve an economy's growth rate. The conclusions drawn by Myles (2000) in his review of theoretical models isolating taxation effects on growth are somewhat more cautious. He remarks that a wide range of theoretical predictions arose for the size of the taxation effect and these range from "insignificant to dramatically large" and that "theoretical models introduce a range of issues that must be considered, but they do not provide any convincing or definitive answers" (page 164). Whether the taxation system, as opposed to expenditure initiatives, is used to provide incentives to undertake certain activity should be considered in light of a comparative institutions approach. Where there is a clear rationale for government involvement there may be instances where the tax incentives could have a net benefit.

#### Debt financing

Debt (or asset reduction) can also be used to finance government expenditure. The costs of debt are also likely to rise with the level of debt. If households are Ricardian, then financing by changing the level of public debt will be perceived as equivalent to a rise in taxation and will hence have the same cost as taxation.[23] However, as will be discussed later, evidence suggests that households are not fully Ricardian. Given this, higher debt levels are likely to drive up the real interest rate or exchange rate and the risk premium of borrowing, causing some crowding out of private capital accumulation. Alternatively, as discussed earlier, deficits perceived as unsustainable are likely to reduce private capital accumulation through higher inflation or uncertainty as to future government expenditure or taxation (Tanzi and Zee, 1997).

#### Reducing current expenditure

The third form of financing is to reduce existing expenditure (typically referred to as baseline expenditure). This approach would provide economic benefits when the marginal cost of additional financing has reached a level where the benefit of the existing expenditure is less than the cost of raising a marginal dollar or where the original justification for the programme is no longer valid.

### 3.1.3 Size of government and growth

We have noted that some types of government expenditure can improve long-run growth and that since all taxes apart from lump-sum taxes are non-neutral, financing of expenditure has economic costs. Not all expenditure and methods of financing have the same impacts on economic growth. The impact of fiscal policy on growth will therefore depend upon the composition of expenditure and the design of the tax system.

[23] Ricardian equivalence implies that agents perceive that increases in debt will require offsetting increases in tax at some point in the future, see footnote 21, and hence they adjust behaviour in the current period in anticipation.

Some have inferred from this approach that it is principally the composition of government expenditures and taxes rather than their levels that matters for growth. Agell, Lindh and Ohlsson (1997), for example, comment that this line of reasoning implies "that a government wishing to maximise long-term growth must solve an intricate optimization problem. On the margin, the growth promoting effects of increased public intervention must be balanced against the growth inhibiting effects of increased taxes and regulations. This means that the public sector can either be too big or too small. Economies with large as well as small public sectors may grow slowly; in the former case because of large tax wedges, in the latter case because of under-dimensioning of public sector activities" (page 38).

Consistent with this reasoning, robust conclusions from the data about the effect of the size of government on growth appear to be elusive. In a comprehensive review of the empirical literature, Agell, *et al* (1997) reiterate the conclusions of an earlier survey of the literature by Levine and Renelt (1992) who found that when it comes to the link between growth and the public sector the results are spread more or less across the board. Similarly, Temple (1999) concludes his review of modern empirical growth research by remarking that, "Big government and high taxation may have a negative effect, but the evidence is still ambiguous" (page 152). Agell, *et al* argue that this ambiguity is due to serious problems surrounding data (for example, countries have different conventions for defining the public sector), to methodological problems that are without exception difficult, and to the absence of a generally accepted theoretical frame of reference to guide empirical studies (which means that different studies control for different things which makes it difficult to interpret and compare results).[24]

While these reviews suggest that it is difficult to prove that there is a clear-cut causal connection between the size of government and growth, this does not mean that government sector growth does not pose growth problems. From a theoretical point of view it is likely that the marginal net economy-wide benefits of fiscal policy are likely to decline as government increases in size. All conventional taxes on income and consumption are distortionary to some extent. Increasing the size of the revenue base is likely to be associated with increasing marginal cost. Similarly, high levels of debt are likely to have a higher average cost than lower levels of debt. Further, not all government expenditures have the same impact on growth. If the most productive proposals are financed first, government expenditure will exhibit decreasing marginal benefits.

There will come a point at which the cost of financing will exceed the benefit of the increased expenditure initiative in terms of the impact on long-run economic growth. That is, there will be a point at which marginal government activity will crowd out more productive marginal private sector activity. At this point Baumol's model of unbalanced growth is applicable (Baumol, 1967). If, at some point, the marginal public sector activity is less productive than the marginal private sector activity, then as the share of resources claimed by or allocated by public sector institutions increases, economy-wide productivity declines unless there are favourable externalities associated with high growth in the public sector claim on resources that compensate for these direct productivity effects.

[24] Although Folster and Henrekson (1999) challenge these conclusions, it is not clear that their tests have adequately met all the requirements identified by Agell, et al., or have satisfied the insights of Barro (1990).

The magnitude of the "Baumol effect" will depend on the institutional and governance arrangements applying to public decision-making and the robustness of property rights and legal systems. These "Baumol effects" may not be apparent in empirical cross-country panel studies in which the differences in structure of taxation and expenditure are not correlated with size of the public sector. Furthermore, studies incorporating financing effects of government expenditure have tended to be applied to a limited range of "size of government", notably OECD countries. Significant size of government effects may only be apparent in the data or identifiable for variations beyond this range. This sample selection bias may be important if the composition of government taxes and expenditure and the quality of broader government influences on private sector activity, such as the quality of regulations, vary with government size.[25]

However, it seems clear that the composition of government activity is critical to the effect of fiscal policy on growth and that studies of the size of government that do not control for structure are likely to suffer from identification problems. While the size of the public sector seems unlikely to be irrelevant, aggregate measures of the size of government do not provide a good guide as to the growth effects of fiscal policy. For countries with modern institutions and size of governments in the range of OECD economies, the approach to analysing the growth effects of fiscal policy initiatives perhaps best lies in a more disaggregated level of analysis, an approach that "evaluates the effects of fine prints of the public sector." (Agell, *et al*, 1997, page 48).

## 3.2 What are the challenges in achieving a good fiscal structure?

The previous sections argue that the structure of fiscal policy can have an important role to play to enhance long-term economic growth. The challenge for governments and advisors is to turn these insights into practical recommendations. However, in reality there are a number of constraints on the ability of governments to realise the full potential of growth-enhancing expenditure and well designed taxation structures.

First, the information requirements on policy-makers to exploit the insights of endogenous growth models are demanding. Policy-makers must first identify information asymmetries or externalities and understand when the market is not able to correctly price these externalities. Even if policymakers can identify externalities and understand the role of the market in addressing these externalities, they must also understand how government can improve the marginal productivity of the private sector's physical capital and labour, the level at which public provision will crowd out more efficient private activity and the appropriate design of governance structures and institutions to deliver public services. Similarly, in order for policy-makers to be able to calculate accurately the full economic cost of taxation they must be able to understand the private sector response to taxation initiatives, including the extent to which a tax will change agents' behaviour.

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[25] The data problems extend to the type of variables used to capture the dimensions of government. As Wilkinson (2004) observes, the size of government studies that focus simply on the government expenditure or revenue ratios may be missing important dimensions of government influence on private decisions and productivity. As he points out, there are several studies that find a significant relationship between the index of "economic freedom" or "costs of doing business" and productivity and economic growth. Crafts (2006) provides a succinct review of this research.

These demanding information requirements therefore create the potential for "government failure". For example, even in those areas of fiscal policy that, *a priori,* might be expected to have the greatest potential for growth, there is controversy surrounding the strength of empirical estimates. For example, Zagler and Durnecker (2003) conclude that even for estimates of the impact of expenditures on research and development the literature is divided. Similarly, there is a considerable variation in estimates of the effects of government infrastructure spending on private investment and economic growth. For example, Perotti (2005) is critical of estimates of production and cost function-based estimates of the social returns to public capital expenditure which underpin Aschauer's results (Aschauer 1989, 2000). Perotti points out that these approaches have not satisfactorily controlled for joint endogeneity of public and private production inputs and for dynamic macroeconomic effects, and that vector autoregressive modelling approaches that endeavour to tackle these problems have tended to reveal much smaller effects of public capital spending on economic growth.

Further, in many cases there may be regulatory or institutional solutions that could more directly tackle the market impediment. Assessment of fiscal policy initiatives should therefore be made in the context of comparative institutional advantages and should be assessed against an analysis of how private sector responses, coping mechanisms and institutions that would evolve in the absence of policy.

Where it is determined that fiscal policy is the best response, proposals need to be assessed under a robust cost-benefit framework. However, information constraints imply that there are limits to the accuracy of cost-benefit analysis. Aside from the difficulties discussed in the preceding paragraphs, full cost-benefit analysis is difficult because the cost of financing is crucial to determining the impact of the policy. Theoretical and empirical estimates of the effects of government expenditures on growth will be biased unless the cost of financing is explicitly taken into account.[26]

In the strict tax-smoothing approach discussed by CS First Boston (1995), this financing problem is solved by the idea that government expenditure decisions (based on efficiency grounds) can in principle be separated from the taxation financing decisions which in turn are assumed to also be based on efficiency grounds. However, government expenditure or taxation initiatives may induce behavioural responses that result in offsetting effects on growth. In those circumstances the assumption of independent and non-distorting financing decisions may be invalid and the financing of government fiscal initiatives at the margin will not be independent of the fiscal initiatives. However, fiscal institutions are not designed to enable identification of the true marginal economic cost of financing a particular project.

Consistent with this argument, Gemmell, Kneller and Sanz (2007) find that in OECD countries, fiscal variables (taxes, expenditures and budget deficit ratios) are often stationary implying that growth-affecting fiscal initiatives are often reversed. This implies that when governments have increased productive expenditures with growth-enhancing consequences, they have simultaneously tended to finance them with increases in growth-inhibiting taxes.

[26] Theoretical models that demonstrate the importance of the choice of tax financing in determining the growth effects of government expenditures include those developed by Barro (1990), Cashin (1990) and Barro and Sala-i-Martin (1992).

Another implication of the previous discussion is that evaluation of proposals should not simply be limited to new fiscal proposals but should also be applied to the existing expenditure base in order to determine whether the funding of new initiatives can be more efficiently provided by substitution of prevailing programmes rather than new taxes.

