

University of Pretoria etd – Swanepoel, J A (2003)

**THE SIGNIFICANCE OF AUTOMATIC FISCAL STABILISERS
IN SOUTH AFRICA**

by

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in fulfilment of the requirements for the degree

DOCTOR COMMERCII (ECONOMICS)

in the

FACULTY OF ECONOMICS AND MANAGEMENT SCIENCES

at the

UNIVERSITY OF PRETORIA

PRETORIA

OCTOBER 2003

**THE SIGNIFICANCE OF AUTOMATIC FISCAL STABILISERS
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* The financial assistance of the Mellon Foundation and the South African Reserve Bank towards this degree is hereby acknowledged. The opinions expressed and conclusions arrived at are those of the author and do not necessarily represent the viewpoint of any institution that he may be involved with. All errors or omissions are for the account of the author.

I dedicate this thesis to my wife, Marilet.

Jan A. Swanepoel

ACKNOWLEDGEMENTS

I am indebted to a great number of people who have directly and indirectly contributed to this study. It is a pleasure to express my sincere appreciation to the following people:

- Firstly, I want to thank God the Almighty, for everything. Your grace was enough for me and to You I owe everything.
- My supervisor, Prof. N J Schoeman, for his guidance and interest shown in the topic. His assistance during our foreign visits also proved invaluable.
- My co-supervisor, Prof. R Koekemoer for her guidance and assistance.
- My wife, parents and brother for their encouragement and prayers.
- It is with sincere gratitude that I thank Sagé de Clerck for her careful proofreading, comments and suggestions.
- I am also deeply grateful to my family and friends, who always expressed interest in my progress, for their concern during the course of my studies.

Abrie Swanepoel

SUMMARY

THE SIGNIFICANCE OF AUTOMATIC FISCAL STABILISERS IN SOUTH AFRICA

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When setting and monitoring fiscal targets, there is a need to take explicit account of the cyclical position of the economy and its effect on the budget. Most of the discussion on fiscal policy in South Africa deals only with long-term sustainability issues, largely ignoring the effects of the economic cycle. As a result, serious policy mistakes can occur if purely cyclical improvements in the public finances are treated as if they represent structural improvements, or if structural deterioration is interpreted as a cyclical effect.

This study considers the countercyclical role of South African fiscal policy during the period 1970 to 2000. More specifically, it presents theoretical and empirical analysis of the significance of automatic fiscal stabilisers in the South African economy and calculates the cyclically adjusted budget balance that can improve fiscal policy-making and analysis. The study compares results for South Africa with six other developing countries (Chile, Mexico, Indonesia, India, Mauritius and Romania) and macroeconomic stabilisation and the potential role of automatic fiscal stabilisers in the New Partnership for Africa's Development (NEPAD) are also investigated.

This study highlights the need for continued caution in the use of discretionary policy, greater focus on making automatic fiscal stabilisers more effective in South Africa and the integration of better measures of fiscal balance into the discretionary policy process. Automatic fiscal stabilisers could also play an important role as a complement to countercyclical monetary policy and the operation of monetary policy

could be facilitated by the predictable and automatic responses from automatic fiscal stabilisers. Budget rules could play an important role in developing countries and specifically in African countries. If applied flexibly, fiscal rules could be regarded as restoring at least a moderate countercyclical role in these countries through the operation of automatic fiscal stabilisers. Although automatic fiscal stabilisers are likely to be less important in African countries due to structural reasons, the combination of appropriate rules, taking into account the impact of the business cycle on the public finances and vigilance against the dangers of inappropriate discretionary policy, may make a valuable contribution to Africa's development.

OPSOMMING

**DIE BETEKENISVOLHEID VAN OUTOMATIESE FISKALE
STABILISEERDERS IN SUID-AFRIKA**

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Die sikliese posisie van die ekonomie en die impak daarvan op die begroting moet eksplisiet in ag geneem word wanneer fiskale teikens vasgestel en ontleed word. Die meeste gesprekke oor fiskale beleid in Suid-Afrika handel slegs oor langtermyn volhoubaarheidskwessies, sonder om die effek van die ekonomiese siklus in ag te neem. Die gevolg hiervan is dat ernstige beleidsfoute kan ontstaan indien suiwer sikliese verbeterings in die owerheidsfinansies as strukturele verbeterings benader word, of indien strukturele agteruitgang as 'n sikliese effek geïnterpreteer word.

Hierdie studie beskou die anti-sikliese rol van Suid-Afrikaanse fiskale beleid gedurende die tydperk 1970 tot 2000. Dit verskaf in die besonder 'n teoretiese en empiriese analise van die betekenisvolheid van outomatiese fiskale stabiliseerders in die Suid-Afrikaanse ekonomie en bereken die siklies-aangepaste-begrotingsbalans wat fiskale beleidmaking en analise kan verbeter. Resultate vir Suid-Afrika word vergelyk met dié van ses ander ontwikkelende lande (Chili, Mexiko, Indonesië, Indië, Mauritius en Romenië) en makro-ekonomiese stabilisering en die potensiële rol van outomatiese fiskale stabiliseerders in the Nuwe Venootskap vir Afrika se Ontwikkeling (NEPAD), word ook bestudeer.

Die studie beklemtoon die noodsaaklikheid om voortdurend te waak teen die gebruik van diskresionêre beleid, 'n groter fokus om outomatiese fiskale stabiliseerders meer doeltreffend te maak in Suid-Afrika en die integrering van verbeterde maatstawwe in die diskresionêre beleidsproses. Outomatiese fiskale stabiliseerders kan ook 'n

belangrike ondersteunende rol speel in anti-sikliese monetêre beleid en die werking van monetêre beleid kan verbeter word deur die voorspelbare en outomatiese reaksies van outomatiese fiskale stabiliseerders. Begrotingsreëls kan 'n belangrike rol speel in ontwikkelende lande en in die besonder in Afrika-lande. Indien dit buigsaam toegepas word, kan fiskale reëls geag word om ten minste 'n matige anti-sikliese rol in hierdie lande deur die werking van outomatiese fiskale stabiliseerders te bewerkstellig. Outomatiese fiskale stabiliseerders blyk minder belangrik te wees in Afrika-lande weens strukturele redes. Desnieteenstaande, kan die kombinasie van gepaste reëls, met inagneming van die impak van die besigheidsiklus op die openbare finansies en die uitskakeling van ontoepaslike diskresionêre beleid, 'n waardevolle bydrae maak tot Afrika se ontwikkeling.

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CHAPTER 1 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Apart from contributing to a more efficient allocation of resources and a fair income redistribution, fiscal policy also pursues the objective of stabilising economic activity. The stabilisation function of fiscal policy is seen as beneficial both from a microeconomic (to smooth taxes and consumption over time) and a macroeconomic view (to avoid excessive output and employment variability and boom-bust fluctuations). High macroeconomic volatility is particularly harmful to the poor as they are unable to adapt their skills to downturns in labour markets and have less assets and access to credit to facilitate consumption smoothing. Thus, there may be irreversible losses in nutrition and educational levels should no appropriate safety nets be provided (Perry 2003:4).

Stimulatory monetary and fiscal policies played an important role during the world economic slowdown of the past two years as reflected in low interest rates and widening public deficits in many countries. Stabilisation could result from discretionary policy-making, when governments actively decide to adjust spending or change revenue flows in response to changes in economic activity. By contrast, government revenue and expenditure patterns can also adjust automatically in response to macroeconomic fluctuations (without any deliberate government action) in such a way that the business cycle is smoothed. Thus, the inherently procyclical nature of many revenue sources and the countercyclical behaviour of some expenditure components act as automatic fiscal stabilisers.

In assessing and formulating fiscal policy, actual budget balances need to be corrected for the effects of the business cycle in order to analyse the underlying or structural budgetary positions, the fiscal stance and the demand impact of fiscal policy. Weak fiscal policy could sometimes be masked temporarily by a strong revival in the economy, whereas during a recession, conversely, a strong fiscal stance on fiscal policy could be

undervalued due to a cyclical downturn. The influence of cyclical fluctuations in economic activity on the budget balance therefore needs to be examined if fiscal developments are to be monitored accurately.

The discussion of automatic fiscal stabilisers has become more immanent since the introduction of the Maastricht criteria and the Stability and Convergence Programs in the eighties and nineties. Automatic fiscal stabilisers have long been suggested to be an effective instrument for overcoming the problems of discretionary policy. Its potential to be used as powerful countercyclical weapons is being recognised by many countries and international organisations.

This study addresses the government's stabilisation goal, with particular reference to the role and impact of automatic fiscal stabilisers. The aim of this study is to evaluate the role of automatic fiscal stabilisers in the South African economy and to quantify the cyclically adjusted budget balance as an alternative fiscal indicator that could contribute to more effective fiscal policy in South Africa. In a broader context, the study also highlights the macroeconomic stabilisation potential of automatic fiscal stabilisers in the New Partnership for Africa's Development (NEPAD) Program.

1.2 STATEMENT OF THE RESEARCH PROBLEM

This study reviews the stance of fiscal stabilisation policy in South Africa, considering the extent of its use, its successes and failures, and the extent to which alternative fiscal policies have been implemented. One key problem for an empirical analysis of fiscal policy is to separate the impact of discretionary policy actions from the aggregate data available. The main methodological problem is that budget variables not only change in reaction to discretionary policy, but also because of automatic stabilisers built into the tax and welfare system of the economy. Thus, the main aim of this study is to identify, analyse and document the types, size, role and impact of such automatic stabilisers in South Africa. The potential and significance of automatic fiscal stabilisers as stabilisation instrument is highlighted, together with some guidelines to indicate how they

should be implemented and managed. The business cycle effects of both discretionary fiscal policy and automatic fiscal stabilisers are analysed during the period 1970 to 2000 and the cyclically adjusted budget balance of the consolidated general government is estimated as an alternative fiscal indicator that could contribute to more effective fiscal policy and fiscal analysis. The usefulness of alternative indicators, such as the cyclically adjusted budget balance, is also highlighted in Jacobs (2002), who argues that South Africa should move away from using just the conventional budget balance as fiscal indicator.

1.3 RESEARCH METHODOLOGY

The study is predominately a literature study that draws upon econometric techniques in order to determine the significance of automatic fiscal stabilisers and fiscal stabilisation in general in South Africa. Standard norms and criteria to evaluate automatic fiscal stabilisers are presented, analysed and documented. Conclusions are drawn and results are derived by means of econometric techniques as well as from graphic illustrations and tables. With the objective of basing the analysis on sound economic and statistical theory, the study starts with an overview of the literature underlying automatic fiscal stabilisers. Thereafter, the most useful techniques identified are used to cyclically adjust the fiscal scenario. The results for South Africa were then compared with other developing countries. Finally, the stabilisation role of government under the New Partnership for Africa's Development (NEPAD) is assessed.

The main focus is on the macroeconomic stabilisation functions of government - the use of taxing, spending and other policies to affect the overall level of unemployment and the price level in the economy. Certain normative aspects are also highlighted in view of the moralistic issues involved in judging the outcome of government taxing and spending activities and the levels thereof. The study therefore explains both positive and normative aspects of fiscal stabilisation.

1.4 OUTLINE OF THE STUDY

The study consists of eight chapters supported by a number of graphs and tables. The introductory chapter describes the background and objective of the study, the statement of the research problem, the research methodology and the outline of the study. Chapter 2 describes the theoretical literature on the effectiveness of fiscal policy. The chapter differentiates between discretionary and non-discretionary policies, describes the usefulness of budget rules and discusses the linkages between monetary policy and fiscal policy.

In Chapter 3 automatic fiscal stabilisers are defined, the various types of automatic fiscal stabilisers described, their role and effectiveness analysed and the main determinants regarding their size documented. The main advantages and disadvantages of automatic fiscal stabilisers are evaluated together with a discussion of the various ways in which they could be measured. Chapter 3 also provides some international empirical evidence of the usefulness of automatic fiscal stabilisers, highlights some supply-side considerations that are often neglected, addresses the question whether the level of government at which fiscal stabilisation occurs has any effect on its net impact and reviews the main aspects regarding cyclically adjusted budget balances.

Chapter 4 analyses the South African business cycle and the main features and trends in the South African government finances. It also peruses the fiscal policy objectives pursued in South Africa during the period 1970 to 2000, as these aspects impacted directly on the size of automatic fiscal stabilisers. In the chapter the course, strength and duration of the South African business cycle are illustrated, with an outline of the reasoning behind its performance over the years. Some insight into the magnitude and composition of government revenue and expenditures is provided, together with a comparison between South African government finances and some developing countries.

In Chapter 5 the relevance of tax revenue as an automatic fiscal stabiliser in South Africa is investigated through an empirical analysis of its role and impact since the 1970s. In the chapter estimates are provided of the sensitivity of tax revenue flows with respect to output. The cyclical and structural components of tax revenue are estimated and compared with tendencies in other developing countries.

The role and impact of the South African Unemployment Insurance Fund as an automatic fiscal stabiliser is investigated in Chapter 6. Firstly, the main features of the South African Unemployment Insurance Fund are outlined. Thereafter, the stabilising properties of various expenditure categories are evaluated and the impact of the new Unemployment Insurance legislation on the stabilising role of the Unemployment Insurance Fund is discussed. Finally, these results are compared to similar tendencies in other developing countries.

Chapter 7 really contains the heart of the research results with the quantification of a cyclically adjusted budget balance as an alternative fiscal indicator for South Africa that can contribute to more effective fiscal policy implementation and analysis. Moreover, the results obtained from Chapters 5 and 6 are used to analyse the total impact of automatic fiscal stabilisers and discretionary fiscal policy on the South African economy. In the chapter the fiscal stance in relation to cyclical conditions is examined in an attempt to find an answer to the question whether the policy mix is appropriate to provide conditions conducive for economic growth and macroeconomic stability. In addition, the effectiveness of automatic fiscal stabilisers at lower levels of government in South Africa is investigated together with an evaluation of the role of fiscal policy under the New Partnership for Africa's Development (NEPAD).

Finally, Chapter 8 concludes and puts some suggestions forward for future research.

CHAPTER 2

FISCAL STABILISATION POLICY

2.1 INTRODUCTION

During the recent world economic slowdown, great emphasis was put on fiscal policy to stimulate the economy as reflected in generally widening budget deficits, with some governments in the euro area even breaching the 3 per cent deficit limit putting pressure on the credibility of the Stability and Growth Pact. These effects, for example, took place in the form of extended unemployment insurance benefits in the United States and proposed tax cuts in the United States and Germany. The economic policies used by government to smooth the extreme swings of the business cycle are called countercyclical or stabilisation policies. Fiscal policy instruments can contribute to the stabilisation of the economy to the extent that they could stabilise output, income and demand during an economic downturn by maintaining or even increasing government expenditure, or by reducing tax revenue. By the same token, restrictive fiscal policies could moderate activity during periods of strong growth. Macroeconomic policy has a key role in delivering economic stability. Unpredictable fluctuations in output, employment and inflation are disruptive, and can delay the economy's long-term potential growth. By contrast, economic stability helps firms, households and Government to plan effectively for the long term.

The use of fiscal policy as a stabilisation instrument, however, proved to be complicated. There are many factors that contribute to the frequent divergence of fiscal and economic outcomes from government's plans. These factors include, for example, uncertainty regarding the impact of fiscal measures on the economy, uncertainty as to the present and anticipated economic conditions, the lag between fiscal decisions and their implementation, the possibility of conflict between political and fiscal policy objectives and the complexity of intergovernmental financial relations. Moreover, fiscal instruments have behavioural and structural consequences and their use for stabilisation purposes may conflict with other government objectives. The government's budget

serves many purposes besides stabilisation, and much of government spending is committed years or even decades in advance. Expanding or contracting government expenditure rapidly for macroeconomic stabilisation purposes is therefore difficult without either spending wastefully or compromising other fiscal policy objectives. The same applies to taxes. Although taxes are somewhat easier to change, the tax laws could have many different objectives.

Fiscal policy could play an important countercyclical role in a small open economy such as South Africa where external shocks may arise due to its vulnerability to global economic conditions. Fiscal policy could be used as a stabilising instrument of economic activity either through the effects of built-in automatic stabilisers or through discretionary tax and expenditure measures, or through a combination of both. However, the structure of revenue and expenditure of the public sector is crucial in determining the capacity of government to use the budget as an effective macroeconomic policy instrument. The sustainability of public finances and the stabilising role of fiscal policies are closely linked. Persistent deficits undermine the stabilising role of public finances. When countries continuously incur additional liabilities, governments lose the necessary room for manoeuvre to let public finances react appropriately to macroeconomic fluctuations over the business cycle. Countries with unsustainable deficits face unavoidable and disruptive large-scale adjustments in the future.

If one argues that fiscal stabilisation policy is desirable, the question arises as to what policies and instruments will be the most effective and what will the effect of these policies have on other macroeconomic policies and variables. These issues are dealt with in the remaining sections of this chapter. The next section describes the theoretical literature on the effectiveness of fiscal policy. Section 2.3 differentiates between discretionary and non-discretionary policies, while Section 2.4 describes the usefulness of budget rules in stabilisation policy. Finally, the linkages between monetary policy and fiscal policy are discussed in Section 2.5.

2.2 THEORETICAL LITERATURE ON THE EFFECTIVENESS OF FISCAL POLICY

According to Fatás and Mihov (2002:6), mainstream macroeconomic theory predicts that fiscal policy is not neutral with respect to output – changes in spending or taxes exert a strong influence on the economy in virtually every macroeconomic model. In the standard Keynesian models, the effect arises from aggregate demand, while in dynamic general equilibrium models of the real business cycle type; output changes because fiscal policy affects the incentives to work and to save.