Political economy literature also highlights constraints on the political process providing support for proposals based on a sound cost-benefit analysis, and growth enhancing initiatives. A growing body of literature has, for example, examined the interaction between income distribution, political behaviour and growth. Alesina and Rodrik (1994) and Persson and Tabellini (1994), for example, evaluate how democratic institutions deal with distribution issues and how those decisions can influence taxation structures and growth. Recent changes to New Zealand's electoral system may have had implications for the way politics and fiscal decisions interact to influence growth. Wilkinson (2004), for example, argues that incentives for sound value-for-money assessments may be even more problematic today under New Zealand's Mixed Member Proportional representation (MMP) parliamentary political system given each coalition member has an incentive to provide support to their constituents.

## 3.3 What approaches has New Zealand applied?

Mechanisms in New Zealand to support an efficient allocation of public resources are focused on transparency and institutional design. In many areas efficiency is best achieved by introducing market mechanisms and allowing consumer choice. This motivated several privatisations of state assets during the 1980s. However, in cases where state provision is still considered best, an efficient allocation of resources is encouraged by providing discipline on government expenditure and a clear specification of responsibilities.

At the highest level, the Parliamentary Executive is held accountable for the allocation of resources and taxation decisions through the requirement that all government taxation and spending decisions be approved by Parliament. Parliament scrutinises spending decisions through debate and through select committee examination. All new spending proposals must be sanctioned by Parliament through an appropriation. As departments may only incur expenses in accordance with an appropriation, this process gives Ministers control over the allocation of resources (The Treasury, 2005b). Spending and taxation decisions are made transparent by the publication of the annual Budget and government accounts.

From the mid-1980s, New Zealand undertook a series of public sector management reforms in order to support a more efficient allocation of resources. Reforms were motivated by insights from management theory and institutional economics. Management reform was grounded in the principle that resources would be allocated most efficiently when public sector managers were given the freedom to make resource decisions and are held accountable for these decisions. As managers will not necessarily have the same objectives as the Executive, this model requires clear specification of expectations *ex-ante* and the undertaking of an *ex-post* review.[27]

[27] Scott (1996) provides a comprehensive discussion of the New Zealand approach to public sector management. See also Evans, Grimes, Wilkinson and Teece (1996).

The implication of these insights was that the best way to promote public sector performance is through delegating responsibilities to managers within a framework where objectives are clearly specified and lines of responsibility are clear, hence allowing greater responsibility to manage. This is coupled with a corresponding expectation of accountability for results through Central Agency monitoring of the performance of government entities (The Treasury, 2005b).

These principles apply to the management of departments and underlie the Public Finance Act, State Owned Enterprises Act (SOE) 1986, and the Crown Entities Act 2004 (CEs). The State Owned Enterprises Act 1986 is also aimed at improving resource allocation by requiring that SOEs be run along commercial lines (Janssen, 2001). SOEs and CEs represent a significant portion of the government balance sheet, being around 40% of total government assets in 2006/07.

## 3.4 Fiscal structure outcomes

The New Zealand public sector management reforms were intended to improve the efficiency of resource allocation. However, significant challenges still remain. Strong revenue growth over recent years has allowed government expenditure to increase in nominal terms and as a percentage of GDP without increasing the debt ratio. Most of the increase in expenditure has been in the areas of health and education (see Figure 4).

One criticism levelled at the New Zealand approach is "[I]ts failure to do more to impose value-for-money disciplines on new and existing government spending." (Wilkinson, 2004). Wilkinson argues that greater use of top-down measures, such as a revenue or expenditure objective, could provide greater discipline. Although the specification of a debt objective forces government to prioritise expenditure, Wilkinson notes that it provides no top-down constraint on the level of expenditure or taxes, provides limited fiscal discipline in a growing economy and is not specifically focused on delivering value for money. Rae (2002) also criticises the system for not providing any formal requirements to assess baseline expenditure. In practice, reassessment of baseline expenditure has been difficult.

Although New Zealand's tax system remains one of the most broadly based and comprehensive in the OECD (Dalsgaard, 2001, page 4), government has shown a willingness to use the tax system to address distribution goals and advance other areas of economic policy. This is articulated in the Government's revenue strategy which includes the following statements: "The government's wider policy objectives for the next three years include encouraging productivity, growth and savings. The quality and design of tax policy has an important role to play in support of these objectives", and "The government will consider the use of tax exemptions and concessions only in the context of the full range of policy options and only if the benefits can be shown to outweigh the costs for New Zealand." (Fiscal Strategy Report, Budget 2007, page 57).

Changes to the tax system over recent years include making the system more progressive with the increase in the top personal tax rate from 33% to 39% in 1999. The proportion of persons paying personal income taxation subject to the 39% rate has increased from about 6% in 1999 to about 12% in 2007. This change has lifted the marginal tax wedge on labour (as measured by the marginal income tax rate at 100% of average worker earnings), and lifted the marginal tax wedge above that for Australia (OECD, 2007, Figure 7). Nevertheless, the degree of progression of the New Zealand income tax structure appears to remain relatively low compared to the income taxation structures in many other

OECD economies (OECD, 2007, Figure 8) and the implicit tax on continued work in early retirement remains relatively low.

Other changes include the introduction of R&D tax credits to address concerns about relatively low rates of private business investment and measured R&D spending, and changes to investment taxation through the introduction of the Portfolio Investment Entity regime. A reduction in the corporate taxation rate from 33% to 30% took effect on 1st April 2008. During the past decade, average corporate tax rates in developed economies gradually declined to the extent that, whereas a decade ago New Zealand's corporate tax rate was well below the OECD average, it gradually rose above the OECD average and in 2006 was the 9th highest rate in the OECD. The April 2008 reduction brings the New Zealand corporate rate closer to, but still slightly above, the OECD average corporate rate.

# 4 Fiscal stabilisation

## 4.1 Why is stabilisation policy important?

The purpose of a macroeconomic stabilisation policy is essentially to facilitate the adjustment of aggregate demand toward its equilibrium path when there are 'shocks' which cause a significant deviation. Aggregate supply, driven by demographic trends, labour and capital inputs, and technological progress, will at times evolve slower than aggregate demand. Aggregate demand, if forced away from the equilibrium level of aggregate supply, may experience large and prolonged deviations because of adjustment rigidities across the economy. Stabilisation policy is motivated by the argument that deviations of demand and output from equilibrium (which in principle would imply more volatile output growth) can have an adverse impact on long-term GDP. These adverse effects may arise from inflation, uncertainty, hysteresis effects, and costly sudden adjustments.

In New Zealand, as is common in most developed countries that are not part of a currency union, the primary responsibility for maintaining macroeconomic stability has been assigned to the central bank. Generally countries consider it appropriate to allow "automatic" fiscal stabilisers to operate to ameliorate the effects of demand or supply shocks. However, apart from this view, there is not a clear consensus amongst countries as to the appropriate role of fiscal policy in macroeconomic stabilisation.

## 4.2 Why do Central Banks have a primary role in macroeconomic stabilisation?

The "new consensus assignment" represents the view that active consideration of macroeconomic stability and particularly price stability should be solely the responsibility of the central bank, with the role of fiscal policy limited to the operation of automatic fiscal stabilisers. This view emerged after many countries experienced political business cycles which contributed to high inflation in the 1970s and 1980s. New Zealand was part of this experience. Wheeler (1991), for example, concluded that: "[E]xtensive use of fiscal policy in a demand management role did not produce sustainable growth and expansionary fiscal policy led to a rapid deterioration in the net debt position."

International experience and emerging theoretical developments during the 1970s and 1980s spawned a reconsideration of the stabilisation role of fiscal policy. There were two main arguments against the active use of fiscal policy for macroeconomic stabilisation. One argument was based on the idea that fiscal policy could not affect aggregate demand owing to offsetting private sector behaviour. The other was based around the interaction of the incentives of politicians and expectations of private agents which lead to time-inconsistent discretionary fiscal and monetary policy. The second argument was particularly important in influencing thinking about the role and design of institutions and the idea that active or discretionary stabilisation policy needs to be undertaken by an entity independent of government.

### 4.2.1 Short-run impact of fiscal policy on demand

One reason why changes in fiscal policy may not impact on aggregate demand is that if private agents are forward-looking, their Ricardian behaviour will simply offset the impact of discretionary fiscal policy actions.[28] In response to an increase in government expenditures, households may increase saving in anticipation of the need to pay higher taxes in the future. Another reason why fiscal policy impulses may be impotent is that it may crowd out (or in) private sector activity via changes in interest rates and exchange rates.

Empirical and theoretical research tends to imply that fiscal policy does not fully crowd out private sector demand and can in fact impact on the business cycle. Solow (2005) and others argue that the weight of empirical evidence suggests that any Ricardian effects are well below the extent required for full crowding out of private demand. Theoretical models show that even with households displaying Ricardian features, the presence of labour market rigidities, in particular, can result in fiscal policy impacting on the business cycle (see Leith and Wren-Lewis, 2005).[29]

Recent vector autoregressive modelling also implies less than full crowding out. For example, Blanchard and Perotti (2002) and Perotti (2004) estimate the impact of government spending and net taxes for several developed economies.[30] A similar approach has been applied to the New Zealand data by Claus, Gill, Lee and McLellan (2006). They find that impulses to government spending and net taxation lead to short-run changes in domestic output, with government spending impulses having a larger impact than net taxation impulses. The expenditure and net taxation multipliers for New Zealand appear to be smaller than for the larger economies estimated by Blanchard and Perotti (2002) and Perotti (2004), suggesting more significant leakages or crowding out in

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[28] This condition only holds under certain special conditions, including the requirement that agents are not liquidity constrained.

[29] A larger impact will be found if agents are assumed to be liquidity constrained as well. Leith and Wren-Lewis impose an artificial technology shock on output and show that a combination of fiscal instruments (that is, direct tax, indirect tax, and government spending) can completely eliminate the deadweight welfare loss, reflecting nominal rigidities across wages and prices, of stabilisation. In contrast, using monetary policy alone can offset only around 40% of the welfare loss. Fiscal policy is shown to be potent in the model economy, not because of a lack of conditions required to for Ricardian Equivalence to hold, but because taxes influence the relative prices of work and leisure and therefore the supply of labour. Indirect taxation, in contrast to monetary policy, can circumvent distortions associated with monopolistic competitive behaviour across product markets.