Hemming, Kell and Hahfouz (2002) highlight the theoretical literature on the demand-side effects, supply-side effects and institutional aspects of fiscal policy. Theoretical literature on the effectiveness of fiscal policy spans the simple Keynesian model, closed and open economy IS-LM models, demand-side models incorporating rational expectations, Ricardian equivalence, interest rate premiums, credibility, uncertainty and supply-side models. The authors argue that literature suggests fiscal multipliers will tend to be positive and possibly be quite large when there is excess capacity, the economy is either closed or open and the exchange rate is fixed. Furthermore, households have limited time horizons or are liquidity constrained, increased government spending does not substitute for private spending, government debt is low and the government does not face financing constraints, and there is an accompanying monetary expansion with limited inflationary consequences. On the other hand, fiscal multipliers are likely to be smaller, and could turn negative when there is crowding out, either directly as government provision substitutes for private provision and through imports or as interest rates rise and a flexible exchange rate appreciates in response to a fiscal expansion. Furthermore, households are Ricardian, in which case a permanent fiscal expansion could reduce consumption, there is a debt sustainability problem and risk premia on interest rates are large. Finally, expansionary fiscal policy increases uncertainty, which leads to more cautious saving and investment decisions by households and firms.

On the demand-side effects of fiscal policy, the Keynesian model assumes price rigidity and excess capacity so that output is determined by aggregate demand. In this model, a fiscal expansion has a multiplier effect on aggregate demand and output, and the Keynesian multiplier exceeds one – it increases with responsiveness of consumption to current income and it is larger for spending increases than for tax cuts. The balanced budget multiplier is exactly one if a spending increase is matched by a tax increase. It can generally be observed that prices are flexible. Fiscal action is therefore relatively less effective at demand management as what the Keynesian model suggests. However, a high degree of price flexibility also mean that fiscal action is less likely to be required as greater wage and price flexibility reduces the importance of stabilisation in the face of demand or supply shocks. Rapidly adjusting prices and wages would reduce the extent to which output and employment respond to, for example, a negative demand shock. Greater flexibility therefore reduces both the effectiveness of fiscal stabilisation and the need for it in the first place.

Extensions of the simplest Keynesian model allow for crowding out through induced changes in interest rates and the exchange rate that is additional to direct crowding out that affects the size of fiscal multipliers but does not change their sign. Private investment depends negatively on interest rates in the standard IS-LM model to the extent that a fiscal expansion paid for by increased borrowing leads to higher interest rates that reduce investment. In the open economy IS-LM (Mundell-Fleming) model, there can also be crowding out through the exchange rate, as higher interest rates attract capital inflows that appreciate the exchange rate, resulting in deterioration in the external current account that could offset the increase in domestic demand deriving from a fiscal expansion. The appropriateness of the IS-LM framework can be questioned in the sense that it assumes prices are fixed and hence ignores the supply-side of the economy. Output is effectively demand-determined. This may still be a reasonable short-term assumption if wages and prices are slow to adjust and movements in aggregate demand are initially caused by movements in output rather than prices. But it is unlikely to be helpful in analysing the longer-term effects and it could be highly misleading were the speed of adjustment of wages and prices to change relative to previous experience.

The non-Keynesian effects of fiscal policy emerge from new classical models, which address well-known shortcomings of the Keynesian approach, and in particular, its lack of microeconomic foundations. Although some variants of the Keynesian approach recognize the role of expectations, they typically rely on adaptive expectations. Rational expectations tend to bring forward adjustments in variables that would occur more progressively with adaptive expectations so that longer-term effects of fiscal policy will matter, even in the short term.

The way in which consumers are perceived to respond to changes in the government's budget balance is therefore a crucial element in fiscal stabilisation policy. The impact of fiscal policy on aggregate demand depends on the marginal propensity to consume and on the foresight on which consumers base their decisions. To a considerable degree households smooth consumption over time due to their expectations of future income. The less liquidity-constrained consumers are, the more feasible is this smoothing. An implication of this forward-looking behaviour is that the responsiveness of consumers to changes in the government's fiscal policy may differ, depending upon whether it reflects a permanent or temporary change. Both the overlapping generations and the Ricardian models attribute considerably greater weight to the longer-term consequences of fiscal policy than to the current changes in fiscal variables. Full Ricardian equivalence is highly unlikely, but as long as there is a degree of consumption smoothing by households, the impact of any discretionary fiscal policy will generally be reduced.

Fiscal policy will therefore be less effective in altering aggregate demand if consumption depends on future as well as on current levels of income (Chouraqi, Hagemann and Sartor 1990:2). A fiscal stimulus to aggregate demand will be offset if consumers reduce or increase current consumption expenditure when they expect to pay higher or lower taxes in the future as a result of government deficits or surpluses today. Friedman's permanent income hypothesis and Modigliani's life-cycle theory of consumption are particularly important in this respect. Friedman argued that welfare maximising individuals formulate their consumption decisions on the basis of what they expect their

permanent income to be. Thus, tax cuts only stimulate consumption expenditure to the extent that higher taxes are not anticipated in the medium term to service future deficits. Hence, a short-term tax cut for cyclical demand management purposes would be unlikely to boost consumption expenditure unless liquidity constraints affect households severely. Similarly, an increase in exhaustive government spending, which can be expected to result in higher taxes in the medium term, will also fail to stimulate aggregate demand. Forward-looking consumers' consumption in the life-cycle theory of saving depends on lifetime wealth expectations. A deficit-financed tax cut will only increase consumption expenditure to the extent that the debt is expected to exist beyond the lifetime of the current generation. Similarly, a debt-financed increase in government spending will only boost aggregate demand to the extent that consumers do not anticipate that the debt will be repaid within their lifetime. The longer the time horizon on the basis of which life-cycle consumers base their decisions, the less likely it is that short-term demand management policies will be effective. Forward looking consumers, who are not liquidity-constrained and can therefore smooth consumption in the face of a change in their income, will generally reduce the stabilising effects of income tax changes.

The focus of the discussion so far has mainly been on the short-term impact of fiscal instruments as this is what is relevant for stabilisation policy. However, unlike monetary policy, it is also important to point out that fiscal policy instruments can have a potentially significant long-run impact (through the long-term impact of debt and the long-run growth rate of the economy) and that different fiscal instruments are likely to have very different effects in the long run as well as in the short run.

2.3 DISCRETIONARY VS. NON-DISCRETIONARY POLICY

The main difference between discretionary and non-discretionary fiscal policy is that non-discretionary fiscal policy does not involve any deliberate government action, while discretionary fiscal policy can be defined as a deliberate attempt by government to obtain a certain objective. Discretionary fiscal policy can therefore be interpreted as changes in fiscal variables due to deliberate government action to obtain a certain objective (for

example to smooth the business cycle), while automatic (or built-in) stabilisers are types of automatic fiscal policies that do not require new legislation, because economic conditions cause government revenue and expenditure to change without any deliberate government action. Governments have the option to either allow these automatic stabilisers to work, to reinforce or to restrain their effect via discretionary budgetary policy. During a recession, governments might prefer not to let the budget deficit deteriorate due to the operation of the automatic stabilisers and will therefore decide to conduct a procyclical budgetary policy, or they might choose to actively undertake a countercyclical budgetary policy that will increase the deficit further.

Many practical economic and political difficulties are encountered in discretionary fiscal stabilisation policy. Political constraints could arise because politicians may find it unpopular to raise taxes and cut government expenditure when the economy becomes overheated. The democratic and political process often implies that it is easier to mobilise support to raise budget deficits than to cut them back or create surpluses. According to the European Central Bank (2002:36), this induces a tendency towards continuous increases in deficits and the tax burden. Furthermore, it is difficult to determine the appropriate size of the annual deficit, while fiscal adjustments and their effects are also subject to variable and unpredictable time lags. As a result, governments' well-intentioned efforts to stabilise the economy often end up destabilising it, "booming the boom" or "depressing the depression". Proper timing of discretionary policy is extremely difficult to achieve, but crucial if it is to assist with economic recovery. Therefore, most economists favour active, discretionary fiscal policy only in response to a major recession.

There is a growing realisation that high budget deficits could directly or indirectly crowd out relatively more productive private sector activity such as investment. Moreover, discretionary policy presents a dilemma when low levels of economic activity coincide with high inflation and balance of payments deficits such as was the case in South Africa during the latter half of the 1970s (Heyns 1999:70). According to the European Commission (1997:109), the efforts to support the economy during downturns in EU

countries have often been made through expenditure commitments that have subsequently proven *de facto* irreversible. This resulted in an upward “ratchet” effect of the size of the public sector in the economy, on both the tax and the expenditure side.

Attempts to stabilise the economy through discretionary fiscal policy therefore encounter some technical problems. The ability to measure and analyse the economy is imperfect; gauging how far the economy is from full employment at any particular point in time is difficult. Furthermore, the amount that output will increase in response to a fiscal expansion is not known exactly, making it difficult to assess how much of a fiscal change is needed to restore full employment. Because macroeconomic policies take time to implement and more time to affect the economy, their optimal use requires knowledge of where the economy will be in six or twelve months from now. However, such knowledge is, at best, very imprecise.

In order to avoid the typical pitfalls of fiscal fine-tuning, the main focus has increasingly been put on the working of automatic fiscal stabilisers to fulfil the stabilisation objective. Many of the objectives that fine-tuning might be designed to achieve can be met with adequately designed automatic stabilisers, though many of the problems that fine-tuning face are also faced by these stabilisers. Discretionary changes in taxes and spending and changes in taxes and spending due to the automatic stabilisers both impact on aggregate demand. However, the automatic stabilisers are more predictable and work quicker than the discretionary ones (Taylor 2000:26).

The duration perspective of stabilisation considers the frequency of business cycles, while the volatility debate focuses only on their amplitude. Diebold and Rudebusch (1992:994) argue that some of the structural changes in an economy cited as possible sources for volatility stabilisation may actually impede duration stabilisation. A countercyclical entitlement program such as unemployment insurance, for example, increases individual unemployment durations by reducing the adverse effect of unemployment on personal income. Although the unemployment insurance program acts as an automatic fiscal stabiliser to the extent that it reduces the severity of contractions

and the variability of fluctuations, it generally does not shorten the duration of contractions or lead to duration stabilisation.

2.4 BUDGET RULES

Government could manage public finances by following some rules to guarantee sustainability and which allow automatic stabilisation. According to the European Central Bank's *Monthly Bulletin* (2003:39), growing awareness of the limitations associated with macroeconomic fine-tuning has led to a worldwide trend towards the adoption of more rule-based institutional frameworks. These frameworks could provide authorities with specific mandates, i.e. clearly identified policy objectives, in order to set proper specific targets for decision-making level and ensure predictability of policy. Moreover, these frameworks could provide responsible authorities with guidance on the appropriate setting of their instruments in the face of constantly changing economic conditions in such a way as to keep the path of their action through time as consistent as possible with the long-term attainment of their policy objectives.

Marin (2002) emphasises that there are a number of issues under discussion on rules of fiscal discipline, namely the way in which the rules of budgetary discipline are implemented, the appropriate medium-term targets, the importance of allowing automatic stabilisers to operate symmetrically over the cycle, the allowance of temporary deviations from close to balance positions or from surplus budgetary positions toward deficit positions, the operational assessment of the sustainability of public finances, etc.

The interest in fiscal policy rules stems in part from the deterioration in public finances, which prompted the need to achieve or maintain long-term fiscal sustainability. Kopits and Symansky (1998:2) define a fiscal policy rule, in a macroeconomic context, as a permanent constraint on fiscal policy, typically defined in terms of an indicator of overall fiscal performance. The rules cover summary fiscal indicators such as the government budget deficit, borrowing, debt, or major components thereof – often expressed as a numerical ceiling or target, as a ratio of gross domestic product. A critical feature of a

fiscal rule is that it is intended for application on a permanent basis by successive governments in a given country, at the national or sub-national levels of government. For a policy rule to be credible, it must involve commitment over a reasonably long period of time. Much like other rule-based policies, a fiscal rule can be defined in terms of the degree of stringency, precision and enforcement of the statutory instrument. There are borderline cases that in principle can be viewed as fiscal rules, such as the provisions for reducing the public debt to GDP ratio to a reference value at a satisfactory pace or to a prudent level while achieving an adequate level of net worth.

Binding fiscal policy rules are likely to influence the level and composition of government expenditure and taxation (Kopits and Symansky 1998:12). Moreover, they have major macroeconomic consequences for inflation, external indebtedness and economic growth. The effect of fiscal rules on output variability is determined by the relative size and persistence of fiscal policy shocks compared with the size of the other underlying shocks, and by their interaction with automatic stabilisers. According to Kopits and Symansky (1998:18), a fiscal policy rule should be well defined in order to avoid ambiguities and ineffective enforcement, adequate with respect to the specified goal, consistent internally as well as with other macroeconomic policies or policy rules, simple to enhance their appeal to the legislature and to the public, flexible to accommodate cyclical fluctuations and exogenous shocks beyond the control of the authorities, enforceable in the given environment, highly transparent and supported by efficient policies.

The rationale for fiscal policy rules rests primarily on the need for macroeconomic stability, support of other financial policies, long-term sustainability of fiscal policy, overall policy credibility and reduction and avoidance of negative spillovers and adverse market reactions (Kopits and Symansky 1998:6). The potential benefits of fiscal rules over discretionary policies ensue from the credibility of lasting commitment to fiscal discipline. Most of these objectives can be met with discretionary fiscal policy measures, but they have proved to be less successful, suggesting that although discretionary policies

may theoretically be superior, well-designed fiscal policy rules may offer a useful second-best solution to counter political pressures on fiscal policy-making.

According to Millar (1997:1), recent research suggests that budget rules are theoretically justified if the social benefits of foregone fiscal stabilisation are outweighed by the benefits of avoiding government debt accumulation, and the potential for reduced risk premiums on government borrowing rates. Empirical evidence confirms that stringent anti-deficit rules improve government finances and reduce borrowing rates more effectively than less stringent rules, although evidence is limited on whether the mere existence of such rules is beneficial. Studies also confirm that deficit-constraining rules reduce fiscal offsets to demand shocks, which may increase output volatility. Properly designed fiscal rules may facilitate the functioning of automatic stabilisers, while at the same time supporting solvency goals and enhancing credibility (Perry 2002:3).

Anti-deficit constraints, however, could compromise the stabilising role of automatic stabilisers, especially for negative demand shocks (*op. cit.*:13). Such constraints could be destabilising if fiscal authorities are forced to adopt restrictive measures to offset revenue shortfalls when negative demand shocks occur, which could amplify the decline in output. Since budget rules do not preclude large surpluses, the response of fiscal authorities would not necessarily be destabilising in the presence of positive demand shocks.

The loss of fiscal stabilisation implied by anti-deficit constraints may not be as large for governments that are already burdened with high levels of debt when the constraint is adopted (*op. cit.*:14). In this context, the potential costs of foregone fiscal stabilisation resulting from anti-deficit constraints may be reduced, at least while government actively attempts to reduce debt to more acceptable levels. However, if anti-deficit constraints are adopted as a preventative measure against excessive debt accumulation and remain in place even when the debt is back to a more acceptable level, the potential costs of foregone fiscal stabilisation may remain a concern in the long term. Anti-deficit and anti-debt constraints could also limit the discretion of policy-makers to adopt optimal policies

in a number of other ways. For instance, anti-deficit rules could prevent policy-makers from making socially optimal public infrastructure investments, the omission of which would be undesirable consequences on the welfare of future generations. To some extent, it may be socially equitable to run deficits to finance such investments, since the cost can be shared amongst the present and future generations that will profit from their existence. Another negative consequence of fiscal rules is that governments could lose the flexibility to use debt to reallocate welfare intertemporally when it is socially equitable to do so (*op. cit.*: 15).

Alternatively, Millar (1997:15) argues that if markets perceive fiscal rules to be effective safeguards against unsustainable fiscal policy, they may lower government borrowing rates by reducing the perceived risk of default on, or monetisation of, government debt. Moreover, rules could prevent miss-timed discretionary fiscal policy (due, for example, to unpredictable policy lags) from being a source of instability. While budget constraints may imply lasting costs in terms of foregone fiscal stabilisation and tax smoothing, these costs may not be as high if the budget constraint is adopted only temporarily, particularly if fiscal policy is already constrained by excessive debt levels.

Finally, Millar (1997:26) argues that there is evidence that the form of a budget constraint matters, in addition to the economic and political context. More stringent constraints with strong enforcement mechanisms enhance the possibility of fiscal discipline. The disciplinary benefits of budget rules should be weighed against the social costs of foregone output stabilisation or tax smoothing.