[30] Blanchard and Perotti estimate fiscal responses for US. Perotti (2004) estimates fiscal impulses for US, UK, Australia, Germany and Canada.

a small open economy.[31] Thus, although fiscal policy actions may be offset to some degree, fiscal policy does impact on short-run demand. Furthermore, just as we found that the composition of fiscal policy matters for economic growth, the differences between the spending and net taxation multipliers revealed by these vector-autoregressive models illustrates the importance of taking into consideration changes in the composition of spending and taxation when assessing the impact of fiscal policy on the business cycle.[32]

### 4.2.2 Institutional issues

The second set of arguments about the effectiveness of fiscal policy stems from Kydland and Prescott (1977). They show that where a policy-maker's objective is to maximise social welfare, they have an incentive *ex-ante* to prescribe a zero inflation policy (consistent with maintaining output at potential) but *ex-post* to generate surprise inflation and temporarily higher demand. As the policy-maker will not be able to commit credibly to the low inflation outcome *ex-ante*, agents expect the higher inflation outcome and hence this is what actually occurs. This results in an outcome inferior to one under zero inflation. The implication of this result is that while politicians care about social welfare, they will not have the right incentives to achieve sustained price stability.

These political economy ideas mean that politicians do not necessarily have the right incentives to effectively implement discretionary stabilisation policy, whether that is done by fiscal or monetary policy. One institutional-based solution to this problem is to make stabilisation policy, or price stability, the responsibility of an independent non-political entity and to ensure that contractually they are committed to that objective and that commitment is credible.

The choice has typically been to place responsibility for active consideration of macroeconomic stabilisation in the hands of an "independent" central bank through, for example, specification of an objective to maintain price stability whilst limiting the role of fiscal policy to the operation of the automatic fiscal stabilisers. In principle, this responsibility could have been assigned to an independent fiscal authority which, if provided with the scope to vary taxation, such as varying the rate of the Goods and Services Tax (GST), as proposed by Buiter (2006) for example, could have overcome the well known inside lags typically associated with fiscal decisions when those decisions are part of the legislative process. A number of other important considerations have influenced this choice of solution to the commitment problem including that fact that fiscal policy tends to have multiple objectives, tends to be subject to long decision and implementation ("inside") lags, and that adjusting government spending and taxation rates may create uncertainty and may result in other government objectives not being fulfilled. This final concern in particular is one area in which the structural and stabilisation objectives of fiscal policy can potentially be in conflict.

The international experience with inflation targeting suggests that, in most circumstances, the combination of the central bank policy and automatic fiscal stabilisers will be capable of stabilising inflation (and hence output) in the face of exogenous shocks to the economy (Mishkin and Schmidt-Hebbel, 2001). However, as Allsopp and Vines (2005) state, that

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[31] In an expanded version of their model, Claus, *et a*l find that there is a difference between impulses to taxation and to transfers, further reinforcing the importance of distinguishing between the components of fiscal policy.

[32] This point has long been understood from the insights of the classical balanced budget multiplier.

leaves the question of the role of fiscal policy within an inflation-targeting regime where the main macroeconomic concerns are assigned to monetary policy.

## 4.3 What is the role of fiscal policy within an inflation targeting framework?

### 4.3.1 Macroeconomic impacts of fiscal policy

The point was made earlier in Section 2.1 that when fiscal policy is not sustainable the monetary authority may be unable to control inflation. Hence, sustainable fiscal policy is a prerequisite of a successful inflation-targeting regime if private agents are well informed and forward looking. Theoretical macroeconomic models evaluating the implications of game-theoretic conflicts between monetary and fiscal authorities have also revealed that fiscal sustainability is not a sufficient condition and that conflicting policy objectives can result in fiscal policy actions frustrating the stabilisation objectives of the monetary policy authority (see for example Buckle and Stemp, 1991). Fiscal policy should not, therefore, be operated entirely independently of monetary policy. But the extent to which fiscal policy should take account of the business cycle in its coordination with monetary policy in achieving short-run macroeconomic stabilisation is not a settled issue.

One view is that when there is an independent inflation-targeting central bank, discretionary fiscal policy need not pay any attention to the cycle. Buiter (2006), for example, argues that limiting the role of fiscal policy in stabilisation to the automatic stabilisers, which arise on the operating budget, is appropriate. He argues public investment expenditure cannot always be immediately switched on or off, or varied in scale, according to the cycle, without causing serious efficiency losses.

In contrast, Allsopp and Vines (2005) argue fiscal policy should take account of macroeconomic stability concerns because fiscal policy influences the mix of policy and therefore the configuration of interest and exchange rates. In particular, they argue that there will be times when fiscal policy will itself be the “shock” to demand and the output gap to which monetary policy must respond. Under normal circumstances the monetary authority will be able to react to a fiscal shock by changing interest rates. However, a lack of policy coordination where a fiscal stimulus is too pro-cyclical may result in monetary policy having to tighten to a greater degree than otherwise to achieve inflation stability. A fiscal expansion that occurs when the economy is operating above trend output will provoke a response from the central bank and require a greater adjustment from the private sector than if a similar expansion had occurred when demand was below trend output. Allsopp and Vines argue that these costs should be taken into account in government fiscal decisions.

The strength of these respective arguments depends on whether the consequences of monetary policy responses are likely to be more damaging than the consequences of discretionary taxation and government expenditure policy that takes account of the stage of the business cycle. The risks of a more active fiscal policy have already been touched on and depend on whether fiscal institutions can be designed in a way so that fiscal policy can take account of macroeconomic stabilisation concerns but not be subject to the political economy risks and the risks of adverse long-term impacts on fiscal structure. The risks for monetary policy include the possibility of adverse effects on productivity (arising from uncertainty and real interest rate fluctuations) and the political economy consequences of higher interest rates or the differential sectoral effects of fluctuations in the real exchange rate

that may pose a threat to the sustainability of the framework for monetary policy. These have been issues at the forefront of recent New Zealand debate.

There are, nevertheless, circumstances in which the case for a stronger focus by fiscal policy on the business cycle is more clearly warranted. These tend to be circumstances in which monetary policy is ineffective.

### 4.3.2 Fiscal policy when monetary policy is ineffective

One circumstance under which monetary policy becomes ineffective is when there is a "liquidity trap" situation, such as that which Krugman (2005) argues applied in Japan during the 1990s. In this environment monetary policy is ineffective to stimulate activity because the nominal interest rate has already hit its lower bound. Arguably the US reached a similar situation after the technology bubble burst at the start of the millennium. Fiscal policy could be used in these circumstances to kick-start growth in domestic demand. The authorities face a dilemma, however, if the combination of low growth and fiscal expansion threatens fiscal sustainability (Allsopp, 2005). This potential problem illustrates the importance of forward-looking monetary policy that not only dampens demand in the face of expansionary shocks, but also tries to avoid the emergence of a "liquidity trap" (Ahearne, Gagnon, Haltmaier and Kamin, 2002).[33]

Another circumstance in which the effectiveness of monetary policy is compromised is where the financial system impedes the effective operation of monetary policy instruments. For example, according to Gianella (2007), the level of monetization and financial intermediation by banks and financial markets is not sufficiently developed in Russia to facilitate a credit channel for central-bank induced interest rates changes. The level of financial system development evidently hampers the efficient circulation of liquidity and tends to generate interest rate volatility. In circumstances when domestic inflation and the real exchange rate are being significantly influenced by oil price-generated income growth, monetary policy has not been particularly effective and fiscal policy has been the primary instrument of macroeconomic stabilisation policy. One of the factors motivating this assignment has been concern that, despite low effectiveness, reliance on monetary policy to dampen the inflationary consequences of the terms of trade growth could accentuate the real exchange rate appreciation and compromise efforts to diversify the production base of the Russian economy.

Different concerns have been raised in New Zealand about the effectiveness and impact of monetary policy in the current environment. A number of factors have come together over the most recent business cycle upswing to test the robustness of monetary policy as an effective instrument for macroeconomic stabilisation policy. One of those factors has been, as in Russia, a strong rise in the commodity terms of trade and potential implications of further appreciation of the real exchange rate.

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[33] Buiter (2006) commented that "if ever New Zealand found itself in a deep, 1930s-style slump, or in a Japanese-style liquidity trap, expansionary fiscal policy, combined with expansionary quantitative-easing-style monetary policy, would be the appropriate response. Such exceptional, self-evident conditions calling for discretionary fiscal policy are, however, quite unlike the modest cyclical fluctuations that have characterised New Zealand since the beginning of inflation targeting." Given this situation is not currently relevant we do not discuss further.

The recent New Zealand business cycle upswing has been associated with a strong migration inflow, an exceptional rise in housing demand and household wealth and recently an exceptional rise in dairy prices. Fiscal policy has also been cited by the Reserve Bank as one factor stimulating domestic demand (Reserve Bank of New Zealand, 2007). As housing tends to be a larger share of total wealth of New Zealand households than in most other developed economies, the potential wealth effects of rising real house prices may be stronger than in other countries with consequentially more significant implications for domestic demand.

Moreover, some have argued that financial developments, including convergence of long-term interest rates on international rates, robust international financial arbitrage (the 'carry trade') and mortgage innovations, have combined to alter the way domestic monetary policy impacted on demand particularly during 2005 to 2006 (see for example the discussion in Grenville, 2006). As a consequence, the transmission channel for monetary policy, it is argued, shifted more toward short-term interest rates and the exchange rate to the extent that the New Zealand dollar rose during 2007 to the highest level against the US dollar since it was floated in 1985. Concerns as to the impact of the appreciation of the exchange rate on exporters have been one of the motivations for recent assessment of the merits of the present macroeconomic policy framework, despite the fact that the impact of exchange rate volatility on long-run growth is unclear.[34]

New Zealand monetary policy has therefore recently had to contend with some typical demand shocks, but in an evolving international and domestic financial environment that altered the weights on the transmission mechanisms of monetary policy. Policy-makers have been active in evaluating the extent to which fiscal policy could be more counter-cyclical and could better coordinate with monetary policy and whether regulations and taxation policy could be improved to ameliorate the housing cycle.[35]

## 4.4 What approaches has New Zealand applied?

### 4.4.1 Fiscal framework

The principles of responsible fiscal management in the Public Finance Act 1989 (PFA) do not explicitly require that government should take stability concerns into account. However, they allow the government of the day to operate a fiscal policy which takes stability into account, for example, by allowing government to run a balanced operating budget on average once a prudent level of debt has been reached and allowing temporary departures from the principles. This does not necessarily ensure, however, that capital expenditure decisions that are consistent with the debt objective will necessarily take short-run stability conditions into account.

One of the reasons for not setting mandatory targets in the PFA was to allow fiscal policy flexibility to respond to short run circumstances (Janssen, 2001). The PFA also supports macroeconomic stability in that sustainable public finances are a pre-requisite for maintaining low inflation and achieving macroeconomic stability.

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[34] These concerns have culminated in the establishment of a Parliamentary Select Committee Inquiry into the future monetary policy framework, http://www.parliament.nz/en-NZ/SC/SubmCalled/e/5/9/e5978d6efbd74c0ba14f7e05ca86b144.htm

[35] See in particular the Supplementary Stabilisation Report prepared by Reserve Bank of New Zealand and The Treasury (2006), and the collection of papers in Buckle and Drew (2006).

### 4.4.2 Fiscal policy and management

Consistent with the PFA, the current Government's long-term objectives allow stability to be taken into account through the automatic stabilisers by specifying the operating balance objective to apply over the cycle. Although the Government does not have a rule or stated intention to run an active counter-cyclical fiscal policy, stability issues are considered as part of the annual Budget-setting process and in particular in the setting of the allowances for new initiatives. The setting and publication of these allowances also supports macroeconomic stability by providing the private sector and the Reserve Bank with greater certainty as to government's plans (Vandermolen, 2002, page 5).

In response to concerns about macroeconomic "imbalances", the Government has recently shown an increasing willingness to adjust new operating and capital expenditure plans in response to macroeconomic conditions. For example, some initiatives in Budget 2007 were deliberately designed with short-term stability concerns in mind, in conjunction with medium term considerations. The introduction to the 2007 FSR stated that "in designing Budget 2007 we have had both the short-term and the long-term in mind. The overarching theme of saving and investing is intended to minimise the impact of government on some of the imbalances which have built up in the economy" (Minister of Finance, 2007, page 38 in the Budget 2007 Fiscal Strategy Report).

There are no formal requirements for the government to present a measure of the impact of fiscal policy on the macro-economy. However, significant impacts of fiscal policy decisions on inflation may be made transparent in the Reserve Bank's monetary policy statements and in fiscal information reported by the Treasury. The fiscal impulse indicator, discussed below, is published on the Treasury website and at times used in the Fiscal Strategy Report. There is also frequent communication between the Treasury and the Reserve Bank about the economic outlook, including fiscal policy intentions.

## 4.5 Fiscal stabilisation outcomes

New Zealand's recent experience with fiscal stabilisation can be divided into an assessment of the automatic stabilisers and of discretionary fiscal policy changes.

The degree to which taxes and transfers co-vary with the level of economic activity is critical to determining the degree of automatic fiscal stabilisation. The degree of progression in New Zealand's income tax structure means that tax revenue increases by a greater proportion than the increase in GDP (Fowlie, 1999; Tam and Kirkham, 2001). Over the period 1987-2005 New Zealand's tax and expenditure system resulted in "reasonably pronounced counter-cyclical behaviour of the government primary (non-interest) deficit" (Buiter, 2006, Figure 23, page 50). But the presence of automatic stabilisers does not guarantee counter-cyclical policy.

Assessing the extent to which discretionary fiscal policy has been pro-cyclical or counter-cyclical poses significant challenges. Information on whether changes in the economy are cyclical or structural will always be limited. Recent developments in modelling techniques endeavour to allow for the effects of changes in the size of fiscal initiatives, the composition of expenditure and taxation (for example, Blanchard and Perotti, 2002), the level of public debt (for example, Chung and Leeper, 2007; Favero and Giavazzi, 2007) and initial macroeconomic and fiscal conditions (for example, Perotti, 1999; Romer and Romer, 2007a).

The Government's operating surplus has risen markedly since the 1990s. This balance is not sufficient to assess the impact of fiscal policy on domestic demand. The Treasury tends to use a suite of fiscal indicators to assess the likely impact of current fiscal policy on the business cycle. One indicator is a fiscal impulse measure based on the change in a cyclically-adjusted fiscal balance (Philip and Janssen, 2002). This indicator attempts to gauge the initial (first round) impact of discretionary fiscal policy (measured by the change in the structural balance) on aggregate domestic demand. Data for this indicator is drawn from the Statement of Cash Flows and the fiscal balance used to derive the indicator is the difference between primary cash from government operations and primary cash payments to operations plus capital cash spending.

Based on current economic information, this measure implies that fiscal policy has tended to restrain short-run demand in most years since 2000, with small injections to demand in 2004 and 2006. However, as the size of the structural surplus is forecast to decline over coming years, this indicator implies that fiscal policy is expected to become less of a constraining influence, with a reasonably significant fiscal impulse indicated for 2007 (see Figure 5). Forecasts of the fiscal impulse have, however, been subject to significant reassessment over recent years.

As Philip and Janssen (2002) recognise, this approach to assessing the impact on domestic demand needs to be viewed with caution. It is designed simply to assess the initial fiscal injection (or contraction) to demand. It does not take account of second round effects, changes in the composition of the fiscal balance, and the way private expectations can influence responses to a fiscal pulse. Furthermore, recent work by Romer and Romer (2007a), using a narrative approach to identify discretionary structural changes to fiscal policy in the USA, suggests that the traditional cyclical adjustments to budget data have a tendency to overstate the derived structural changes in the budget. If this is correct, the fiscal impulse measure may be overstating the size of structural budget balance changes and therefore the size of the derived contraction (or impulse) to domestic demand.

An alternative approach to assessing the impact of fiscal policy on New Zealand GDP using vector-autoregressive (VAR) modelling has been developed by Claus, Gill, Lee and McLellan (2006). This approach attempts to measure both the initial (first round) effects and the induced effects of discretionary fiscal policy on domestic demand by explicitly estimating and incorporating private sector responses and response lags. It also takes account of compositional effects by estimating separately the impact of changes in government expenditure and government revenue on GDP. Data for this VAR-based approach is drawn from Statistics New Zealand's quarterly National Accounts (using SNA93 standards). Although the data are derived on a different conceptual basis from the cash-based series used by Philip and Janssen, the fiscal balance measures are similar.

Refinements of this vector-autoregressive approach are currently being investigated in the Treasury. The results from this VAR work to date suggest that fiscal policy has generally been pro-cyclical during the late 1990s and from 2001 to 2003, and has tended to be pro-cyclical again in 2004 and 2006 (see Figure 6). The estimated size of the fiscal impulses is often smaller and the pattern quite different from that implied by the traditional Treasury measure of fiscal impulse (see Figure 7). This difference reflects, in part, differences in the way discretionary policy changes are identified and the fact that the VAR approach applies different weights for the expenditure and revenue impacts on domestic GDP. When the expenditure and revenue components of the traditional fiscal impulse indicator are weighted by the multipliers derived from the structural VAR model, the size of the traditional fiscal impulses tend to be smaller, although the direction of changes still differ from the fiscal VAR impulses in some periods.

Differences also arise from the fact that the VAR approach explicitly captures the interactions between fiscal variables and the business cycle and explicitly captures some, but not all, fiscal composition effects. Composition effects are likely to have been important. For instance, much of the recent growth in government expenditure has been in areas where a significant demand impact can be expected, such as consumption of non-tradable goods and services, wages of public sector employees and transfers to low and middle-income households (for example, the Working for Families package).

Furthermore, there are various reasons to think that an assessment of the impact of growing taxation revenue growth should take account of the circumstances explaining the taxation revenue growth and how individuals and firms may respond to taxation revenue growth. If households tend to be more likely to be finance-constrained than firms, then it would be important to distinguish between the sources of taxation revenue growth. The strong rise in the government operating surplus in recent years has been in part the consequence of an unexpectedly strong growth in company tax revenues. This taxation growth may have less of a constraining influence on business investment and domestic demand than, say, an equivalent growth in personal income taxation revenue would have on household consumption demand if households are more likely to be finance-constrained than firms.

Similarly, as Dunstan, Hargreaves and Karagedikli (2007) argue, this increase in corporate tax revenue may not have had as large an effect on domestic demand as an equivalent increase in government expenditure. Indicators suggest that government expenditure growth has been strong over recent years. Figure 8 shows government investment expenditure has gradually increased over recent years. Table 2 reveals the relatively strong growth in public sector employment in recent years. This has occurred during a period of very low unemployment and strong private sector demand for labour.

Hence, although the practice of Government setting and publishing short-term intentions is aimed at supporting macroeconomic stability and although Government has recently shown an increasing willingness to adjust new expenditure plans in response to macroeconomic conditions, there is contrasting evidence concerning the actual outcome of discretionary fiscal policy on the business cycle. Improving understanding of the impact of fiscal policy on domestic demand and the business cycle is an area worth further investigation and it is an area in which Treasury is devoting more research. The recent paper by Dungey and Fry (2007) is part of that process.

# 5 Contemporary fiscal issues

The previous sections laid out the reasons why fiscal policy should be viewed through sustainability, structure and stability lenses. These roles are not independent and this property can sometimes give rise to awkward policy trade-offs. In this section we first briefly discuss some of the connections between fiscal policy decisions relating to structure, sustainability and stability. We then turn to a discussion of contemporary New Zealand fiscal issues under each aspect of fiscal policy and draw out how these connections and possible trade-offs can have a bearing on fiscal policy choices and we consider possible institutional solutions to these trade-offs.

## 5.1 Implications of links between sustainability, structure and stabilisation

The sustainability, structure and stability roles of fiscal policy are not independent. The structure of fiscal policy has important implications for fiscal sustainability and the effectiveness of the stabilisation role of fiscal policy. To illustrate, the size and structure of the tax base determines the level of resources available for government expenditure and hence impacts on sustainability. The design of the tax and welfare systems will impact on the size and operation of automatic fiscal stabilisers and therefore the contribution of fiscal policy to macroeconomic stability. Similarly, fiscal sustainability requirements can impose a constraint on the overall level and choice of the structure of government expenditure and transfers. Choices around the options for pension policies, for example, and how those options interact with an ageing population will have implications for fiscal sustainability and for rates of labour force participation.