2.5 MONETARY POLICY VS. FISCAL POLICY

The policy mix could consist of various combinations of expansionary and restrictive policies, with a given fiscal stance being either supportive or non-supportive of monetary policy. Coordinated monetary and fiscal policies are extremely important as uncoordinated policies could potentially slow the economy's long-term growth rate or cause unwanted surges in inflation. Fiscal and monetary policies should therefore be

coordinated to achieve macroeconomic stability objectives. Each set of policies has its own focus, instruments and procedures. In recent years, monetary policy was increasingly focused on controlling inflation, most explicitly so in countries such as South Africa that has adopted inflation targeting. As monetary policy concentrates on bringing and keeping actual inflation close to target, it is less concerned with a stable and small output gap. It could be argued that under these conditions, the management of the output gap and current account balances becomes the responsibility of fiscal policy. However, assigning the task of stabilising output fluctuations to fiscal policy creates theoretical and practical problems, as is indicated in Section 2.3. Theoretically, fiscal policy is rather ineffective in stabilising output for a variety of reasons. Practical problems relate to the fact that fiscal policy instruments are rather inflexible in the short term and can therefore not respond quickly enough to output fluctuations. The literature has therefore in recent years increased the focus on the medium- to long-term issues in fiscal policy, such as the sustainability of the fiscal deficit or government debt. This trend is illustrated, for example, in the European Union where all Member States use long-term projections at some stage of the budgetary process, reflecting a shift in recent years from budgetary procedures that only focussed on short-term targets, to procedures that incorporate more longer-term considerations.

The interactions between monetary and fiscal policies relate to the fact that both types of policies have an impact on key macroeconomic variables, and this in turn creates interdependencies in the pursuit of policy objectives. On the one hand, fiscal policy influences price developments, real interest rates and risk premia as well as aggregate demand and potential output, all variables which need to be systematically taken into account by a monetary policy that focuses on price stability (*European Central Bank Monthly Bulletin* 2003:37). In contrast, monetary policy has an impact on, *inter alia*, short-term interest rates, inflation expectations and the risk premia incorporated in long-term yields. All of these variables affect the economic environment in which fiscal policy operates. Monetary policy is generally more flexible than fiscal policy and, although the economy's response to monetary policy is also subject to variable time lags, it can be changed more rapidly.

According to the *Reserve Bank of New Zealand Bulletin* (1992:224), fiscal policy decisions can affect the appropriate short-term stance of monetary policy either through a direct impact on prices (due to changed taxes or charges), or indirectly by affecting aggregate demand. Central banks must monitor fiscal trends carefully, as fiscal policy outcomes may result in continual increases in public debt to GDP ratios which impact on the inflation outlook. The systematic relationship between fiscal and monetary policy arise from the fact that fiscal expansions tend to lead to more rapid growth in the future, which would be taken into account in setting monetary policy as this has implications for price stability. In addition, government borrowing tends to drive up the equilibrium real interest rate. Thus, fiscal policy affects future output, which has implications for monetary policy.

Fiscal policy therefore affects the economic environment in which monetary policy operates. In order to be effective, central banks also have to adjust to the non-discretionary components of fiscal policy in a systematic way. With strong automatic stabilisers in place, an increase in aggregate demand would have less effect on output and inflation, and would decrease the need for the central bank to respond aggressively. The automatic responses could always be over-ridden by discretionary action, while the predictable fiscal responses of automatic fiscal stabilisers are also likely to facilitate the operation of monetary policy. Automatic fiscal stabilisers could therefore play an important role in complementing countercyclical monetary policy.

Fiscal policy should contribute to maintaining an environment of macroeconomic stability, while monetary policy must continuously monitor the fiscal policy stance in order to be effective. Objectives and instruments must be assigned efficiently and a clear division of responsibilities is needed. An open exchange of views and information between monetary and fiscal authorities could assist the overall outcome if this enhances an understanding of the objectives and strategies to pursue them (Duisenberg 2003). However, active coordination of fiscal and monetary policies is bound to be ineffective, given the inability of both fiscal and monetary policy-makers to fine-tune economic

developments. Moreover, commitments to *ex ante* coordination between fiscal and monetary policies may blur the responsibilities of monetary and fiscal authorities and ultimately reduce the incentives to pursue their respective objectives.

2.6 SYNOPSIS

Despite some theoretical concerns regarding the effectiveness and impact of demand management, the fiscal stabilisation goal of government is still being recognised as important given the widening public deficits during the recent world economic slowdown. In the light of the arguments presented in this chapter, there is also little practical doubt that the fiscal system could be used for stabilisation. The economic policies used by government to smooth the extreme swings of the business cycle are called countercyclical or stabilisation policies. Fiscal policy instruments could contribute to the stabilisation of the economy to the extent that they can stabilise output, income and demand during an economic downturn by maintaining or even increasing government expenditure, or by reducing tax revenue. By the same token, they could moderate activity during periods of strong growth. Fiscal policy can be used as a stabilising instrument of economic activity either through the effects of built-in automatic stabilisers or through discretionary tax and expenditure measures, or through a combination of both.

Mainstream macroeconomic theory predicts that fiscal policy is not neutral with respect to output – changes in spending or taxes exert a strong influence on the economy in virtually every macroeconomic model. In the standard Keynesian models, the effect arises from aggregate demand, while in dynamic general equilibrium models of the real business cycle type; output changes because fiscal policy affects the incentives to work and save. Theoretical literature on the effectiveness of fiscal policy spans the simple Keynesian model, closed and open economy IS-LM models, demand-side models incorporating rational expectations, Ricardian equivalence, interest rate premiums, credibility, uncertainty and supply-side models.

Discretionary fiscal policy can be interpreted as changes in fiscal variables due to deliberate government action to obtain a certain objective (for example to smooth the business cycle), while automatic (or built-in) stabilisers are types of automatic fiscal policies that do not require new legislation, because economic conditions cause government revenue and expenditure to change without any deliberate government action. If automatic stabilisers are overridden by discretionary adjustments, their impact will be neutralised. On the other hand, if they are reinforced by discretionary adjustments, the overall fiscal impulse will be stronger.

Discretionary fiscal policy decisions are needed to preserve the sustainability of public finances in the medium term and this serves as a precondition for automatic stabilisers to operate freely. Moreover, discretionary fiscal policies determine the structure of public finances, which in turn affects the functioning of the economy and the features of automatic stabilisers. The impact of fiscal actions for stabilisation purposes depends on country specifics (structure of public finances, extent and nature of shocks, political environment etc.), consumer behaviour, the type of action and their interdependence with other macroeconomic policies and variables. As with monetary policy there are risks in allowing political discretion as these policies might be influenced by the superficial appearance of current events and short-term electoral considerations. In such cases, governments could be over-keen to view poor economic growth as being a consequence of demand problems to be dealt with through demand management, rather than supply problems appropriately handled by means of structural policies.

Many practical economic and political difficulties are encountered in discretionary fiscal stabilisation policy. The combined problems of lags, crowding-out effects, the possibility that some portion of tax cuts could be saved, political constraints, inflexibility and practical problems in measuring and forecasting the state of the economy and determining how much fiscal stimulus is needed at any particular point in time, all present serious challenges for discretionary fiscal policy to have the desired effect on stabilisation. In order to avoid the typical pitfalls of fiscal fine-tuning, the main focus has increasingly been put on the working of automatic fiscal stabilisers to fulfil the

stabilisation objective. Many of the objectives that fine-tuning might be designed to achieve can be met with adequately designed automatic stabilisers, though many of the problems with fine-tuning are also applicable to these stabilisers. Discretionary changes in taxes and spending and changes in taxes and spending due to the automatic stabilisers both impact on aggregate demand. However, the automatic stabilisers are more predictable and work quicker than the discretionary ones.

Growing awareness of the limitations associated with macroeconomic fine-tuning has led to a worldwide trend towards the adoption of more rule-based institutional frameworks. These frameworks could provide authorities with specific mandates, i.e. clearly identified policy objectives, in order to set proper incentives at the decision-making level and ensure predictability of policy. Moreover, these frameworks could provide the responsible authorities with guidance on the appropriate setting of their instruments in the face of constantly changing economic developments, in such a way as to keep the path of their action through time as consistent as possible with the long-term attainment of their policy objective. The disciplinary benefits of budget rules should be weighed against the social costs of foregone output stabilisation or tax smoothing.

In the light of South Africa's historical context, in particular the rapidly rising debt levels and unsustainable deficits during the early 1990s, the country's experience may warrant a greater interest in fiscal policy rules. A fiscal policy rule such as a balanced budget rule can enhance South Africa's credibility due to a lasting commitment to fiscal discipline. However, a balanced budget rule might be too strict (and unwise) for South Africa given its deficit bias and the fact that deficits only recently declined to lower levels. Moreover, further consolidation efforts might compromise the stabilising role of automatic stabilisers and it would make it difficult for South Africa to increase social expenditure and make important public infrastructure investments. The application of fiscal rules and multi-annual targets in budgetary decision-making also touches on the "rules vs. discretion" debate. Coordination problems inherent in budgetary decision-making can be overcome by either the delegation of power to the Minister of Finance or an approach that hinges on pre-established budgetary targets and rules. Although rules seem to be

attractive and straightforward to contain the spending and borrowing bias of profligate governments, it is by no means clear what institutional design and multi-annual budgetary targets are needed for it to be effective. Imposing a tight multi-annual framework may be dysfunctional for the stabilising role of public finances in South Africa to the extent that this should be based on discretionary policy measures. Before an assessment of the feasibility of fiscal rules in South Africa can be made, it is necessary to analyse the choice of budgetary rules and procedures and their impact on the sustainability and stabilising role of public finances.

Since budgetary outcomes are affected by automatic stabilisers, appropriate fiscal policy measures to react to economic shocks, as well as unexpected fiscal changes that regularly occur after major reforms of tax and benefit systems, it is desirable to de-link the impact of automatic stabilisers from targets by using cyclically adjusted budgetary concepts. The cyclical sensitivity of the budget is a key question for both setting targets and analysing automatic stabilisers. Rigid interpretations of targets would force governments to make a trade-off between the size of automatic stabilisers and meeting the targets. Hence, an understanding of the scale of automatic stabilisers and ways of evaluating targets is important when discussing fiscal policy. The effect of the economic cycle on the budget position, therefore, has to be taken into account when assessing compliance with budgetary commitments, and in particular, the adjustment path to a specific target. The appropriate speed of convergence to a desired medium-term target also has important implications. If adjustment is too slow, confidence in attaining a sustainable path may be undermined and the scope for the operation of automatic stabilisers may be too restricted to prevent an excessive deficit. On the other hand, consolidation by definition consists of discretionary measures and attenuates demand, meaning that overly fast consolidation with excessive short-term retrenchment could also risk policy reversal if the political costs of consolidation become too high.

Although monetary and fiscal policies use different policy instruments, they are closely related in terms of certain objectives and their attainment by affecting the levels of output in the economy. Both monetary policy and fiscal policy have an impact on key

macroeconomic variables, and this in turn creates interdependencies in the pursuit of policy objectives. The close relationship between monetary and fiscal policies carries with it the possibility of conflict and sub-optimal policies, should their implementation be at cross-purposes. A coordinated monetary-fiscal policy mix may be mutually reinforcing and therefore more effective. Fiscal policy affects the economic environment in which monetary policy operates. In order to be effective, central banks also have to adjust to the non-discretionary components of fiscal policy in a systematic way. With strong automatic stabilisers in place, an increase in aggregate demand would have less effect on output and inflation, and would decrease the need for the central bank to respond aggressively. The automatic responses could always be overridden by discretionary action, while the predictable fiscal responses from automatic fiscal stabilisers are also likely to facilitate the operation of monetary policy. Automatic fiscal stabilisers could therefore play an important role in complementing countercyclical monetary policy.

It is clear from this chapter that an assessment of the extent of automatic stabilisation is needed before fiscal stabilisation could be accurately formulated and implemented. Thus, the timing and accuracy of discretionary fiscal policy in South Africa could have been adversely influenced due to the absence of any measure of the extent and role of automatic stabilisers in South Africa. The lack of measures of automatic stabilisation and the inadequate adjustment of the budget balance for economic cycles also made it difficult for the central bank to distinguish between the discretionary and non-discretionary components of fiscal policy, limiting its ability to assess fiscal trends and its impact on output and inflation and therefore to determine the appropriate monetary response. The next chapter is the first step in an attempt to shed new light into the dynamics of automatic stabilisation and its implications in the South African context in order to avoid past policy mistakes. However, the introduction of alternative fiscal indicators such as the cyclically adjusted budget balance would also have important implications for the effectiveness of fiscal policy, as it would enhance the foresight on which consumers base their decisions.

CHAPTER 3

AUTOMATIC FISCAL STABILISERS

3.1 INTRODUCTION

The previous chapter highlighted the fact that it takes time to recognize rising unemployment or a sluggish economy and that there is a further lapse of time before policy decisions are made, implemented and have an effect on the economy. This chapter takes a closer look at automatic fiscal stabilisers which could solve the problems of fiscal policy inflexibility, long time lags and errors of judgement that impede the use of discretionary countercyclical fiscal policies. Automatic stabilisers comprise provisions in the budget that cause government spending or taxes to change automatically – without legislative action – when GDP changes.

The next section highlights the business cycle properties of fiscal policy, after which automatic fiscal stabilisers are defined and the various types of automatic fiscal stabilisers described. The role and effectiveness of automatic fiscal stabilisers are analysed in Section 3.5, while Section 3.6 evaluates the advantages, disadvantages and risks associated with automatic fiscal stabilisers. Section 3.7 documents the main determinants of the size of automatic fiscal stabilisers; after which their measurement is described in Section 3.8. Section 3.9 reviews the supply-side considerations of automatic fiscal stabilisers, while Section 3.10 addresses the question whether the level of government at which fiscal stabilisation occurs has any effect on its net impact. Some international empirical evidence on the usefulness of automatic fiscal stabilisers is provided in Section 3.11. Finally, Section 3.12 reviews the main aspects regarding cyclically adjusted budget balances.

3.2 BUSINESS CYCLE PROPERTIES OF FISCAL POLICY

According to the OECD (1999:137), many components of government budgets are affected by the macroeconomic conditions in ways that operate to smooth the business

cycle. These changes in cyclically sensitive government spending or taxes affect spending in the economy mainly through its impact on disposable income, and hence household consumption (*op. cit.*:140).

Government revenue and expenditure are both highly cyclical, with expenditure decreasing (increasing) and revenue increasing (decreasing) in an economic upswing (downswing) so that the government budget reacts automatically to the cycle, increasing public deficits in recessions and decreasing them in expansions. Hence, public finances will be stronger when the economy is operating above trend, and weaker when the economy is below trend. If the economy is operating close to trend, then this suggests that the public finances should be broadly in balance.

It is thus a generally observed phenomenon that the budget balance moves procyclically reflecting the fact that the revenue from different sources of taxes increase and certain types of expenditures (such as unemployment insurance benefit payments) are reduced in upturns. The inherently procyclical nature of many revenue categories (due to the dependency of most government revenue categories on current income) and the countercyclical behaviour of some expenditures act as automatic stabilisers. Automatic stabilisation provides an indication of how far the public finances can be relied upon to reduce or prevent economic fluctuations automatically, without the need to manipulate the system at the discretion of the authorities so that the behaviour of the aggregates can be influenced in a certain direction.

3.3 DEFINITION OF AUTOMATIC FISCAL STABILISERS

According to Marin (2002:7), automatic stabilisation means that certain changes in fiscal variables, contingent to the cyclical position of the economy and not requiring any specific action from the government, help to smoothing the impact of the fluctuations in endogenous variables induced by an exogenous source on the utility or welfare of individuals.

Automatic stabilisers are directly linked to the structure of the economy and therefore respond in a timely and foreseeable manner, helping economic agents to form correct expectations which enhance confidence (European Central Bank 2002:37). The stabilisers operate symmetrically over the economic cycle, moderating overheating in boom periods and supporting economic activity during economic downturns, in principle without affecting the underlying soundness of budgetary positions as long as fluctuations remain balanced.

3.4 TYPES OF AUTOMATIC FISCAL STABILISERS

Fluctuations in economic activity influence government revenue and expenditure automatically. During an economic upswing, the tax base grows and unemployment decreases, while the opposite happens during recessions. As a result, tax revenue and unemployment-related social security expenditure fluctuate according to the business cycle and the budget balance responds automatically to the cyclical movements of the economy.

Taxes are used for stabilisation purposes, either by way of discretionary tax rate changes or via their built-in stabilisation properties. According to the OECD (1993:44), tax-based automatic stabilisers have the advantage that they are rule-based because they respond immediately to changes in activity and generate expectations of future reversals that may limit the impact of greater public borrowing on long-term interest rates. If the economy goes into recession because of a sudden decrease in autonomous consumption, for example, the collection of progressive tax revenue decreases even faster than income, and this decrease in taxes has a multiplier effect, partly offsetting the decrease in autonomous consumption, so that equilibrium income does not decrease as far or as fast as it possibly would have. According to Abel and Bernanke (2001:572), this automatic cut in tax collections helps cushion the decrease in disposable income and prevents aggregate demand from falling during recessions, making fiscal policy automatically more expansionary. On the other hand, when income levels increase during a boom, the

government collects more income tax revenue, which helps to restrain the increase in aggregate demand.

Unemployment Insurance (UI) programs attenuate the hardships of involuntary job losses while individuals are searching for alternative employment. However, UI programs may also serve wider economic goals. While the UI program could effectively limit the decline in consumption for those who became unemployed, it could also dampen the severity of a recession by sustaining consumption so that total spending during periods of high unemployment does not fall as much as would otherwise be the case (Orszag 2001:9 and Dunson *et. al* 1991:4). The UI program is able to reach the pockets of the economy that need the most stimulus, effectively limit the decline in consumption for those who become unemployed, prevent the loss of more jobs, and dampen the severity of the recession.