There are circumstances under which there are trade-offs between these high-level fiscal objectives and circumstances under which they are mutually reinforcing. For example, requiring government to balance the operating budget over the cycle supports sustainability by ensuring temporary increases in revenue are not spent on on-going expenditure, and supports stability by allowing the operation of the automatic stabilisers. However, stability and structural objectives may also be in conflict in circumstances when the business cycle is in a phase of excess demand and the preferred structural initiatives are expected to have stronger domestic demand effects in the short-term even though they may have beneficial long-term supply effects.

Consequently, these connections will influence policy choices and policy design. The current New Zealand debate around the application of recent fiscal surpluses is an illustration. One choice, for example, would be to reduce taxation revenue. Recent VAR modelling suggests that discretionary reductions in taxation revenue could be expected to eventually increase GDP growth (Claus, Gill, Lee and McLellan, 2006). To what extent should government be concerned with the possibility that the immediate effects could raise domestic demand, real interest rates and real exchange rates? Further, any reduction in surpluses in the present period needs to be consistent with Government's 10-year fiscal sustainability objectives.

The potential for policy trade-offs of this type raises three critical questions. One question is: how much weight should governments place on each of the three roles? If weight should be attached to each role, at least at some points in time, is the present fiscal framework appropriately designed to support each role or should greater weight be placed on sustainability or stability? Consistent with The Public Finance Act, it is well accepted that government fiscal policy should be sustainable. The view that fiscal structure is important for growth is supported by empirical research, but the appropriate design of institutions and rules to facilitate sound decisions that tackle "the fine print of the public sector" remain a challenge. The role of fiscal policy stabilisation is an aspect of fiscal policy where a wide diversity of views prevails. In part this is due to uncertainty around the growth effects of interest rate and exchange rate volatility, but also the political economy issues. A second question is the time-frame over which it is appropriate to assess sustainability? Is the current requirement that government set objectives over a 10 year horizon adequate given looming demographic pressures which arise over a long term horizon? The third question is whether fiscal rules can be designed that can reduce potential conflicts between these roles and aid prioritisation of multiple objectives?

We do not have definitive answers, but the issues discussed in Sections 2, 3 and 4 need to be weighed up in coming to an answer to these questions. The following sections use some of the contemporary New Zealand policy issues to highlight possible areas of further work that may strengthen the fiscal framework. Section 5.2 discusses the role of fiscal rules in fiscal structure. Section 5.3 discusses rules-based approaches to taking account of macro-stability in setting the annual Budget. Section 5.4 discusses recent debate over the role of stability in fiscal structure.

## 5.2 Could fiscal rules improve fiscal structure?

The Public Finance Act 1989 requires government to maintain a prudent level of debt. What constitutes a prudent level of debt is for the government to define. However, the only requirement in relation to the structure of taxes and expenditure is the requirement that government pursue policies which are consistent with a reasonable degree of certainty and predictability of tax rates in the future.

Experience over recent years has shown that a debt constraint can provide discipline on the overall level of expenditure, and hence improve prioritisation. However, a debt constraint on its own may impose weak discipline on expenditure in times of strong taxation revenue growth. This has motivated some to argue in favour of fiscal rules which do not just focus on debt and the operating balance but provide a direct constraint on expenditure or taxation. While these rules may not be motivated by structural considerations, when combined with a debt limit they may, nevertheless, have implications for the quality of government expenditure decisions.

One approach is to apply limits to the level of taxes or expenditure. These might be expected to act as a binding constraint that forces governments to ensure they select projects with the highest benefit-cost ratios. Hong Kong, for example, has a general principle that over time the growth rate of expenditure should not exceed that of the economy. This rule is equivalent to an expenditure-to-GDP ratio limit. Barker and Philip (2007) review a number of examples where countries have applied multi-year expenditure limits. Unfortunately the evidence about the impact these limits have on the quality of fiscal decisions is limited. Although expenditure limits may provide incentives for departments to consider the priority of new and existing initiatives, there is evidence that suggests there are risks with these types of rules that, in times of fiscal stress (revenue decline) or declining growth, the expenditure limits are met by reductions to “productive” spending.

Experience with taxation revenue limits applied by US States is discussed by Wilkinson (2004). In some cases these limits have been effective at recycling above-target taxation revenue. However, taxation limits that are not supported by strong controls over expenditure can compromise fiscal sustainability when they result in insufficient revenue being raised. The State of Colorado, for example, has suffered fiscal stress which has been attributed in part to its taxation limit rules (Wilkinson, 2004, page 54). Furthermore, both expenditure and taxation limits, particularly if expressed in terms of a ratio of GDP and if rigidly adhered to, could have the effect of offsetting the role of automatic fiscal stabilisers and compromise macroeconomic stability.

Consideration has been given in New Zealand to rules that sharpen incentives to prioritise government spending by providing incentives to government departments to find savings in base-line expenditure. In designing such rules, questions include whether the rule should be voluntary or mandatory and the best way to provide incentives for departments

to find savings. As central agencies have limited information on the value-for-money of expenditure programs, voluntary rules to find savings are more likely to find the most valuable savings than are mandatory rules. However, under a voluntary rule departments will have the best incentives to reprioritise expenditure if they are able to keep any savings identified. This will limit the amount of re-prioritisation as there will be a high correlation between where savings are found and where they are reinvested. It is also important that any such rule is specified in a way to find genuine savings. This would suggest specifying the rules so as not to apply to cyclical changes in expenditure.

## 5.3 Could rules relating to sustainability take more account of stability?

Fiscal rules and institutions are generally designed to support both fiscal sustainability and stability. The current approach in New Zealand supports the operation of the automatic stabilisers on the operating budget, but leaves Government some discretion as to the timing of capital expenditure. Barker and Philip (2007) analyse approaches taken in other countries to taking account of fiscal stability in setting the annual Budget. In general, fiscal rules and institutions seek to support monetary policy through allowing or requiring the operation of automatic fiscal stabilisers. Countries do not generally seek to implement strict rules which require active fiscal stabilisation. Nevertheless, some countries, such as those operating a fixed exchange rate regime, do seek to use active fiscal policy for stabilisation purposes. We analyse three possible approaches.

One approach some countries follow is to target a structural budget balance. This approach is followed in Chile, for example, where there is a fiscal rule specifying that government spending is equal to the sum of permanent taxation and permanent copper revenues. Cyclical increases in revenue are ring-fenced in the Copper Stabilization Fund. In Norway, surplus oil revenues are saved in the Government Pension Fund - Global. The Fund was established in order to offset the effects of declining oil income expected over the longer-term, and to smooth out the disruptive effect of volatile oil prices. Casual evidence from Norway and Chile suggests that these rules may have helped stabilise the exchange rate and current account balance over the business cycle. An equivalent approach for New Zealand could be to target the structural operating balance; that is the operating budget balance adjusted for cyclical factors. The structural balance could also be adjusted for the terms of trade. The terms of trade has a significant influence on fluctuations in New Zealand GDP (Buckle, Kim, Kirkham, McLellan and Sharma, 2007). However, the link between the terms of trade and fiscal revenue is weaker than in, for example, Norway and Chile. Furthermore, targeting a terms of trade-adjusted balance may be more difficult in New Zealand because the more diversified make-up of prices that determine New Zealand's terms of trade may make decomposition of changes into structural or cyclical components more difficult.

Limits on government expenditure growth, discussed in the previous section, is another approach that could be aimed at improving both sustainability and stability. The aim of expenditure limits is to enhance fiscal sustainability by providing expenditure control. This approach would also complement stability if the expenditure limit prevented pro-cyclical changes to expenditure. Countries that set limits on the level of expenditure include Sweden, the Netherlands, the UK, Finland and the US. This approach is similar to the provisions approach that operated in New Zealand. As discussed earlier, the shortfalls of this approach were that it did not allow decision-makers to focus on the medium-term debt and operating balance impacts of their decisions, and it gave rise to arbitrary distinctions as to what did and did not count within the limit. Had such a rule operated over recent

years in New Zealand, it is questionable whether expenditure limits would have been politically sustainable in the face of frequent upward adjustments to the structural operating balance.

A third approach could be to specify a rule which states that when realised fiscal cash balances are higher than forecast in the prior year, they will be allocated to increasing net public assets (the rule would also be applied on the down-side). This type of rule has been suggested in New Zealand (Reserve Bank of New Zealand, 2007). Because realised cash balances can differ from forecasts for a number of reasons, only some of which are related to the business cycle, this rule will best support macroeconomic stability when it is targeted. It could, for example, specify that unexpectedly high realised cash balances that arise as a result of a larger than expected output gap will be allocated to public debt reduction. This type of rule may also support sustainability if it helped avoid a tendency toward asymmetric treatment of unexpected changes to fiscal balances. A number of countries have recently taken the approach of using windfalls to build assets or reduce liabilities. For example, Australia used proceeds from the sale of Telstra to build the Future Fund. Canada has a rule whereby unexpected increases in revenue will be used for debt reduction, although the rationale for the rule was essentially to reduce public debt.

A more radical approach is the establishment of a fiscal stabilisation authority or 'Fiscal Policy Committee' with a small number of fiscal instruments chosen for their potency in influencing the business cycle (see for example Wren-Lewis, 2003; Wyplosz, 2005). For example, Buiter (2006) suggests that for New Zealand a variable GST rate could be a suitable instrument. The idea is that the authority would only be allowed to make temporary changes in these instruments in order to provide an additional instrument to support traditional monetary policy instruments. Objections may, however, be raised that such approaches may be inconsistent with standing constitutional principles (such as the principle that taxation can only be imposed by Parliament) and may result in high compliance costs.

## 5.4 Should structure be determined by stability concerns?

Recent debate in New Zealand has also explored the linkages between fiscal structure and stability. One area of interest has been whether the taxation structure and regulations applying to the housing market are exacerbating volatility of house prices and hence exacerbating excess demand pressures.

The role of housing in the current business cycle was part of the motivation for a joint investigation by the Reserve Bank of New Zealand and the Treasury to explore whether there are supplementary stabilisation instruments available which could be deployed to complement monetary policy and in particular "enable less reliance to be placed on the OCR and, hence reduce some of the pressure on the exchange rate" (Reserve Bank of New Zealand and the Treasury, 2006, paragraph 9, page 8). Measures to slow house price appreciation were given particular consideration. These issues continue to be considered by a Parliamentary Select Committee established to review the operation of monetary policy in New Zealand and were considered in a recent conference hosted by the Treasury and Reserve Bank of New Zealand in December 2007 (See Buckle and Drew, 2008).

This recent experience has highlighted the issues associated with using discretionary fiscal and regulatory policy as instruments of stabilisation policy. In particular, without

institutional solutions, fiscal or regulatory options have proven to suffer from implementation delays, have tended to raise issues of conflicts with other objectives, or have high costs when considered on micro-efficiency grounds. They may also raise distributional concerns. We discuss some of the options raised to highlight the institutional issues associated with fiscal policy.

To illustrate the policy lags, a year out from undertaking this work and despite extensive debate, the only proposal that has been implemented by Government has been a provision made in the 2007 Budget of an additional $NZ14.6 million over the next three years to strengthen IRD's auditing of property transactions.

A proposal considered by the Reserve Bank of New Zealand and Treasury (2006) is to ring-fence losses on investment properties. This would remove the option available to property investors to use losses on rental property to offset tax liabilities from profits made elsewhere in their portfolio. This proposal would treat property losses differently from other losses, as under the Income Tax Act all losses are currently able to be offset against any form of income. In support of this exception it is argued that the degree of leverage available on rental properties, as opposed to other assets, provides a bias towards investing in property and hence has accentuated the property cycle.

Another option considered was a Mortgage Interest Levy (MIL). This is a discretionary levy on the interest rate applying to mortgages for residential properties, to be applied or removed at appropriate stages of the housing market cycle. The attraction of this idea is that it would apply a wedge between the interest rates paid by domestic borrowers and those interest rates available to foreign lenders, thereby partially substituting for increases in the Official Cash Rate but with less effect on the exchange rate. In addition to questions about effectiveness, this option illustrated the constitutional issues that would arise in devolving responsibility for fiscal policy to an independent authority. Giving the Governor of the Reserve Bank, for example, the power to impose the levy may raise concerns that it would conflict with the long-standing general principle that taxation cannot be imposed without the explicit involvement of Parliament.

One regulatory proposal that would seem to have merit on micro-efficiency grounds is the proposal to ease constraints on housing supply, including land supply. Recent research indicates that the cost of land relative to the costs of house construction has been a significant cause of rising house prices in New Zealand over the last 25 years. Grimes and Aitken (2006) find that house prices respond more strongly to demand shocks in New Zealand local authorities in which housing supply responsiveness is low compared with those in which supply responsiveness is high. However, changing these requirements takes time as they are set out in a multitude of council rules. Further, freeing up land for more housing may conflict with other objectives such as limiting urban sprawl and current plans relating to infrastructure investment. No changes have yet been made in this area.

# 6 Conclusions

This paper has discussed how fiscal policy can support long-run growth through sustainability and structure and how it can best contribute to macroeconomic stability. An aim of the paper is to understand the institutional structures which are likely to result in good decision-making in terms of each of these lenses.

Sustainable public finances are important to ensure that the cost of financing government expenditure is minimised and to ensure that the financing of government expenditure does not impose large costs on the private sector through impacts on interest rates, exchange rates and inflation. Political economy issues, such as the incentive of politicians to shift costs into the future, mean that sustainable fiscal policy will most likely be achieved through the use of fiscal rules and formal institutions. The New Zealand framework is based on a set of legislated principles and transparency requirements. Within this framework government specifies its objectives for fiscal aggregates over a 10-year horizon.

This framework has been successful in delivering sustainable fiscal outcomes, at least over a medium term time-frame. As evidence of this, New Zealand is one of the few countries in the world in a net public financial asset position. Further, New Zealand has been in a position where operating surpluses in the current period can be used to pre-fund some of the future expected costs associated with population ageing. However, despite this level of pre-funding, projections over a 40-year horizon show that a continuation of current policy settings or expenditure growth rates would result in a deterioration of the fiscal position over the longer term. How much weight current policy decisions should place on these long-term projections is unclear and at present there does not appear to be a clear basis for making this type of assessment.

Fiscal structure refers to the composition of government expenditure and taxation. The development of endogenous growth models has identified several fiscal policy instruments that have the potential to influence long-run growth. There is also a widely respected view that a low-rate broad-based tax system supports long-run growth, although as noted there may be times when departures from this principle can be justified. Information constraints, particularly in relation to the net benefits of government expenditure initiatives, mean government faces significant challenges in exploiting the insights of endogenous growth models and in evaluating the full cost of policy initiatives, particularly the cost of financing. This implies that the institutional framework for fiscal policy decisions is important.

New Zealand has sought to overcome some of the information challenges through the devolution of decision making on expenditure to those with the most information, within a framework that specifies the objectives of policy and provides for accountability and monitoring. However, challenges remain in ensuring that government expenditure is subject to scrutiny on a sound value-for-money basis and in achieving an efficient tax structure. Two institutional solutions to this which have been discussed are the creation of rules specifying incentives to find low priority expenditure and the imposition of tight top-down revenue or spending constraints to force prioritisation.

The role of fiscal policy in macroeconomic stability is less clear than for sustainability or structure. The time-inconsistency problem implies that allocating the role of macroeconomic stability to political actors is not credible, and hence will not result in

stable outcomes. For this reason, the Reserve Bank has been assigned the role of maintaining price stability within an institutional framework that is intended to ensure monetary policy is time-consistent.

The question therefore arises as to the appropriate role of the fiscal authority within an inflation-targeting regime. One view is that because, under normal circumstances, the Reserve Bank can be expected to maintain inflation and output at equilibrium levels, fiscal policy should have no regard to its impact on stability. However, the counter argument is that fiscal policy still needs to take account of the costs imposed on the private sector arising from the effects of large changes in fiscal policy, undertaken for sustainability or structural reasons, on interest rates, the real exchange rate and output volatility. Fiscal policy should take account of whether, for example, large discretionary changes are likely to result in significant crowding out of the private sector. This may, however, result in some tension between short-term impacts and long-term objectives. Somewhat more controversial is the debate about a more active stabilisation role for fiscal policy. In principle, the instruments exist. But the lesson of the past is that appropriate fiscal institutions need to be in place to ensure time-consistent policy. The types of institutions proposed range from independent fiscal authorities with considerable discretion, to fiscal councils with a more advisory role.

The framework for evaluating the roles of fiscal policy proposed in this paper therefore throws up a number of questions that warrant more extensive treatment, questions such as: What is the appropriate time horizon over which to assess fiscal sustainability? Could fiscal rules or other institutional rules improve fiscal structure? Are structural policies exacerbating the macroeconomic stability objective? Are there institutional solutions that would limit political discretion and would allow fiscal policy to play a more effective stabilisation role? How much weight should be put on short-term macroeconomic impacts when government wants to progress policies which are intended to support long-run growth? Precise answers to these questions may be elusive, but posing these questions should help direct priorities for future work on fiscal policy and for improving the design of the fiscal framework.

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# Tables

***Table 1- Principles of responsible fiscal management: Public Finance Act (1989)***

***1. The PFA specifies the following principles of responsible fiscal management:***

- reduce debt to prudent levels so as to provide a buffer against factors which may impact adversely on debt in the future, by ensuring that, until those levels have been achieved, total operating expenses in each financial year are less than total operating revenues;
- once prudent levels have been achieved, maintaining those levels by ensuring that, on average, over a reasonable period of time, total operating expenses do not exceed total operating revenues;
- achieving and maintaining levels of total net worth that provide a buffer against factors which may impact on net worth in the future;
- managing prudently the fiscal risks facing the Government;
- pursuing policies which are consistent with maintaining a reasonable degree of predictability about the level and stability of taxation rates in the future.

***2. Reporting requirements under the PFA include***

- The Government must publish a Budget Policy Statement before April each year setting out their priorities for the Budget and any changes in long-term objectives and short-term intentions (see below). Recent Budgets have used a themes approach to prioritising government expenditure. The 2007 Budget specified the themes to be "families, young and old", "national identity" and "economic transformation";
- Treasury must produce an economic and fiscal update covering the current year and next two. An update must be produced prior to 31 December, with each Budget and prior to an election. Assumptions used in the update are those of the Treasury. The fiscal update must include financial statements prepared under GAAP and a statement of specific fiscal risks – that is government decisions and explicit contingent liabilities. Assumptions used in the update are those of the Treasury;
- A statement on major tax policy changes must be published with each Budget. This sets out the intended change and the cost of the policy;
- Governments must publish with each Budget a Fiscal Strategy Report setting out short-term intentions for key fiscal variables over the next 3 years, long-term objectives for those variables and projections of those fiscal variables over a period of at least 10 years. The FSR is the Minister's document and hence projections are based on the Minister's assumptions;
- The Treasury is also required to make fiscal projections over a period of 40 years at least every 4 years