Two features of the unemployment insurance system qualify it as an automatic fiscal stabiliser. Firstly, when unemployment increases, total payments made by the unemployment insurance scheme increase. Secondly, contributors stop paying the unemployment insurance premiums when they are unemployed. Thus, in an economic downturn accompanied by fewer jobs, the total payroll tax in the form of unemployment insurance contributions declines immediately, while at the same time increased payments in unemployment insurance benefits inject some purchasing power back into the economy through an automatic increase in government spending.

3.5 ROLE AND EFFECTIVENESS OF AUTOMATIC FISCAL STABILISERS

Automatic stabilisers help to smooth fluctuations in the business cycle by automatically moving the budget towards a deficit or higher deficit during a recession and towards a surplus or higher surplus during an expansion. The income-based tax system or the UI system could play an important role in converting some likely periods of recession into periods of normal growth as well as in boosting growth in the first year following recession troughs. By preventing sharp economic fluctuations, fiscal stabilisers may raise

long-term economic performance and avoid frequent discretionary changes in spending or tax rates (Van den Noord 2000:2).

Apart from discretionary policy, Van den Noord (2000:4) notes that the impact of automatic stabilisers may, at varying degrees, be reinforced by other mechanisms that operate to smooth the business cycle. For example, the behaviour of imports is sensitive to short-term fluctuations in aggregate demand and therefore helps to stabilise variations in economic activity. Similarly, permanent income theories of consumption behaviour suggest that consumer spending responds slowly to income fluctuations, which would tend to stabilise private saving behaviour.

A potential way in which the tax system could act as an automatic stabiliser has generally been overlooked. According to Auerbach (2002:15), automatic stabilisers have typically been conceived in relation to aggregate demand but, to the extent that employment levels are also determined by labour supply conditions, a progressive tax system could also serve to stabilise output. Decreasing output, in reducing marginal tax rates, could encourage greater labour supply, with increasing output and marginal tax rates having the opposite effect. Moreover, the temporary nature of the change in income, which works against the effectiveness of demand-side stabilisation, reinforces the supply-side impact. If leisure is regarded as a normal good, permanent increases in after-tax wages have an income effect that discourages labour supply, which oppose the substitution effect of the wage change. However, this offsetting income effect is largely absent from temporary changes.

The fact that fiscal policy works through both demand and supply channels has a bearing on its role and effectiveness in responding to different types of shocks (Brunila, Buti and In't Veld 2002:9). This holds for non-discretionary as well as discretionary fiscal policy. Whether budgetary authorities should do more than just letting the automatic stabilisers work, depends *inter alia* on the type and the size of the shock and on the limitations of discretionary fiscal policy. Economic shocks could be categorised into symmetric or asymmetric, country specific or global, temporary or permanent and demand or supply

shocks. The distinction between the various shocks, however, is not always clear-cut in practice.

Brunila, Buti and In't Veld (2002) argue that fiscal stabilisation is desirable in the event of a demand shock because it helps to smooth both output and inflation. The results of their study show that automatic stabilisers are quite effective in the event of shocks to private consumption, whilst it is less effective in the event of shocks to investment or external demand. In the event of a temporary supply shock, the authors argue that a conflict may arise between monetary and fiscal policy as inflation and output move in opposite directions. Interest rates may have to be raised to control inflation, while automatic stabilisers tend to limit the output loss. Some degree of output smoothing via automatic stabilisers may be desirable since the adverse effect on inflation is necessarily short-lived. Output smoothing may not be the optimal response in the event of permanent supply shocks which change the economy's potential output. Fiscal stabilisation may slow down the structural adjustment of the economy needed to reach a new equilibrium level in the event of a permanent supply shock. Automatic stabilisers are therefore useful to stabilise output in the event of temporary shocks, although in the event of supply shocks output stabilisation may come at the cost of temporarily higher inflation. However, in the event of permanent (mainly supply) shocks, high automatic stabilisers could delay the inevitable structural adjustment and, if they are symmetric, imply a stronger response needed from the monetary authorities (Brunila, Buti and In't Veld 2002:29).

The impact of automatic fiscal stabilisers on business cycle volatility is usually analysed within a linear framework. Cuaresma Reitschuler and Silgoner (2002) investigated the possibility of non-linearities in the relationship between fiscal stabilisers (proxied by the ratio of government expenditure to GDP adjusted for discretionary policy) on cyclical volatility for a panel of European Union (EU) member states. Their results indicate a non-linear relationship between government size and output growth volatility. The authors found that for relatively low levels of the government expenditure to GDP ratios, automatic stabilisers had the desired impact to the extent that they reduce business cycle

fluctuations. However, for higher ratios the effect is, at best, not significant. It was found that the impact might even be reversed to the extent that it could increase cyclical volatility. The authors also investigated the non-linearities for sub-components. They found evidence of non-linearities in the non-wage government consumption, direct taxes and total revenues, namely a stabilising property up to an estimated threshold which then eventually reverts. Allowing for non-linear effects sheds new light on the characteristics of automatic fiscal stabilisers, as well as on the quantification and nature of the link between government size and cyclical volatility. The authors suggest that it may be necessary to reassess the role of automatic stabilisers in the non-linearity context. Although the full operation of automatic stabilisers could be desirable, their overall extent might have to be reconsidered.

According to Helliwell and Gorbet (1971:830), assessments of the efficiency of automatic stabilisers usually combine static estimates of the response (flexibility) of a stabiliser to changes in income with a corresponding static multiplier showing how income responds to a change in the stabiliser. In the absence of a dynamic model, such analysis may be the best option, but it does not give an indication of how well various stabilisers cushion the effects of periodic shocks applied to a dynamic economy with lagged responses. Smyth (1966:396) also argues that the effectiveness of a stabilisation measure such as the built-in flexibility of taxation can only be measured in the context of a dynamic model, whereas the usual approaches involve the use of static models. With given tax rates, changes in income lead to changes in the same direction in tax revenues. In this way, built-in flexibility of taxation is evident. The effectiveness of automatic fiscal stabilisers could hardly be analysed in static terms because stabilisation policy is concerned with fluctuations and an essential feature of fluctuations is that the system is in disequilibrium. Adjustments are not instantaneous and can, in fact, be slow. A system may never reach static equilibrium, or it may be stable according to static formulations but unstable in its adjustment process.

3.6 ADVANTAGES, DISADVANTAGES AND RISKS OF AUTOMATIC FISCAL STABILISERS

The European Central Bank (2002:46) argues that automatic stabilisers are the appropriate way to stabilise output, as they have foreseeable, timely and symmetrical effects. Automatic fiscal stabilisers react with an intensity that is adapted to the amount to which economic conditions deviate from what was expected when the budget plans were approved. Furthermore, the automatic stabilisers are directly linked to the structure of the economy and therefore respond in a timely and foreseeable manner, helping economic agents to form correct expectations, which enhance confidence (European Central Bank 2002:37). These features of automatic stabilisers are almost impossible to replicate with discretionary policy decisions by the authorities.

However, automatic fiscal stabilisation also has drawbacks and limitations. According to Di Bella (2002:6), fiscal stabilisers may not work, or may actually increase output variability if perverse effects are associated with their functioning, such as where fiscal deficits during recessions give rise to increases in interest rates due to public debt risk or sustainability issues. The European Commission (2001:56) points out that automatic stabilisers are useful to stabilise output in the event of temporary shocks, but that high automatic stabilisers, in the event of permanent (mainly supply) shocks, may delay the inevitable structural adjustment. If they are symmetric, it may imply that a stronger response is needed from the monetary authorities. Furthermore, sizeable automatic fiscal stabilisers could delay the adjustment of an economy because a high tax burden and generous social payments could reduce the incentive to work, invest and innovate and thereby weaken economic activity (European Central Bank 2002:35). Generous unemployment benefits, for example, reduce the incentive for laid-off workers to seek new employment, to accept different employment conditions or to retrain. High taxes coupled with subsidies or ailing industries could similarly make it less profitable for firms to adjust to changing economic conditions, leading to a significant loss in efficiency.

Discretionary fiscal policies are often inappropriate demand management instruments, except in extraordinary circumstances such as when fiscal consolidation or fiscal structural reforms are required. These discretionary measures may be important as they are needed to implement structural changes in public finances and to deal with exceptional situations, particularly when the economy experiences extraordinary shocks. Discretionary fiscal policy decisions are also needed to preserve the sustainability of public finances in the medium term. Active fiscal consolidation using discretionary policies is therefore appropriate when budgetary positions are unsound or when there are risks to fiscal sustainability arising from high debt and future fiscal obligations (European Central Bank 2002:38).

3.7 DETERMINANTS OF THE SIZE OF AUTOMATIC FISCAL STABILISERS

According to the European Commission (1997:95), the magnitude of budgetary automatic stabilisers is quite important for most of the EU Member States and varies substantially across countries and over time. The size of automatic fiscal stabilisers is important for budget planning and for the assessment of progress towards fiscal targets throughout the cycle. With a given cyclical pattern of the economy, the amplitude of budgetary fluctuations reflects the size of automatic stabilisers which, in turn, is determined by many factors as discussed in the remainder of this Section.

3.7.1 Size of government

The size of automatic fiscal stabilisers varies with the importance of the government sector in the economy. The higher the share of tax revenue in the economy, for example, the greater is the sensitivity of government income to fluctuations in GDP. The OECD (1993:37) argues that the size of the public sector relative to GDP is the most important element in determining the extent of the automatic stabilisers. However, Section 3.5 pointed out that the impact of automatic fiscal stabilisers might be reversed beyond some optimal level of government size.

3.7.2 Tax and expenditure structure and the sensitivity of budget components to the cycle

The size of automatic fiscal stabilisers also depends on the budget's sensitivity to the economic cycle (OECD 1999:138). The sensitivity of budget receipts to cyclical fluctuations differs for each revenue category. For example, the level of corporate taxes paid by the business sector is highly sensitive to the cycle due to the response of profits to cyclical fluctuations, while social security contributions, which are obviously linked to the level of employment, have a low elasticity reflecting the prevalence of a ceiling on the tax base. The cyclical sensitivity of personal income tax and indirect taxes is situated between these two extremes. Based simply on the relative size of its fluctuations, the corporate income tax could be a potentially important source of automatic stabilisation (Auerbach and Feenberg 2000:18). According to the OECD (1993:44), the extent of the cyclical fluctuation in government revenue depends on two factors: i) the size of the initial level of taxation (the average tax rate); and ii) the elasticity of taxation with respect to changes in output (the marginal tax rate). Furthermore, the cyclical behaviour of tax yields may be changing over time due to reforms of tax systems. For example, reform initiatives that flatten personal tax rate structures reduce the automatic stabilising properties of tax systems. Cohen and Follette (2000: 40) and Van den Noord (2000:4) maintain that higher income tax rates represent stronger automatic stabilisers.

Thus, the progressivity of the tax system is an important factor in determining the size of automatic stabilisers. Government revenue fluctuates with slightly greater amplitude than fluctuations in output. In part, this stems from the difference between the average to marginal rates of taxation on labour income. Such a difference means that when average income per person employed decreases during a recession, either through a decrease in overtime work or through a decrease in wages, the decrease in government revenue is more rapid than that of average incomes.

The structure of government revenue and expenditure is crucial in determining the capacity of government to use the budget as an effective tool for macroeconomic policy (OECD 1993:37). The higher the average tax rate on income from a cyclically sensitive

source, the larger will be the automatic stabiliser. For example, tax is lost when an employee is made redundant. In this case, the amount of stabilisation depends on the average tax rate on labour income (defined as wage income plus social security contributions). Van den Noord (2000:7) also argues that the tax structure has a significant impact on the size of automatic stabilisers. The higher the taxation of cyclically sensitive tax bases, the more tax revenue will vary with the business cycle and hence the greater will be the cyclical sensitivity of the fiscal position.

3.7.3 The effectiveness of stabilisation efforts in relation to the openness and structure of the economy

The dampening effect of automatic stabilisers on output fluctuations differs significantly across countries. It depends, amongst others, on the degree of openness of the economy and on the structure of tax and expenditure systems. According to Barrell and Pina (2000:23), openness – often inversely related to economic size – plays against the effectiveness of budgetary stabilisers. The European Commission (1997:99) argues that in the open economies of the smaller EU Member States, the impact of the automatic stabilisers on output fluctuations could be expected to be relatively modest because of the importance of the trade leakages, which reduce the domestic effectiveness of fiscal policy. In the more closed economies of the larger EU Member States, the dampening effect of the automatic stabilisers should be more significant. The countries with open economies therefore need, *ceteris paribus*, comparatively larger budgetary fluctuations in order to achieve the same degree of output smoothing as obtained in the more closed economies, which have automatic stabilisers of a smaller size (OECD 1993:42).

Thus, the effect of automatic stabilisers on economic activity could be significant or almost non-existent, depending on the structure of the economy (OECD 1993:42). The degree of stabilisation attained depends on the same factors that influence tax and expenditure multipliers following discretionary changes in fiscal policy: trade flows, savings reactions and the degree of flexibility in labour and product markets. The fact that a slowdown in economic activity driven by falling export demand is likely to have

noticeably less impact on revenues than one driven by weak consumer spending due to the impact on taxes, for example, indicates that a single gross measure of the sensitivity of the budget to the cycle might be misleading.

3.7.4 Fiscal restraints

Eichengreen (1997:94) states that there is empirical as well as counterfactual evidence that governments that operate under Maastricht-type restrictions engage in significantly less automatic stabilisation. Governments with relatively strict restrictions on deficits and debt are found to stabilise the least. Anti-deficit constraints might compromise the stabilising role played by automatic fiscal stabilisers, especially for negative demand shocks (Millar 1997:13). Such constraints could be destabilising if fiscal authorities are forced to adopt restrictive measures to offset revenue shortfalls when negative demand shocks occur, which could amplify the decline in output. However, since budget rules do not preclude large surpluses, the response of fiscal authorities would not necessarily be destabilising in the presence of positive demand shocks.

3.7.5 The relationship between automatic and discretionary stabilisation

The overall degree of fiscal stabilisation reflects both the operation of the stabilisers themselves and their influence on, and interaction with, discretionary policies (OECD 1999:141). Thus, if automatic stabilisers are overridden by discretionary adjustments, their impact will be neutralised. On the other hand, if they are reinforced by discretionary adjustments, the overall fiscal impulse will be stronger.

3.7.6 The Unemployment Insurance system

Auerbach and Feenberg (2000:19) maintain that the relationship between output fluctuations and changes in the level of unemployment benefits is complex, largely determined by the relationship between output and unemployment, the extent of unemployment covered by unemployment insurance, the rate at which benefits are

required by those eligible, and the level to which that fraction of lost wages is replaced by unemployment insurance. Simulations by Dungan and Murphy (1995:32) indicate that the power of the unemployment insurance system as a stabiliser in the Canadian economy naturally varies over time with the size of the unemployment insurance system. This study also indicated that the unemployment insurance system has a greater stabilising effect in years with a higher level of unemployment and concomitantly higher levels of unemployment benefits paid. According to Dunson *et al.* (1991:33-35), the changing nature of the business cycle, the change in the composition of the labour force and the characteristics of jobs covered by the Unemployment Insurance system may indirectly affect the effectiveness of the Unemployment Insurance system as an automatic fiscal stabiliser. Moreover, the cyclical sensitivity of total benefits will increase with increases in coverage, benefits per recipient and the duration of benefits (Dunson *et al.* 1991:24).

According to the European Commission (2001:53), a reduction in the duration of unemployment benefits may have several effects: on the one hand, it would make a dent in the current income of people with a high consumption propensity; on the other hand, it might render employment supply more responsive to economic fluctuations, thereby limiting the increase in unemployment during economic downturns. Structural reforms may lead to lower fiscal stabilisation if they entail a reduction in progressivity of tax systems and less generous unemployment benefits.

Dungan and Murphy (1995:33) found that unemployment insurance rate increases undercut unemployment insurance's ability to stabilise the economy during downturns. Unemployment tends to lag the business cycle, so that the fluctuations in output and benefits are usually not contemporaneous. In the case of the Canadian economy, Dungan and Murphy (1995:3) found that the dampening effect is very small in the first year and that it takes more than three years to have the maximum impact on income and employment. Employment and unemployment levels do not change immediately after a change in the level of economic activity. Therefore, unemployment insurance contributions and payments do not adjust without a lag following upon changes in the business cycle. Thus, the stabilisation properties of the unemployment insurance system

are blunted somewhat in the shorter term. This lag undercuts the effectiveness of unemployment insurance as an automatic stabiliser in the event of output shocks.

Chimerine *et. al* (1999:12) maintains that the UI system provides a positive psychological and stabilising benefit to the macro-economy. This psychological impact is, however, not quantifiable, so that the overall stabilising impact of the UI system is underestimated. The UI safety net gives all stakeholders (potential recipients, employers, consumers, investors and policymakers) the confidence to maintain their consumption and investment patterns and as a result, relieves stress, mitigates against over cautiousness in spending and prevents large increases in the savings rate in periods of economic volatility. This is important in the event of an economic downturn where sustained confidence and expectations prevent the recession from feeding on itself.

3.7.7 Other factors

Di Bella (2002:26) argues that fiscal stabilisers will be more effective the larger the proportion of credit-constrained households and firms is. According to Brunila, Buti and In't Veld (2002:9), among country-specific factors, the flexibility of the labour, product and financial markets have a significant impact on the smoothing capacity of automatic stabilisers. Furthermore, the response of tax bases to changes in activity may depend on the nature of the economic shock(s) that produced the boom or recession. The precise impact of cyclical conditions on public finances depends on the composition of GDP growth (European Commission 2003:221). Typically, a change in the growth rate of domestic demand will have a more profound impact on the fiscal accounts than a shock to external demand. Finally, the distribution of income also influences the size of automatic fiscal stabilisers. According to Auerbach and Feenberg (2000:12), several authors have estimated that the income of lower-income individuals is more cyclically sensitive to macroeconomic conditions, as measured by fluctuations in aggregate income or the unemployment rate.