***Table 2 - Employment in the public and private sectors***

**(Filled jobs, June years 2000 and 2006)**

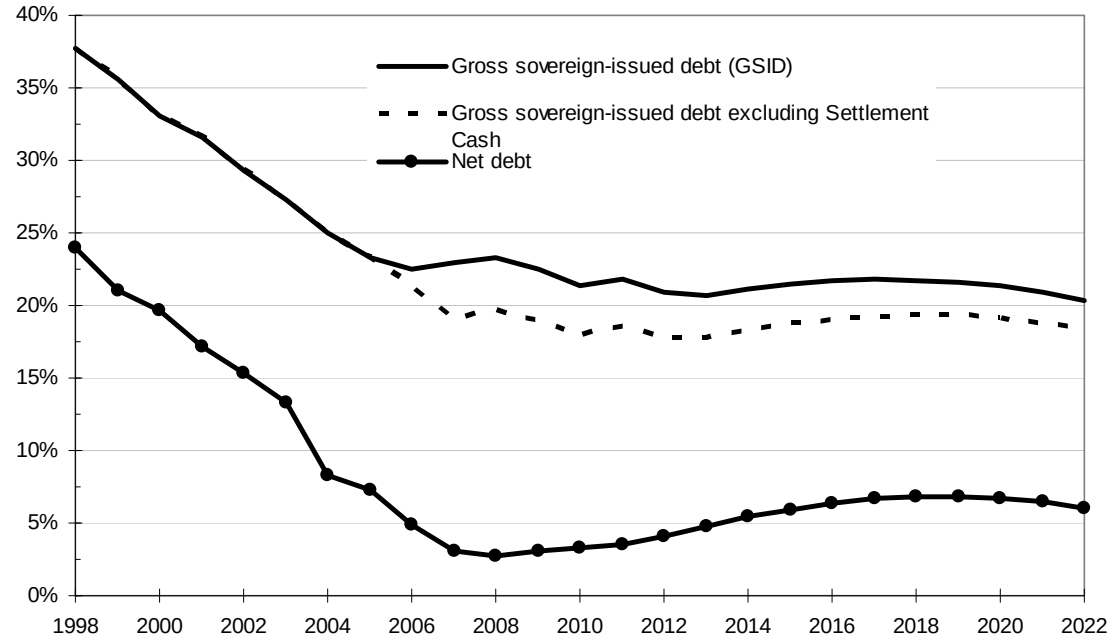
| **Filled jobs** | Level (000s) | | Change | |
|---|---|---|---|---|
| Years to June | 2000 | 2006 | (000s) | % per annum |
| Total sectors | 1,408,600 | 1,687,400 | 278,800 | 3.1 |
| Total private sector | 1,144,100 | 1,381,100 | 237,000 | 3.2 |
| Total public sector | 264,500 | 306,300 | 41,800 | 2.5 |
| Public service | 31,000 | 42,100 | 11,100 | 5.2 |
| Health services | 48,000 | 56,400 | 8,400 | 2.7 |
| Education | 106,500 | 106,000 | -500 | -0.1 |
| Other public sector | 79,000 | 101,800 | 22,800 | 4.3 |

Source: Statistics New Zealand.

Note: Public sector includes central government and local government. Public service is central government.

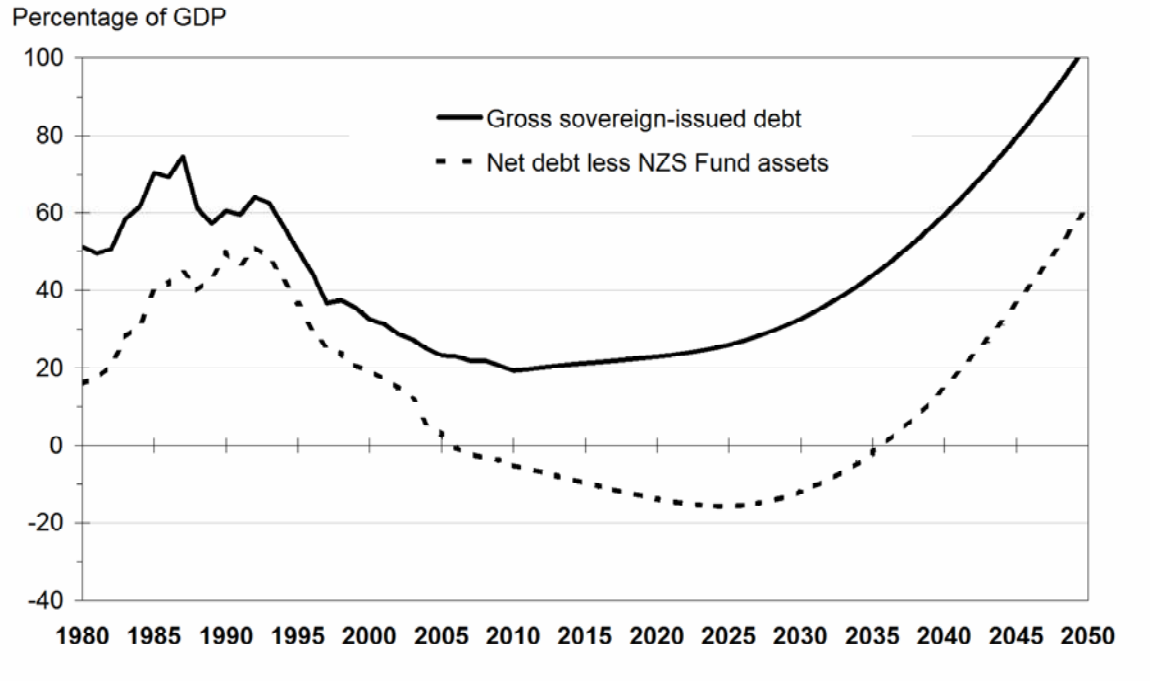
# Figures

***Figure 1 - Sovereign Debt (actual and projected)***



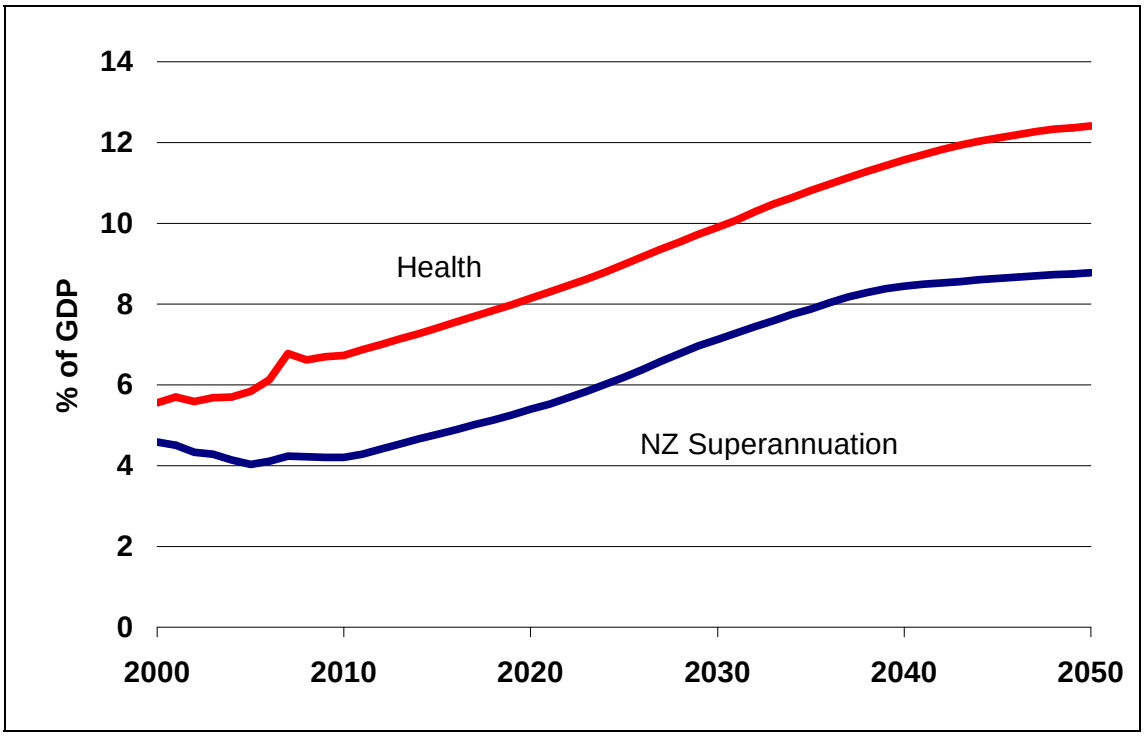

Source: Treasury Fiscal Strategy Model (2007)

***Figure 2 - New Zealand gross sovereign issued debt and net public debt (actual and projected)***



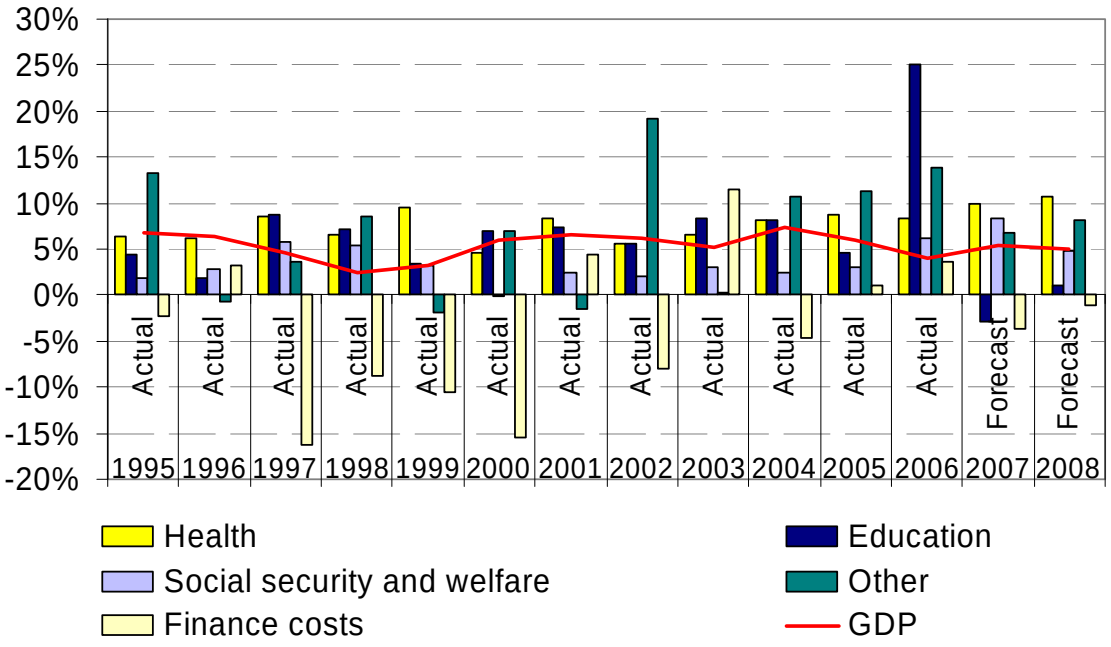

Source: The Treasury Statement of Long Term Fiscal Position (2006)