3.8 MEASUREMENT OF AUTOMATIC FISCAL STABILISERS

Notwithstanding important differences of detail, various adjustment procedures have been developed that all share the basic approach, calculating that part of the budget balance which results from the deviation of actual output from potential output. The calculation of cyclical components and the cyclical adjustment of budget balances are generally computed on the basis of a standard three-step procedure followed by the OECD, the IMF and the European Commission. The first step involves measuring the economy's potential output in order to identify an output gap (difference between actual and potential output) that indicates the economy's cyclical position. As a second step, elasticities of cyclically sensitive tax revenue and expenditure categories with respect to output are calculated in order to estimate the sensitivity of these items to the business cycle. In the third step, the overall budget balance is adjusted according to the results obtained in the previous steps. The calculation of cyclical adjusted budget balances could also be refined to adjust for other factors apart from the effects of the business cycle. These include, for example, shifts in capital tax revenues that arise from economic fluctuations and legislated shifts in the timing of outlays or tax payments. The impact of automatic stabilisers on economic activity is generally based on large macroeconomic model simulations.

There are, however, a number of differences with respect to the standard practice in calculating potential output, the output gap and the budget elasticities. Potential output is usually calculated by a mechanical approach using smoothing devices such as Hodrick-Prescott (HP) filters or, on the basis of economic theory, by making use of a production function approach. In deciding between the various approaches for estimating potential output, there is inevitably a trade-off between the degree of simplicity of the individual approaches and the ability to take into account the insights of economic theory. Budget elasticities are either econometrically estimated or derived from tax or expenditure laws. Each approach has specific advantages and disadvantages related to factors such as characteristics of the budget item, quality of data, frequency of reforms and discretionary actions.

3.9 SUPPLY-SIDE CONSIDERATIONS

Automatic stabilisation also has many supply-side considerations that are often neglected. When taxes change, incentives change and this then affects supply. Taxes are always distortionary, meaning that they cause people to change behaviour. Taxes and spending could affect the economy in many ways and may alter the prospects for economic growth in the longer term by changing incentives to work, save and invest. Hemming, Kell and Hahfouz (2002:9) argue that although the analysis of the stabilisation role of fiscal policy traditionally focuses on its demand-side effects, supply-side effects could be seen as more important over the longer term. In assessing the short-term impact of fiscal policy, attention should also be given to the way in which changes to labour income taxes affect the supply of labour and changes to capital taxes affect saving and investment. Moreover, attention should also be given to the way in which spending changes affect the productivity of labour and capital.

According to the Congressional Budget Office (2003), the supply-side effects on work and investment are generally thought to be smaller in the short term than in the long term. In the end, however, the impact of changes in taxes and spending on the supply of labour and capital will largely depend on how those changes are financed. In general, if a tax cut is ultimately financed by reducing spending, its supply-side effects will be enhanced in the long term. However, if current tax cuts are financed by raising marginal tax rates in the future, adverse supply-side effects could result in the long term.

Auerbach (2002:15) also indicates that a tax system with progressive tax rates might serve to stabilise output to the extent that employment levels are also determined by labour supply conditions. When output declines, the lower marginal tax rates could encourage labour supply; conversely, when output increases, the higher marginal tax rates could discourage labour supply. This impact works through incentive effects of marginal tax rates, rather than through changes in tax payments.

3.10 LEVEL OF IMPLEMENTATION

Apart from the issue of how fiscal decentralisation affects the capacity of a country to achieve sound and sustainable public finances, it may also be relevant as regards the effects of fiscal policy on the stabilisation of economic activity, and in particular the operation of automatic stabilisers. Automatic fiscal stabilisers are not confined to the national government alone. They could work at all levels of government. This usually depends on the assignment of revenue and expenditure functions. The question therefore arises whether the level of government at which fiscal stabilisation occurs has any effect on its net impact.

According to the European Commission (2003:152), the traditional literature on fiscal federalism provides arguments in favour of centralising the stabilisation, as lower levels of government might not have the right incentives to provide an optimal level of stabilisation. Local governments, for example, could try to free-ride on the effort of others and the possibilities of local governments to run countercyclical policies (e.g. by means of letting automatic stabilisers work) are in many cases limited given the existence of borrowing and budgeting restrictions. As a result, it is widely believed that there may be good reason to shield the income of lower levels of governments to some extent from cyclical fluctuations. This can be achieved by either only assigning tax bases to lower levels of government that are sufficiently stable over the cycle, or by developing a system of shared taxes or grants that correct for cyclical variability in own taxes at lower levels of government.

According to Bayoumi and Masson (1997:150), there is a direct impact on the level of local government debt when local governments allow fiscal stabilisation within their own region. To the extent that citizens take account of the future tax liabilities implicit in this increase in debt in their current saving decisions, they will partially offset the fiscal boost provided by the government. However, if a federal government provides stabilisation across a number of regions all experiencing different disturbances, the impact on federal

debt will tend to cancel out with no expectations regarding future tax liabilities, and hence less of a private sector offset to fiscal stabilisation.

According to Bayoumi and Masson (1997:156), inter-regional automatic stabilisers provided by the federal government which create no new debt (because net receipts by one region are offset by net payments from another) will be more effective at changing aggregate demand than equivalent stabilisers provided by regional government levels. The reason is that the Ricardian effect, in which private individuals foresee the impact of fiscal policy on future tax liabilities and therefore offset the actions of the government, will not operate in the federal context provided that a deficit in one region is offset by a surplus in another.

3.11 INTERNATIONAL EMPIRICAL EVIDENCE

Van den Noord (2000) maintains that the built-in elasticity of government expenditure in OECD countries (which reflects cyclical variations in unemployment-related expenditure only) is relatively minor given the small share of such spending to total spending. For most countries the author found elasticities in the 0 to $-0,25$ range. The European Commission (2001) also reports that automatic stabilisers in the European Union work predominantly on the revenue side as the revenue sensitivity to the output gap is more important than the expenditure sensitivity. This could be explained by the fact that most revenues fluctuate with growth while only unemployment expenditure, which forms only a small part of overall government expenditures, is assumed to respond to cyclical fluctuations. The contribution to economic stabilisation made by automatic stabilisers in the euro area is, on average, generally higher than in other industrialised countries (Duisenberg 2003).

Dungan and Murphy (1995) found that the UI program acted as a powerful and important automatic stabiliser in the Canadian economy in the 1981-1982 as well as the 1990-1991 recessions. It reduced the GDP loss by about 13 per cent in 1982, and by 14 per cent for 1983. Moreover, the losses in unemployment that were prevented by the UI program

were of a similar magnitude. In contrast to the findings for the European Union and the OECD countries, virtually the entire stabilising effect of the UI system came from the benefit payments side. The results also indicated that the stabilising effect of the UI system was larger compared to other fiscal stabilisers such as Canada's federal personal income tax system. Simulations also revealed that Canada's UI system had a significantly larger stabilising effect than the UI system in the United States.

In the case of the US economy, simulations by Dunson *et. al* (1991) found that in the 1980s, the UI system was only two-thirds as effective in stabilising the economy after a monetary shock than what it had been in the 1970s. This study found that the unemployment insurance system does act as an automatic stabiliser, although to quite a minor extent and that its importance has diminished over the years. Chimerine (1999) provides further historical and analytical evidence that demonstrates that the UI system acted as an automatic fiscal stabiliser in the United States during the three recessionary periods (1973-1975, 1980-1982 and 1990-1991), with evidence of some weakening of effectiveness in the 1980s, but with a rebound of effectiveness in the 1990s.

The level of cyclicity of government expenditure varies across spending categories, countries and over time. Government expenditure in the G-7 countries appears to be broadly countercyclical, while government expenditure in developing countries is highly procyclical. Talvi and Vegh (2000) found in a sample of 56 countries (20 industrial and 36 developing countries) that the correlation between the cyclical components of government consumption and output in the G-7 countries is close to zero, while the correlation is positive in every single one of the 36 developing countries. The authors argue that procyclical fiscal policy arises as an optimal response to tax base volatility and political pressures for overspending. Using Generalised Method of Moments (GMM) estimation techniques for dynamic panel data models, Braun (2001) also found that government expenditure in a sample of 35 developing countries is particularly procyclical. The author maintains that 40 per cent of the difference between OECD countries and developing countries could be explained by the larger size of government in the former, and by the larger proportion of transfers in expenditure. Moreover, the

author provides evidence that political competition among powerful groups has a stabilising effect in OECD countries and a destabilising effect in developing countries and that the debt crises of the early 1980s also contributed significantly to procyclical fiscal policy in developing countries. According to Budnevich (2002), fiscal policy in Latin American countries did not play a substantial countercyclical role. It was found that fiscal policies in times of recessions are typically oriented towards maintaining financial solvency, while during booms expenditure tends to expand with the cycle.

3.12 CYCLICALLY ADJUSTED BUDGET BALANCES

The size of the budget balance reflects temporary factors, such as the effects of the business cycle or one-time shifts in the timing of spending and tax receipts, as well as the longer-lasting impact of factors such as changes in tax and spending legislation and changes in the trend growth rate of the economy (Congressional Budget Office 2003). Hagemann (1999:1) describes the cyclically adjusted (structural) budget balance as the government's actual fiscal position purged of the estimated budgetary consequences of the business cycle. This balance is designed in part to provide an indication of the medium-term orientation of fiscal policy. Cyclically adjusted government balances give a clearer picture of the underlying fiscal situation because it abstracts from cyclical developments in economic activity to show what the government balance would be if output was at its potential level. Hagemann (1999:3) maintains that, in assessing or formulating fiscal policy, failure to distinguish between temporary and permanent influences on the budget poses the risk that fiscal levers may be over- or under-adjusted in response to budgetary developments that might be reversed automatically over the course of the business cycle. According to the Congressional Budget Office (1993), budget measures that separate out cyclical and other temporary factors are useful as some analysts use them to discern underlying trends in government saving, to determine whether the budget is imparting a positive or negative impulse to the growth of real income in the short term, or to provide estimates of the extent to which changes in the budget are caused by normal movements of the business cycle and thus are likely to prove temporary.

Cyclically adjusted revenues exclude the loss of revenues that automatically occurs during recessions, while cyclically adjusted expenditures exclude the additional spending that follows from an increase in unemployment. The cyclical adjustments to revenues are negative when actual GDP exceeds potential GDP. By contrast, the cyclical adjustments to expenditure are positive when the unemployment rate is less than the non-accelerating inflation rate of unemployment. The cyclical adjustments to the budget balance equal the cyclical adjustments to revenue less the cyclical adjustments to expenditure.

Certain shortcomings of the cyclical adjusted budget balance could also be identified. The European Central Bank (2002:37) argues that cyclically adjusted data are imperfect indicators of the medium-term budgetary position and of consolidation efforts and needs as there are methodological problems in estimating budgetary sensitivities and trend growth. Empirical estimates of the cyclical budget balance vary significantly. Different point-in-time output gap and elasticity estimates produce different point-in-time estimates of automatic stabilisers. Thus, relying on automatic stabiliser estimates for budgeting and decision-making purposes is difficult, as a given budget deficit may be entirely cyclical (remedial action is not required) or entirely structural (remedial action required), depending on the assumptions.

Moreover, temporary factors affecting the budget still need to be considered when interpreting cyclically adjusted budgetary data. Structural fiscal balance indicators usually reflect other factors, such as changes in inflation or interest rates, special features of the tax and expenditure systems, such as normal time lags in tax collection or specific accounting operations. While changes in the structural primary balance largely abstract from the impact of changes in inflation and interest rates, they remain subject to the other factors. Short-term changes in the structural fiscal balance also depend on the composition of demand and income to a sizeable extent.

The interpretation of the structural budget balance requires a degree of caution, as its use as an indicator of medium-term fiscal policy stance rests on several, mostly implicit, assumptions. In this study, for example, the budgetary elasticities are assumed to be

constant over time, the output gaps sum to zero and only tax revenue and unemployment insurance benefit payments are assumed to respond to the cycle. The cyclically adjusted balance should therefore always be assessed in relation to the particular situation and against the background of the overall balance.

3.13 SYNOPSIS

This chapter documented the main theoretical considerations and international empirical evidence regarding automatic fiscal stabilisers. Some components of the government budget react automatically to the business cycle, increasing public deficits in recessions and decreasing them in expansions. The inherently procyclical nature of many revenue categories (due to the dependency of most government revenue categories on current income) and the countercyclical behaviour of some expenditures act as automatic stabilisers. Automatic fiscal stabilisers could be defined as the reaction of the government budget to economic fluctuations in the absence of any government action.

The two most important types of automatic fiscal stabilisers are personal income tax collections and unemployment insurance benefit payments. Revenue stabilisers have inherently a larger effect than expenditure stabilisers (given progressive tax systems). However, fiscal action on the expenditure side is more effective because it feeds directly into demand, while taxes could partly be saved or dissaved.

Automatic stabilisers, therefore, help to smooth fluctuations in the business cycle by automatically moving the budget towards a deficit or higher deficit during a recession and towards a surplus or higher surplus during an expansion. The income-based tax system, or the Unemployment Insurance system, could play an important role in converting some likely periods of recession into periods of normal growth and boost growth in the first year following recession troughs. By preventing sharp economic fluctuations, fiscal stabilisers may raise long-term economic performance and avoid frequent discretionary changes in spending or tax rates. The essential feature of automatic stabilisation is that it “leans against the prevailing wind”. When the economy

expands, the decrease in government spending on transfer payments and the increase in the level of taxes result in a budget surplus. When the economy contracts, the increase in government spending due to higher transfer payments and the decrease in the level of taxes yield a budget deficit.

Several factors that influence the size of automatic fiscal stabilisers have been identified. The main determinants of the size of automatic fiscal stabilisers include the importance of the government sector in the economy, the tax and expenditure structure, the sensitivity of budget components to the cycle, the distribution of income across individuals, the significance of fiscal restraints, the effectiveness of stabilisation efforts in relation to the openness and structure of the economy and the nature of economic shocks that produce the boom or recession.

Automatic stabilisers are regarded as a more appropriate way to stabilise output, as they have foreseeable, timely and symmetrical effects that react with an intensity that is adapted to the amount to which economic conditions deviate from what was expected when the budget plans were approved. Moreover, they are directly linked to the structure of the economy and therefore respond in a timely and foreseeable manner, helping economic agents to form correct expectations, which enhance confidence. These features of automatic stabilisers are almost impossible to replicate with discretionary policy decisions by the authorities.

There are drawbacks and limits to the successful implementation of automatic fiscal stabilisation as well. Automatic fiscal stabilisers may not work, or may actually increase output variability if perverse effects are associated with their functioning, such as where fiscal deficits during recessions give rise to increases in interest rates due to public debt risk or sustainability issues. Moreover, automatic stabilisers are useful to stabilise output in the event of temporary shocks, but large automatic stabilisers, in the event of permanent (mainly supply) shocks, may delay the inevitable structural adjustment. If they are symmetric, it may imply that a stronger response is needed from the monetary authorities. Furthermore, sizeable automatic fiscal stabilisers could delay the adjustment

of an economy because a high tax burden and generous social payments could reduce the incentive to work, invest and innovate and thereby weaken economic activity.

Various adjustment procedures have been developed that all share the basic approach, calculating that part of the budget balance which results from the deviation of actual output from potential output. International organisations such as the IMF, the OECD and the European Commission regularly calculate cyclically adjusted budget balances. The adjustment is generally made on the basis of a standard three-step procedure, with differences with respect to the calculation of potential output, the output gap and the budget elasticities.

Automatic stabilisation also has many supply-side considerations that are often neglected. In assessing the short-term impact of fiscal policy, attention should also be given to the way in which changes to income taxes on labour affect the supply of labour and changes to capital taxes affect saving and investment. The level of government at which automatic fiscal stabilisers are allowed to work, usually depends on the assignment of revenue and expenditure functions.

Calculations of cyclically adjusted budget measures attempt to remove the effects of the business cycle on revenues and expenditures (i.e. the cyclical part of the budget). The size of the budget balance reflects temporary factors, such as the effects of the business cycle or of one-time shifts in the timing of spending and tax receipts, as well as the longer-lasting impact of factors such as tax and spending legislation and changes in the trend growth rate of the economy. In assessing or formulating fiscal policy, failure to distinguish between temporary and permanent influences on the budget poses the risk that fiscal levers may be over- or under-adjusted in response to budgetary developments that might be reversed automatically over the course of the business cycle.

The desirability of automatic fiscal stabilisers depends on particular country specifics and it is therefore difficult to make an assessment as to their effectiveness, advantages, disadvantages and risks in the South African context prior to an investigation into the

structure of the South African economy and the fiscal policies pursued. Moreover, it is not even possible to form an opinion on the extent of desirable automatic stabilisation, since no current estimates of automatic stabilisation in South Africa have been developed and discussed. South Africa's ignorance with respect to the working and extent of automatic stabilisation can therefore be regarded as a major defect in previous budgetary and decision-making processes. The main arguments put forward in Chapters 2 and 3 and their implication for this study are that the working and size of automatic fiscal stabilisers must be recognised and quantified and their role and impact be evaluated against fiscal policy objectives, the structure of the economy and their relation to other macroeconomic policies and objectives. This is explicitly the goal of Chapters 4 to 7, which compare the theoretical considerations regarding automatic fiscal stabilisers documented in this chapter against empirical findings on the South African situation. In these chapters, the size and role of automatic stabilisers such as tax revenue and unemployment insurance benefit payments are quantified, their effectiveness are compared with other developing countries, automatic stabilisation at different levels of government are evaluated and a cyclically adjusted budget balance indicator is calculated.