***Figure 3 - Projections of health and superannuation expenditure***



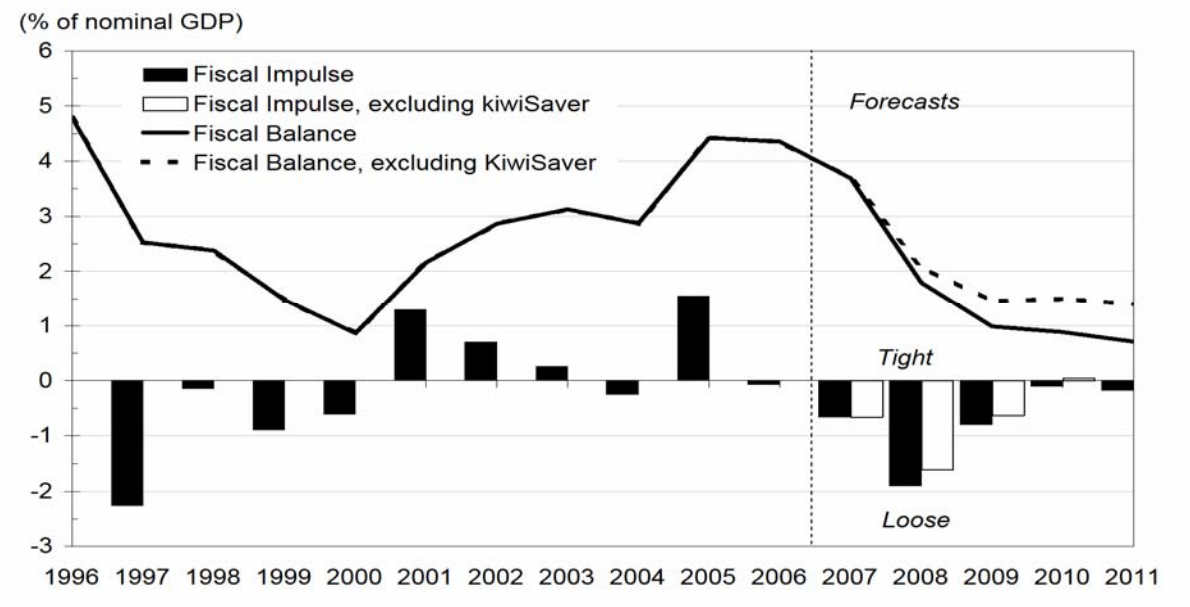

Source: The Treasury (2006)

***Figure 4 - Core Crown expenditure growth rates***



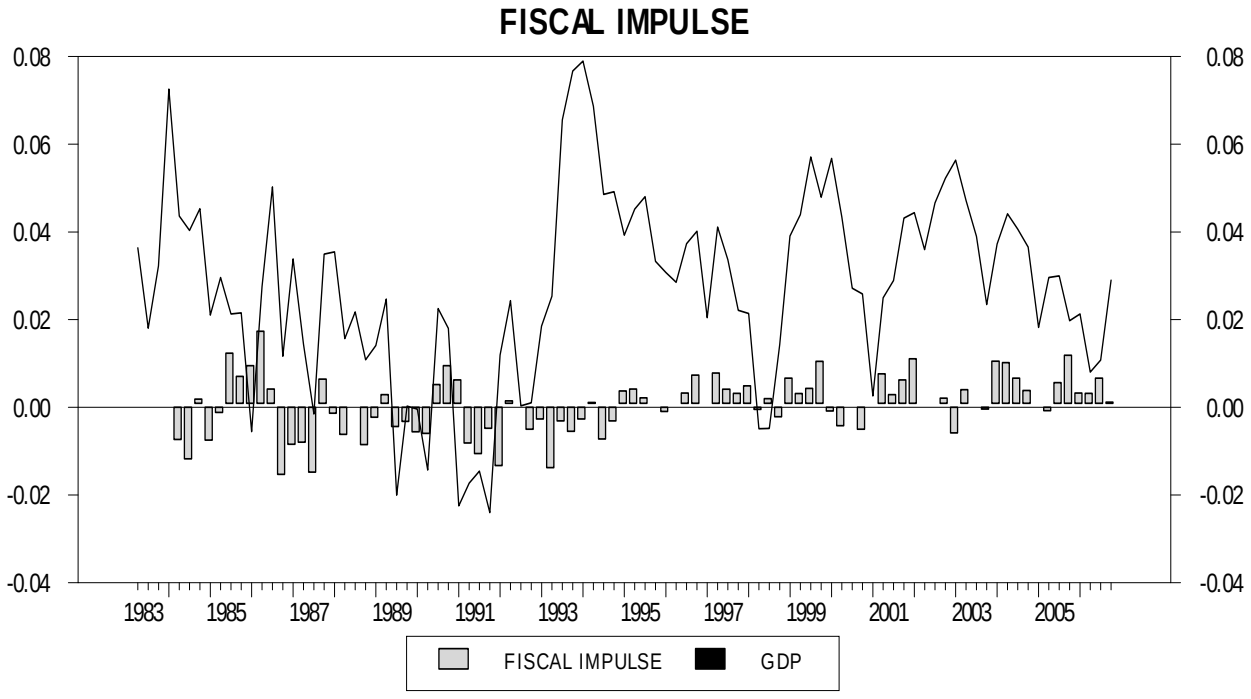

Source: The Treasury.

***Figure 5 - New Zealand fiscal balance and fiscal impulse indicator***



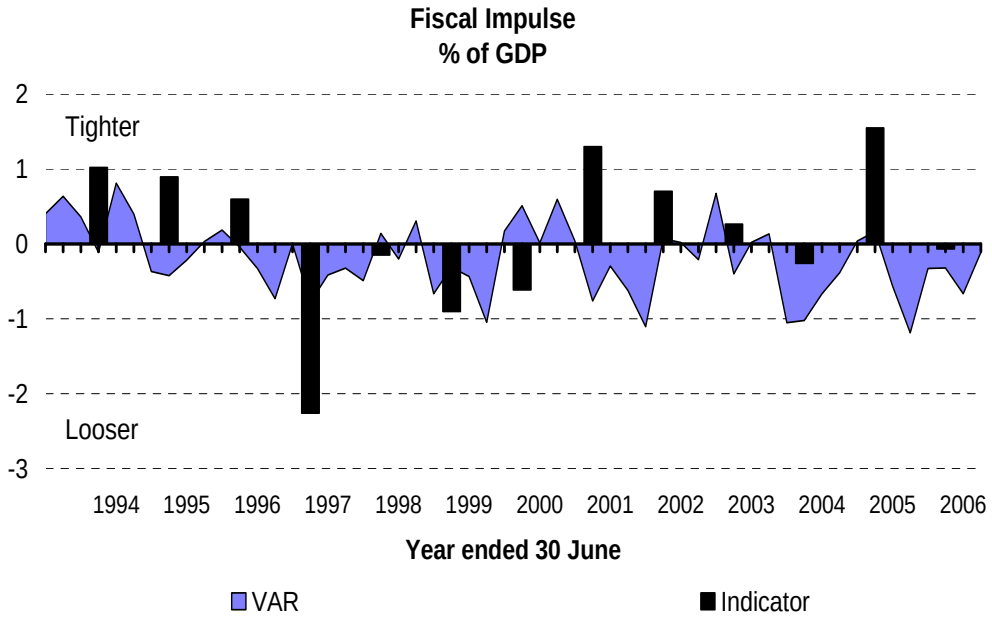

Source: The Treasury (2007).

***Figure 6 – VAR-based estimate of fiscal impulses and annual New Zealand real GDP growth***



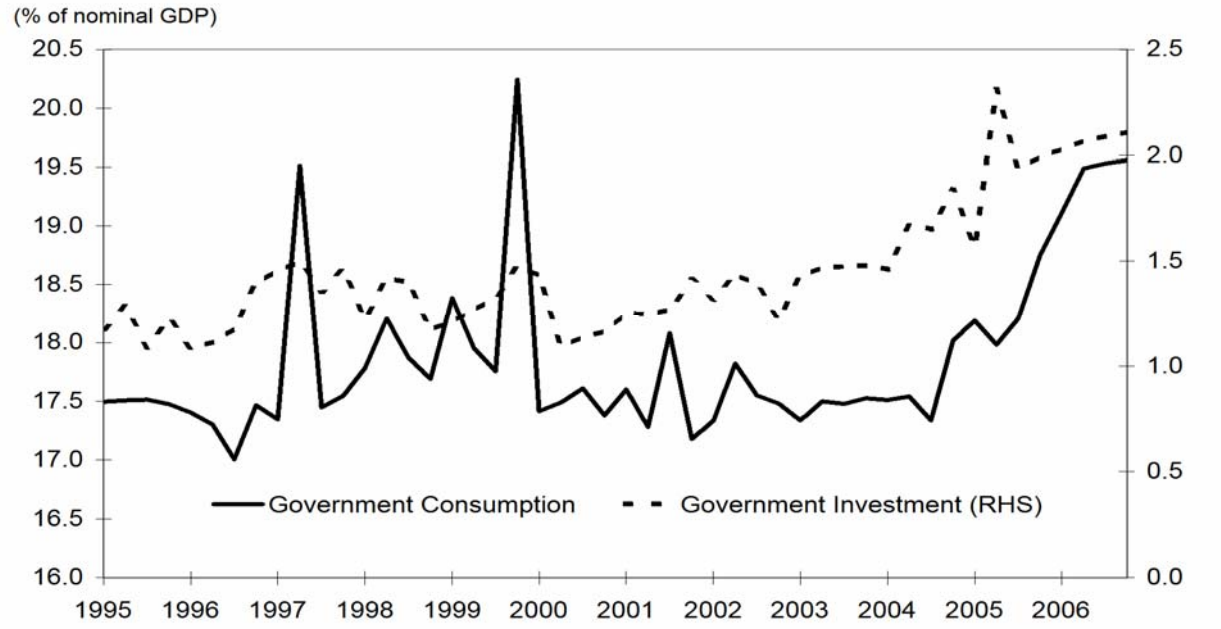

Source: The Treasury and Claus, Gill, Lee and McLellan (2006) updated by Treasury.

***Figure 7 - Comparison of VAR-based and traditional measure of fiscal impulse to New Zealand GDP growth***




Note: The "VAR" measure is from Figure 6 and the "Indicator" measure is from Figure 5.

***Figure 8 - New Zealand government consumption and investment expenditure***




Source: Statistics New Zealand