In addition, an analysis of the South African business cycle, the structure of public finances and the fiscal policies pursued in South Africa will provide useful information with respect to the size of automatic fiscal stabilisers and their interaction with discretionary fiscal policies and the monetary-fiscal policy mix. The role of automatic fiscal stabilisers are also investigated in the African context by an empirical investigation into their effectiveness as well as considerations with respect to the composition of government revenue and expenditure in these countries and the challenges that discretionary fiscal policy in this region face.

CHAPTER 4

SOUTH AFRICAN FISCAL POLICY AND THE BUSINESS CYCLE

4.1 INTRODUCTION

The previous chapter highlighted the many factors that influence the size of automatic fiscal stabilisers. This chapter takes a closer look at some of these factors by analysing the South African business cycle and by documenting the main features of government finances and the fiscal policies pursued in South Africa, as this provides useful information when evaluating the empirical results in the following chapters.

4.2 THE SOUTH AFRICAN BUSINESS CYCLE

The South African Reserve Bank publishes turning-point dates for the South African business cycle. According to the Bank's latest *Quarterly Bulletin*, 6 upswing and downswing phases occurred during the period 1970 to 2000. The course, strength and duration of the South African business cycle since 1970 are depicted in Figure 4.1, while Figure 4.2 portrays the business cycle against economic growth and the output gap.

The output gap was calculated as the percentage deviation of observed real GDP from trend real GDP¹. In a similar way, the strength and duration of the business cycle are illustrated by means of a trend line and deviations from trend expressed as a percentage. Trend output and the trend in the business cycle was estimated by a Hodrick-Prescott (HP) filter ($\lambda = 100$)². According to Cerra and Saxena (2000:4), trend output (y^*) derived using the HP-filter is obtained by minimising a combination of the gap between

¹ The concepts potential output and output gap are widely used in macroeconomics even though their definition and estimation raise a number of theoretical and empirical questions. Potential output is commonly defined as the maximum output an economy can sustain without generating an increase in inflation.

² This study does not attempt to evaluate the strengths and weaknesses of different techniques to calculate potential output or to compare results for different sets of potential output and output gap estimates. In order to overcome the drawback of the poor reliability of the end of sample estimates associated with the HP-filter, the GDP series was extended by forecasts based on GDP growth assumptions taken from the National Treasury's *Budget Review 2003*.

actual output (y) and trend output and the rate of change in trend output for the whole sample of observations (T):

$$\text{Min} \sum_{t=0}^T (y_t - y_t^*)^2 + \lambda \sum_{t=2}^{T-1} [(y_{t+1}^* - y_t^*) - (y_t^* - y_{t-1}^*)]^2 \quad (1)$$

where the detrending parameter λ determines the degree of smoothness of the trend.

According to the October *Monthly Bulletin* of the European Central Bank (2000:38), a variety of methods is available for estimating potential (trend) output and they can be grouped into two broad categories: the “production function” and “statistical” approaches. The former attempts to create an explicit model of the supply-side of the economy using economic theory. The latter attempts to break the real GDP series down directly into a trend and a cyclical component.

Under the production function approach, potential output estimates are based on factor elasticities (labour, capital and technology). This approach is useful for explaining the key economic forces underlying developments in output and growth in the medium term and is widely used by international organisations such as the OECD and the IMF. There are, however, certain disadvantages associated with this approach. It is subject to important data problems and it relies on deriving measures of the trend components of the inputs, which are sometimes very difficult to disentangle. Moreover, the results depend strongly on assumptions with regard to the functional form of the production technology, e.g. returns to scale, the trend growth of technical progress as well as on estimates of the structural unemployment rate. All these assumptions are subject to heated economic debate.

Statistical methods of estimating potential output are based on the idea of extracting the trend from the output series using statistical techniques. This method can be divided into “univariate approaches”, which include methods that extract the trend from the information contained in the output series in isolation, without using the information contained in other variables, and methods that attempt to extract the trend using the

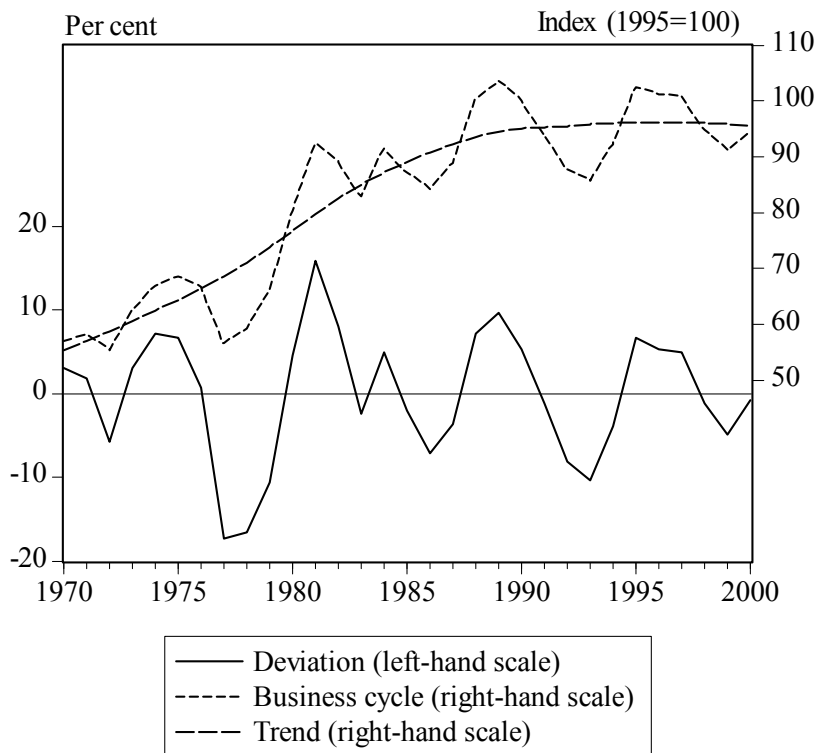
information in the output series in conjunction with information contained in other variables. As mentioned earlier, this study made use of an univariate approach called the Hodrick-Prescott (HP) filter, which derives an estimate of potential output by essentially fitting a trend through the series. The HP-filter extracts a trend component by trying to balance a good fit to the actual series with a certain degree of smoothness. A key parameter of the filter (λ) determines the respective weight given to each of the two characteristics. If λ is infinite, then all the weight will be on a high degree of smoothness leading to a linear trend. If λ is zero, then all the weight will be on goodness of fit to the original series and the estimated trend will always be the same as actual output.

The HP-filter is a pure mechanical smoothing procedure whose statistical foundations are simple and transparent. It does not require any judgemental assumptions or rely on any particular economic theory and estimates from the HP-filter can be easily and quickly replicated. The method is also parsimonious on data requirements. A clear disadvantage of the HP-filter, however, is its lack of economic foundations, which makes its results and underlying assumptions difficult to interpret economically. The HP-filter does not allow for the identification of the respective contributions of the different determinants of potential output growth (capital accumulation, labour supply, technical progress) and it is also unable to track structural changes in the economy on a timely basis. The choice of λ is arbitrary and the output gap estimates from the HP-filter are affected by end-sample biases, as the estimates of trend output tend to rely excessively on the latest developments in actual output.

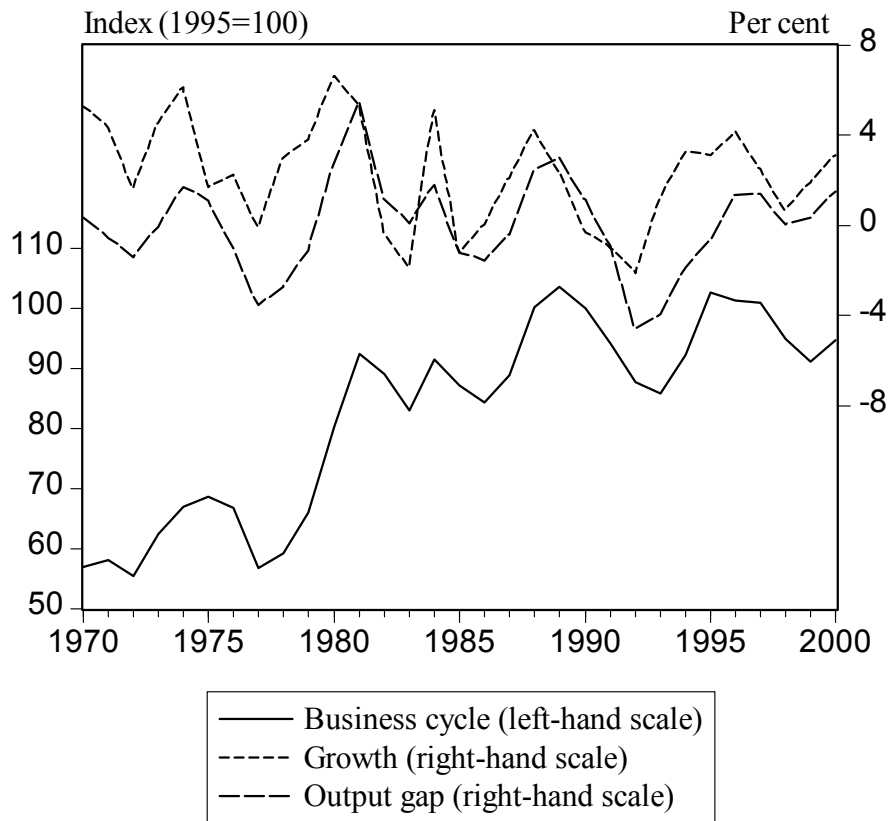
In choosing between the various approaches for estimating potential output, there is inevitably a trade-off between the degree of simplicity of the individual approaches and their ability to take into account the insights of economic theory (European Central Bank *Monthly Bulletin* October 2000:47). Different methods usually yield broadly comparable estimates of potential output growth and the change in the output gap, but estimates of the level of the output gap at any particular point in time tend to be surrounded by a greater degree of uncertainty.

Over the years, economic activity in South Africa was volatile in terms of large and persistent deviations from trend as measured by the output gap. Differences in both the duration and the upswing and downswing momentum of each cycle are evident from Figure 4.1, while Figure 4.2 illustrates similar trends for the business cycle, economic growth and the output gap.

Figure 4.1 The South African business cycle



Source: South African Reserve Bank and own calculations

Figure 4.2 The business cycle in relation to economic growth and the output gap

Source: South African Reserve Bank and own calculations

The output gap and economic growth reached their peaks of 5,5 per cent and 6,6 per cent in 1981 and 1980 respectively, a period that was marked by a surge in the gold price. The lowest values of -4,6 per cent and -2,1 per cent in the output gap and economic growth were reached in 1992, during one of the worst recessions since the Great Depression.

Some analysts described the downward trend in the business cycle during 1989 to 1993 as one of the previous century's worst recessions, while others viewed it as a depression rather than a recession (Van der Walt and Pretorius 1995:73). According to Van der Walt and Pretorius (1995:72), economic developments during this period were the result of

cyclical and structural forces and other exogenous factors such as the domestic political transition, severe droughts and an international economic recession. The downward trend during this period differed from previous downward phases because it occurred during a growth propensity that was much flatter than the growth propensity of prior recessions (*op. cit.*:77).

The upward phase of the South African business cycle from 1993 to 1997 developed against the background of various structural changes that impacted on the economy. According to Pretorius, Venter and Weideman (1999:40), economic growth during this period benefited from the removal of trade and financial sanctions in 1994, improved financial stability as reflected in a slowdown of inflation, the abolition of the financial rand in March 1995 and the gradual relaxation of other exchange control measures. Pretorius, Venter and Weideman (1999:40) maintain that the policy steps taken to correct macroeconomic imbalances in the interest of long-term sustainable economic growth and the phasing-out of export subsidies and accelerated tariff reductions which comprehensively altered the relative price structure of the economy, hampered the economy's growth momentum in the short term, but reinforced the soundness of the economy over the longer term.

The 1993 to 1997 recovery was also assisted by favourable weather conditions which led to a sharp increase in agricultural output from the drought-ridden low levels of 1992, and higher economic growth in some industrial countries with a concomitant increase in export volumes (*op. cit.*: 41). The upturn in economic activity in the first half of 1994 wavered somewhat as output was disrupted by the exceptional circumstances that surrounded the political transition, including widespread labour-market turmoil. Domestic production regained much of its lost momentum in the second half of 1994 as confidence was regained. The tightening of monetary conditions from 1994 to 1996 needed to preserve macroeconomic stability, prudent fiscal policies and international developments contributed towards the slowing and eventual reversal of the upswing in 1997 (*op. cit.*: 42).

The slowdown in economic activity during 1997 to 1999 was characterised more by a deceleration in aggregate domestic demand than in aggregate production (Venter and Pretorius 2001:67). Moreover, the second round of Asian financial market turmoil that had erupted in May 1998 prompted policy-makers to act immediately in order to restore financial market stability by tightening liquidity conditions and increasing interest rates from April to August 1998, thereby delaying the recovery in general economic activity and prolonging the downward phase of the business cycle. According to Pretorius, Venter and Weideman (1999:69), the sharp reduction in interest rates as well as the fast expansion in world economic activity following the Asian crises led to an improvement in the economic growth rate of the South African economy since 1999.

This section illustrated the course, strength and duration of the South African business cycle. The duration and momentum of upswing and downswing phases are evident from fluctuations in real GDP growth and deviations from trend as measured by the output gap. The volatility in economic activity and the various exceptional circumstances and exogenous factors that impacted on the South African economy highlight the need for effective automatic fiscal stabilisers in South Africa.

4.3 FISCAL POLICY OBJECTIVES SINCE THE 1970s

Fiscal policy in South Africa during the 1970s and early 1980s centered around demand management, including frequent variations in the size of the national budget deficit in the interest of macroeconomic stability in the relationship between growth, inflation and the balance of payments (Heyns 1999:69). According to Heyns (1999:70), official stabilisation policy in South Africa during the 1970s was premised on the Keynesian requirement of flexibility and the assumption that government could and should influence the level of economic activity through short-term fiscal adjustments in spending and taxes. Heyns (1999:73) states that the automatic response of tax yields on economic activity was an important ingredient of the national budget's total influence on the national economy. The government used discretionary policies during the 1970s, mainly to smooth out automatic fluctuations in government deficits (Heyns 1999:74). Heyns

(1995:309) argues that since the 1980s, the focus of South African budgetary policy has increasingly shifted from the earlier Keynesian emphasis on short-term stabilisation to the longer-term implications of the budget.

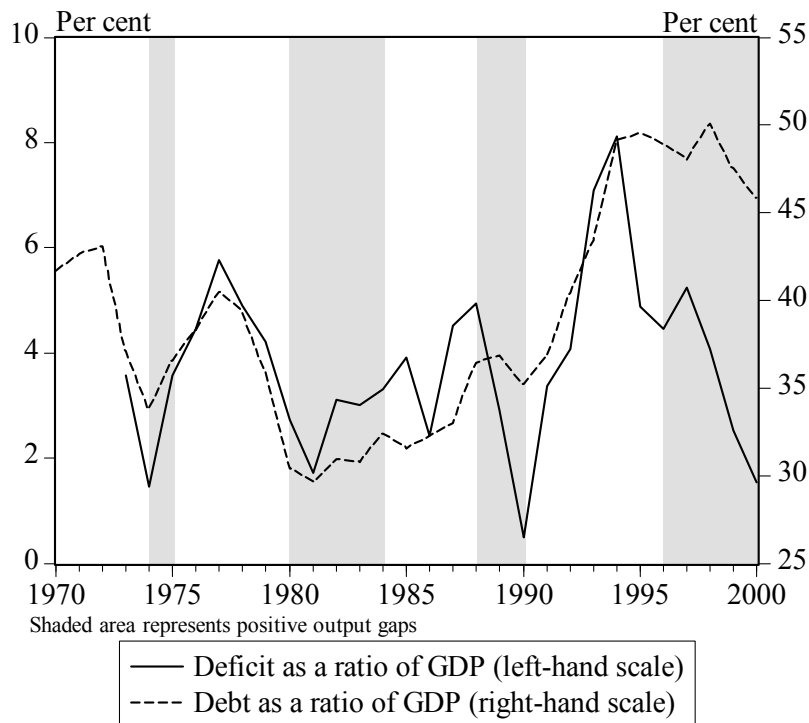
After several years of consolidation, fiscal policy in South Africa is now decidedly growth-orientated. The 2001 Budget paved the way for a growth-orientated fiscal policy stance of improved spending, significant increases in infrastructure allocations and ongoing tax reform, within the sound framework of fiscal management established over the last six years (South African National Treasury *Budget Review* 2001:1). The 2001 Budget had a renewed focus in public policy on microeconomic and structural reforms. The belief was that the series of growth-orientated microeconomic reforms would complement and sharpen the broader structural changes that have taken place in the economy. The 2002 and 2003 Budgets reinforced the growth-orientated stance of the 2001 Budget.

Figure 4.3 provides a graphic representation of the stabilisation efforts of the South African government. Countercyclical fiscal policy requires the government deficit and debt to increase during recessions and to decrease during booms. Figure 4.3 illustrates the various periods in which the government deficit and debt did not move countercyclically in South Africa. The deficit and debt responded more countercyclically during the latter half of the sample period. Moreover, the deficit performed better countercyclically during periods of positive output gaps, while the debt performed better countercyclically during periods of negative output gaps. It therefore appears that the South African government did not have much success in stabilising the South African economy over the years. Furthermore, an analysis of fiscal policy in this country shows little evidence of an explicit role defined for automatic fiscal stabilisers. To date no estimates have been published regarding the impact of automatic stabilisers on the budget and the business cycle in South Africa.

It should be remembered, however, that South Africa is a developing country with huge disparities in income and standards of living in general. Instead of stabilising the

business cycle, expenditure is dedicated towards addressing these social disparities. With regard to income tax (the largest tax component), average and marginal rates are highly progressive and much more room should exist for automatic stabilisation (the following chapters will explore these issues in more detail).

Figure 4.3 Deficit and debt during positive and negative output gaps



Source: South African Reserve Bank and own calculations

4.4 TRENDS IN GENERAL GOVERNMENT FINANCES

This section focuses on the magnitude and composition of government revenue and expenditure. A wide range of fiscal indicators is used to evaluate the overall fiscal situation, since no single indicator captures all the relevant information. Taking into consideration a range of them, helps to counterbalance the shortcomings of each single indicator. Moreover, the fiscal situation is assessed by looking at the evolution of the

indicators over a period of several years, since one year alone could give a distorted picture.

The general government sector in South Africa comprises the consolidated central³ government, provincial governments and local authorities. Until 1993, the self-governing territories and four independent states (Transkei, Bophuthatswana, Venda and Ciskei) were treated as extra-budgetary accounts of the consolidated central government. These self-governing territories and independent states were phased out in 1994. The number of provinces was increased from four to nine and the operations of the self-governing territories and independent states were either transferred to the new provincial administrations or abolished. The debt of the former independent states was added to that of the consolidated central government based on section 239 of the 1993 constitution.

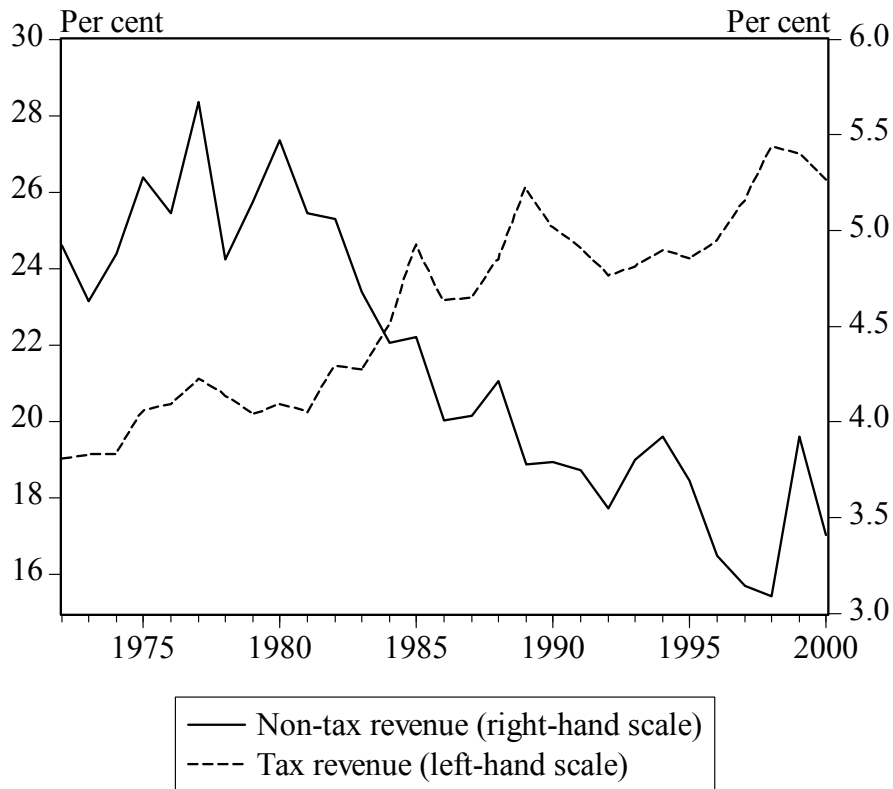
Receipts from own sources constituted a small portion of the revenue of self-governing territories and independent states. However, receipts from these taxes became part of national government revenue in 1995. Consequently, transfers from national government to the provincial administrations were increased correspondingly; to compensate for lost revenue and the devolution of further functions to provinces associated with the implementation of the 1993 constitution. As from 1997 onwards, domestic debt data include part of Namibia's debt, guaranteed by South Africa before Namibia's independence and subsequently incorporated in that of South Africa.

4.4.1 Government revenue

On average, tax revenue accounts for about 83 per cent of total consolidated general government revenue in South Africa during the period fiscal 1972/73 to fiscal 2000/2001. As illustrated in Figure 4.4, tax revenue became increasingly important towards the end of the sample period, while the opposite holds for non-tax revenue.

³ Comprising the national government, extra-budgetary institutions and social security funds.

Figure 4.4 Consolidated general government tax and non-tax revenue as a ratio of gross domestic product



Source: South African Reserve Bank and own calculations

Taxes on net income and profits and domestic taxes on goods and services are the most important categories of direct and indirect tax revenues respectively. From Table 4.1 it is clear that direct taxes are the main source of South African revenue, averaging 54,4 per cent of total tax revenue over the sample period. Indirect tax as a ratio of total tax revenue reached a maximum of 51,9 per cent in fiscal 1993/94, before declining to 46,8 per cent in fiscal 2000/01. As a ratio of gross domestic product, the highest value of 12,9 per cent was recorded in fiscal 1989/90. This was the result of stronger collections from taxes on goods and services. The improvement in the ratios of direct tax revenue and total tax revenue to gross domestic product during the last three fiscal years can partly be

ascribed to better management and the implementation of more efficient practices and procedures by the South African Revenue Service (South African Reserve Bank *Annual Economic Report* 2000:84).

Table 4.1 Components of consolidated general government tax revenue

Fiscal years	Direct Tax			Indirect tax			Total tax	
	R billions	% Total	% GDP	R billions	% Total	% GDP	R billions	% GDP
1972/73	1.9	59.4	11.4	1.3	40.6	7.6	3.2	19.0
1973/74	2.5	62.5	12.0	1.5	37.5	7.1	4.0	19.1
1974/75	3.1	64.6	12.8	1.6	33.3	6.3	4.8	19.2
1975/76	3.6	63.9	13.0	2.0	36.1	7.3	5.7	20.3
1976/77	4.0	61.9	12.7	2.5	38.1	7.8	6.5	20.5
1977/78	4.4	58.5	12.4	3.0	41.5	8.8	7.4	21.1
1978/79	4.8	55.6	11.5	3.8	44.4	9.2	8.6	20.7
1979/80	5.8	57.1	11.5	4.4	42.9	8.7	10.2	20.2
1980/81	8.1	60.7	12.4	5.2	39.3	8.0	13.4	20.5
1981/82	8.6	57.1	11.6	6.5	42.9	8.7	15.1	20.2
1982/83	10.1	55.3	11.9	8.2	44.7	9.6	18.3	21.5
1983/84	11.7	55.7	11.9	9.3	44.3	9.52	20.9	21.4
1984/85	14.0	54.2	12.2	11.8	45.8	10.3	25.8	22.5
1985/86	18.0	55.5	13.7	14.3	44.2	10.9	32.3	24.6
1986/87	19.8	54.9	12.7	16.7	45.1	10.4	36.1	23.2
1987/88	22.2	52.5	12.2	20.1	47.5	11.0	42.3	23.3
1988/89	26.7	50.3	12.2	26.5	49.8	12.1	53.2	24.2
1989/90	34.3	50.5	13.2	33.7	49.6	12.9	68.0	26.1
1990/91	39.4	52.5	13.2	35.7	47.5	11.9	75.2	25.1
1991/92	44.2	52.4	12.9	40.1	47.6	11.7	84.3	24.5
1992/93	47.7	52.4	12.5	43.4	47.6	11.3	91.1	23.8
1993/94	51.1	48.1	11.6	55.2	51.9	12.5	106.4	24.1
1994/95	61.6	50.6	12.4	60.1	49.4	12.1	121.8	24.5
1995/96	68.6	50.2	12.2	68.2	49.9	12.1	136.8	24.3
1996/97	83.1	52.9	13.1	74.1	47.1	11.7	157.3	24.8
1997/98	95.3	52.9	13.6	85.0	47.1	12.2	180.3	25.8
1998/99	108.6	53.1	14.4	95.9	46.9	12.7	204.5	27.2
1999/00	116.5	52.7	14.2	104.8	47.4	12.8	221.2	27.0
2000/01	127.9	53.2	14.0	112.3	46.8	12.3	240.2	26.3

Source: South African Reserve Bank

Table 4.2 Consolidated general government tax revenue, share of total revenue

Per cent

Fiscal years	Taxes on net income and profits	Taxes on property	Taxes on goods and services	Taxes on international trade and transactions	Other taxes	Social security contributions	Taxes on payroll	Total tax revenue
1972/73	45.1	7.2	17.6	3.8	3.6	1.0	0.2	78.4
1973/74	48.1	6.6	15.8	3.9	3.7	1.0	0.2	79.3
1974/75	50.6	5.9	13.5	4.2	3.1	1.1	0.3	78.5
1975/76	49.4	5.5	15.3	4.3	2.7	1.0	0.2	78.5
1976/77	48.2	5.6	17.3	3.9	3.0	1.0	0.2	79.1
1977/78	44.8	5.6	17.1	6.4	2.8	0.9	0.1	77.6
1978/79	43.8	5.3	20.8	5.9	2.8	1.1	0.1	79.8
1979/80	44.3	5.4	21.1	4.1	2.6	1.0	0.1	78.6
1980/81	46.8	4.9	19.9	2.7	2.4	1.0	0.1	77.8
1981/82	44.6	5.1	21.8	3.7	2.6	0.9	0.1	78.8
1982/83	43.6	5.0	23.3	4.2	2.5	1.0	0.1	79.8
1983/84	44.5	5.6	24.1	2.7	2.7	1.0	0.2	80.9
1984/85	43.6	4.9	27.2	2.1	2.5	1.0	0.2	81.4
1985/86	45.9	4.3	27.2	2.5	2.3	1.0	0.2	83.3
1986/87	45.9	4.7	27.0	3.3	2.2	1.3	0.1	84.5
1987/88	44.0	5.4	27.9	3.2	2.2	1.7	0.1	84.5
1988/89	42.2	4.9	28.8	5.1	2.0	1.5	0.0	84.5
1989/90	43.8	4.9	30.2	4.6	2.1	1.5	0.0	87.0
1990/91	45.2	5.0	29.6	3.2	2.1	1.5	0.0	86.5
1991/92	45.2	5.5	28.6	3.6	1.8	1.7	0.0	86.4
1992/93	45.2	6.0	28.1	3.6	1.7	1.8	0.0	86.5
1993/94	41.2	6.2	31.6	3.7	1.6	1.7	0.0	86.0
1994/95	43.3	6.0	30.0	3.4	1.6	1.6	0.0	86.0
1995/96	43.2	6.0	30.9	3.6	1.0	1.8	0.0	86.4
1996/97	46.4	4.7	31.0	3.4	0.7	1.9	0.0	88.1
1997/98	46.9	4.6	31.1	2.3	2.3	1.9	0.0	89.0
1998/99	47.5	5.7	30.3	2.4	2.0	1.8	0.0	89.6
1999/00	45.7	5.7	29.8	2.3	1.9	1.7	0.0	87.1
2000/01	46.5	5.0	30.4	2.7	1.9	1.6	0.5	88.5

Source: South African Reserve Bank

Table 4.2 indicates that taxes on net income and profits are the main source of consolidated general government revenue. During fiscal 1974/75, more than half of total revenue could be ascribed to taxes on net income and profits. This ratio decreased slightly to the lowest value of 41,2 per cent in fiscal 1993/94, before increasing again to 46,5 per cent in fiscal 2000/01. Over time, the tax burden has shifted away from mines and corporations towards individuals. The share of taxes on goods and services increased noticeably from below 20 per cent at the beginning of the sample period to 30,4 per cent

at the end of the sample period. Taxes on international trade and transactions increased in nominal terms after South Africa's reintroduction to international markets. Social security contributions also increased noticeably since the latter half of the sample period.

4.4.2 Government expenditure

From Table 4.3, a number of conclusions may be drawn as to the likely pattern of consolidated general government expenditure over the sample period. Expenditure on goods and services accounts for the largest share of consolidated general government expenditure in South Africa. Over the sample period, an average of 12,0 per cent of total consolidated general government expenditure was spent on servicing state debt cost. Interest payments have increased in relative importance over the years. This is because both interest rates and the size of government debt have grown. Interest payments as a ratio of gross domestic product reached an all-time high level of 6,0 per cent in fiscal 1998/99, representing 19,9 per cent and 18,1 per cent of consolidated general government current and total expenditure, respectively. Since fiscal 1998/99, interest payments of the consolidated general government as a ratio of GDP entered a downward phase, decreasing to 5,7 per cent in fiscal 1999/2000 and further to 5,4 per cent in fiscal 2001/02. The downward trend in interest payments relative to GDP can be ascribed to the steady reduction in the budget deficit since 1992/93, lower interest rates in recent years and an increase in the anticipated proceeds from state asset restructuring.

Current expenditure (83,5 per cent of total expenditure on average) outweighs capital expenditure by far. Since fiscal 1996/97, there has been a continuous decline in general government expenditure as a ratio of gross domestic product. This ratio (which averaged 30,8 per cent over the sample period) declined from 34,0 per cent in fiscal 1996/97, to 31,4 per cent in fiscal 2000/01, after reaching a maximum value of 37,0 per cent in fiscal 1993/94. National government expenditure averaged 45,1 per cent of total general government expenditure over the sample period. The role of the provincial governments, however, became increasingly more important since fiscal 1995/96. As a result, the average contribution of national government (provincial governments) for the last six

years was 40,1 (38,7) per cent. The contributions of extra-budgetary institutions and local authorities are more or less of equal size.

Table 4.3 Consolidated general government expenditure in South Africa, fiscal 1972/73 to 2000/2001

Expenditure components as a ratio of GDP							
	Goods and services	Interest payments	Subsidies and other current transfers	Current	Current primary	Capital	Total
Low	13.3	1.8	2.7	17.9	16.0	2.9	23.9
High	20.7	6.0	6.5	31.8	26.9	8.0	37.0
Average	17.7	3.8	4.4	25.9	22.1	4.9	30.8
Expenditure components as a ratio of total expenditure							
	Goods and services	Interest payments	Subsidies and other current transfers	Current	Current primary	Capital	
Low	51.4	7.2	11.2	70.0	62.8	8.7	
High	63.1	18.1	16.6	91.3	76.0	30.0	
Average	57.4	12.0	14.1	83.5	71.5	16.5	
Contributions of levels of government							
	National government	Extra-budgetary institutions	Social security funds	Provincial governments	Local authorities		
Low	37.7	8.1	0.9	21.4	9.7		
High	55.6	20.6	2.6	40.4	20.6		
Average	45.1	13.9	1.5	27.4	13.8		
Source: South African Reserve Bank and own calculations							

The health of an economy depends not only on how much the government spends, but also on how it spends its resources. A close reflection of the allocation of taxpayers' money is illustrated in Table 4.4. The consolidated general government continued to spend the bulk of its expenditure on education services over the sample period. Other important expenditure functions are interest payments, expenditure on defence services and health expenditure.

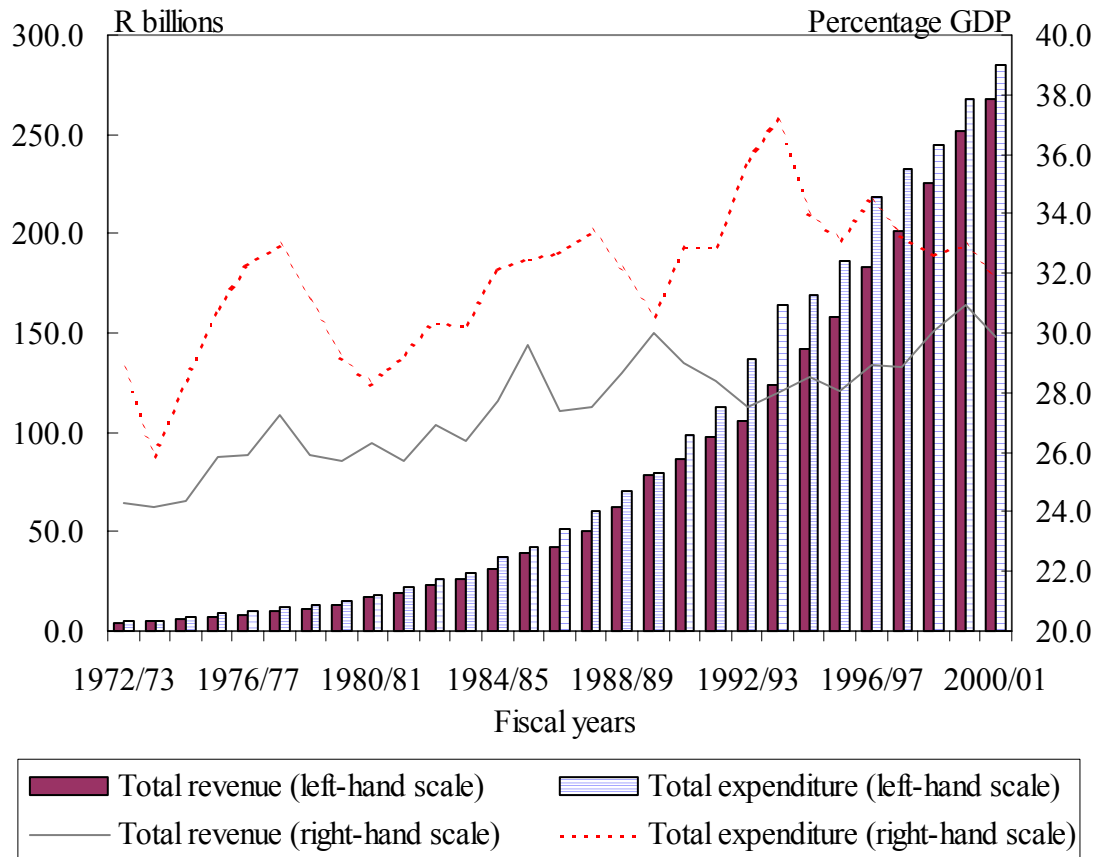
Table 4.4 Functional classification of consolidated general government expenditure, fiscal 1982/83 to fiscal 2000/2001

	Minimum	Maximum	Average
General public services	8.1	12.7	9.4
Defence	4.5	14.2	9.6
Public order and safety	5.5	10.0	7.7
Education	17.1	22.0	19.3
Health	8.9	10.3	9.6
Social security and welfare	5.9	13.0	8.2
Housing and community services	2.8	5.6	4.0
Recreation and culture	1.2	1.7	1.5
Environmental protection	1.9	2.2	2.1
Fuel and energy	0.2	4.5	0.7
Agriculture, forestry and fishing	1.4	4.4	2.8
Mining, manufacturing and construction	0.6	3.7	2.1
Transportation and communication	4.6	10.1	6.2
Other economic services	1.5	3.5	2.4
Interest	12.4	17.3	14.2
Other	0.9	6.2	2.1
Source: South African Reserve Bank			

Social security and welfare provision, on average, absorbs about 8,2 per cent of consolidated general government expenditure. According to Katz (1994:130), social grants account for about a fifth of the reported disposable incomes of the poorest 40 per cent of South African households. The largest and most important item in this category is the old-age pension payable, based on means test, to women and men who have reached the ages of 60 and 65, respectively. Social security funds, of which the Unemployment Insurance Fund (UIF) is the most important, only comprise a small portion of the income and expenditure flows of the consolidated general government. On average, UI benefits represent only 0,2 per cent of gross domestic product and 0,7 per cent of total consolidated general government expenditure. For the last ten years, however, the average ratio of UI benefits to gross domestic product (total expenditure) was 0,4 (1,1) per cent. UI contributions as a ratio of gross domestic product (general government revenue) averaged 0,2 (0,8) per cent. The corresponding ratios for the last ten years were 0,3 (1,2) per cent.

4.4.3 Government balances

Figure 4.5 portrays the trends in general government revenue, expenditure and the deficit over the sample period. Total revenue increased at an average year-on-year growth rate of 16,4 per cent over the sample period. The corresponding rate in total expenditure is 16,2 per cent. The largest deficit was recorded in fiscal 1993/94 due to strong growth in expenditure. Since then, the general government seems to have brought their expenditure under control, leading the deficit towards a downward trend towards the end of fiscal 2000/01.

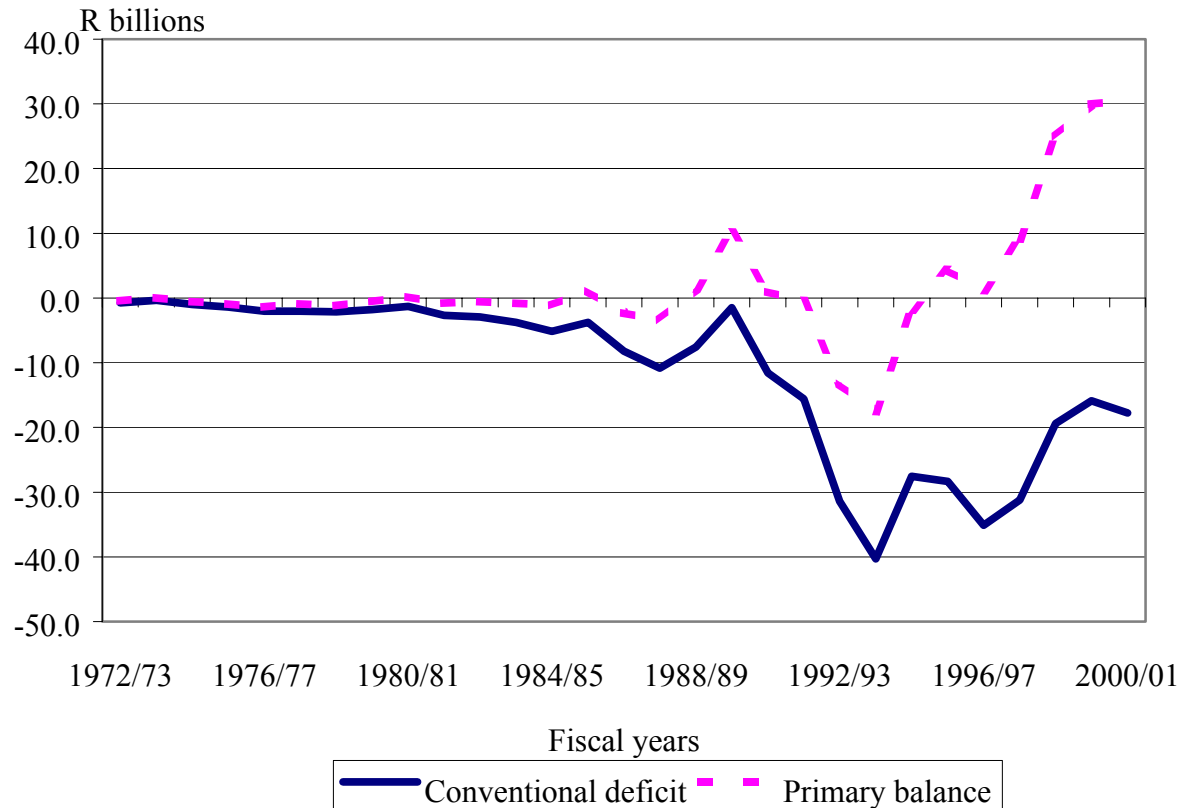
Figure 4.5 Total consolidated general government revenue and expenditure

Source: South African Reserve Bank and own calculations

A graphic representation of the consolidated general government balances (Figure 4.6) shows that the conventional consolidated general government deficit deteriorated to R40,3 billion or 9,1 per cent of gross domestic product in fiscal 1993/94, before the financial position improved to a deficit of R14,1 billion or 1,6 per cent of gross domestic product in fiscal 2000/01. Over the same period, the primary balance (revenue less non-interest expenditure) followed the same trend by improving from a deficit of R17,5 billion or 4,0 per cent of gross domestic product to a surplus of R35,0 billion or 3,8 per cent. The widening gap between the conventional deficit and the primary deficit towards the end of the sample period reflects increasing interest payments on the government's accumulated debt. The steady decline in the general government borrowing requirement

as a ratio of GDP since the all-time high of 9,1 per cent in fiscal 1993/94 is consistent with government's stated objective of decreasing its direct involvement in the economy.

Figure 4.6 Consolidated general government balances

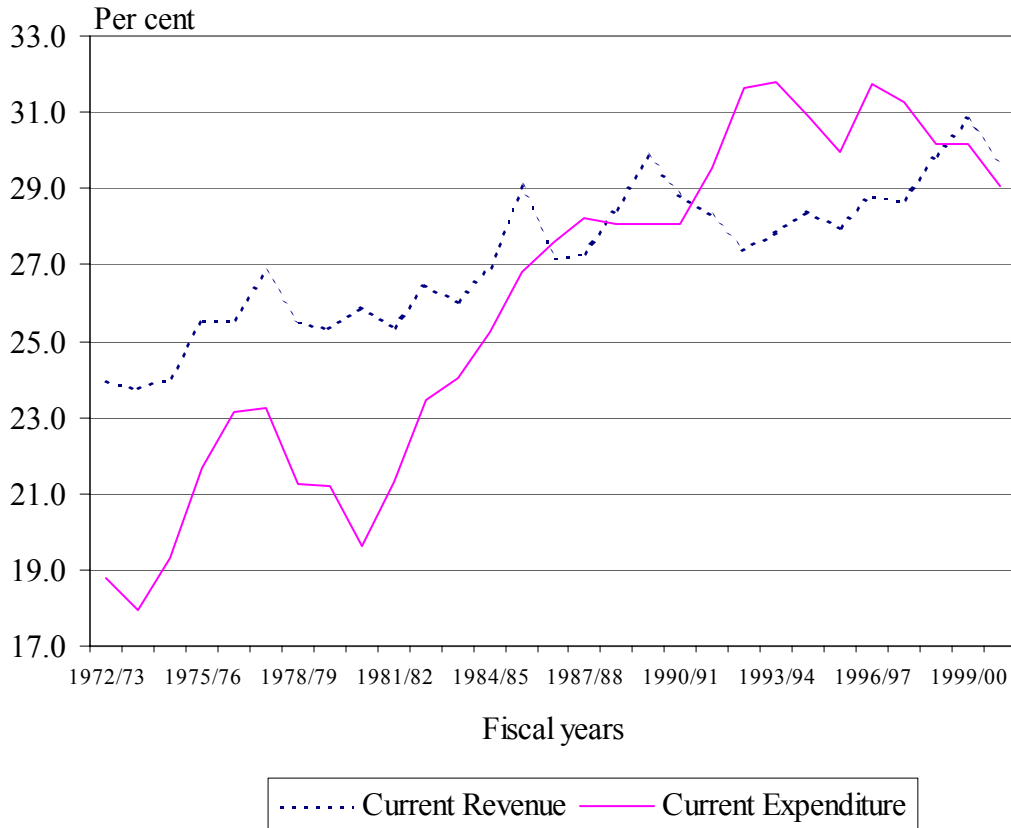


Source: South African Reserve Bank and own calculations

By looking at Figure 4.7, five phases can be identified. The periods 1972/73 to 1985/86, 1988/89 to 1990/91 and 1999/00 to 2000/01 (where current revenue exceeded current expenditure) represent periods of general government saving, while the periods 1986/87 to 1987/88 and 1991/92 to 1998/99 (where current expenditure exceeded current revenue) represent periods of dissaving. The figure also clearly illustrates the stronger growth in current expenditure as a ratio of gross domestic product compared to the same ratio in current revenue. However, it seems that the general government has brought its current expenditure under control since fiscal 1997/98, as is reflected in its ratio to gross

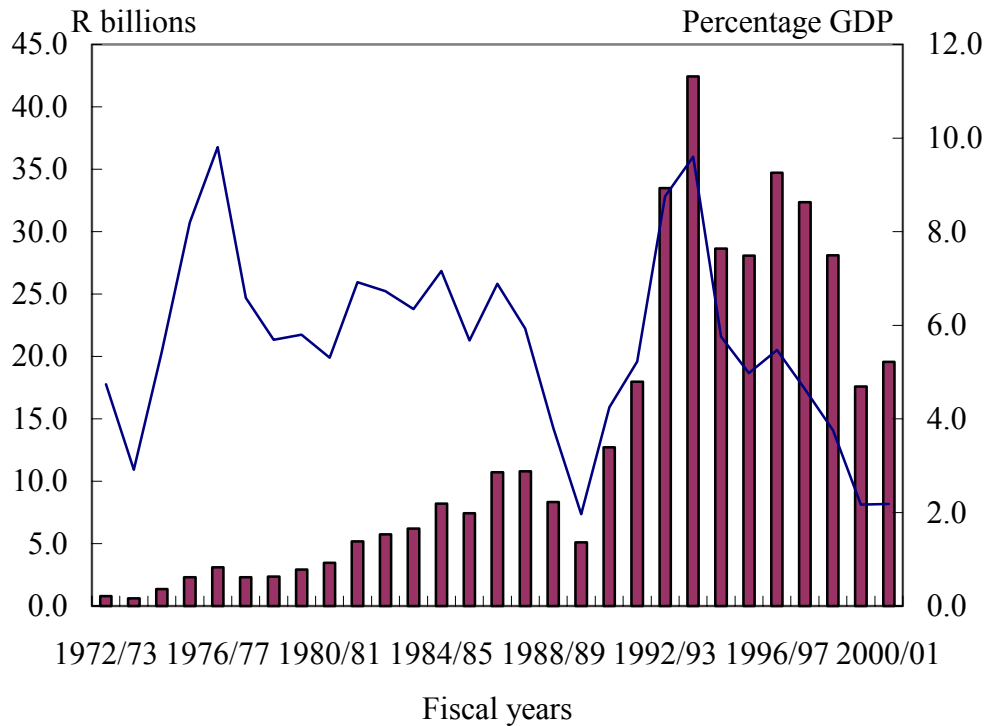
domestic product. Spending containment and solid growth in current revenue were the main factors responsible for the decline in the dissaving ratio of general government (South African Reserve Bank *Annual Economic Report* 1999:44).

Figure 4.7 Consolidated general government current revenue and expenditure as a ratio of GDP



Source: South African Reserve Bank and own calculations

Figure 4.8 indicates that the trend in the non-financial public sector borrowing requirement followed more or less the same pattern as the borrowing requirement of general government, amounting to record levels in fiscal 1993/94, before declining to much lower levels in fiscal 2000/01.

Figure 4.8 Non-financial public sector borrowing requirement

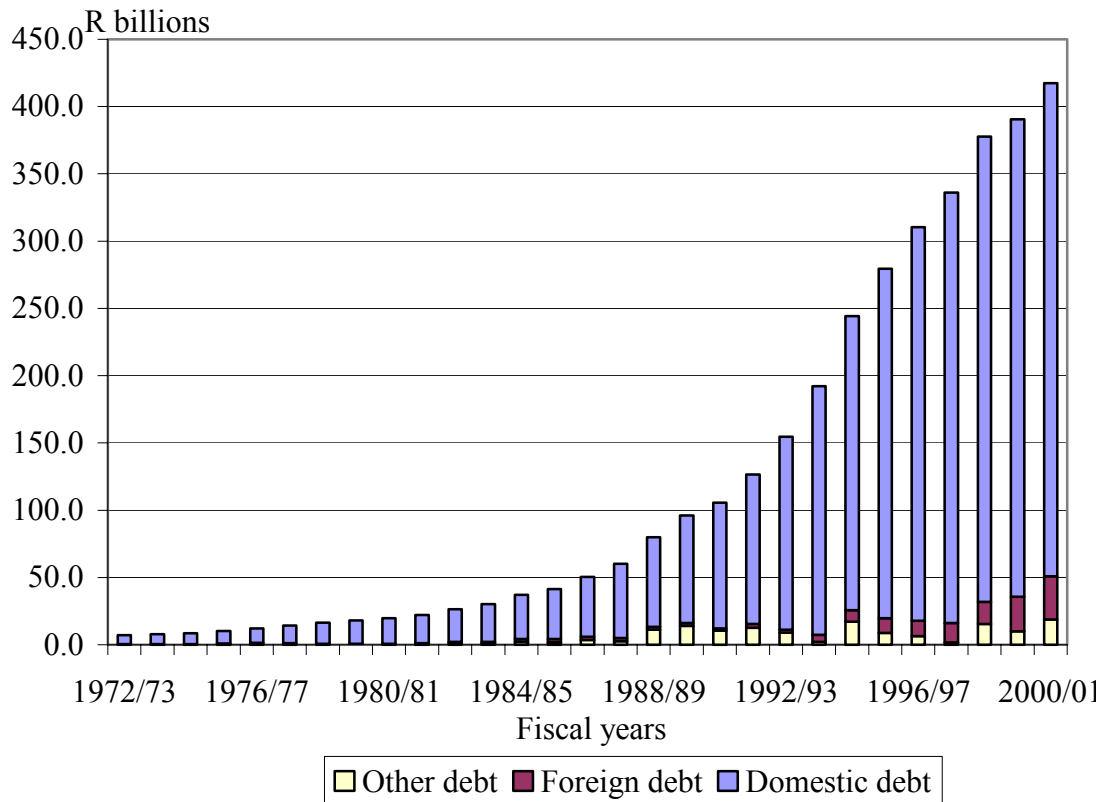
Source: South African Reserve Bank and own calculations

4.4.4 Government debt

Figure 4.9 illustrates the total debt of national government. National government debt increased significantly from R7,2 billion or 43,1 per cent of gross domestic product in fiscal 1972/73 to R377,7 billion or 50,2 per cent of gross domestic product in fiscal 1998/99, before declining to 45,7 per cent of gross domestic product in fiscal 2000/01. Although foreign debt constitutes only a small portion of total debt, it became increasingly important since fiscal 1994/95, after South Africa's reintroduction to the global economy. The irregular contribution of other debt to total debt can be ascribed to losses made on the gold and foreign exchange contingency reserve account. The ratio of national government debt to GDP increased only slightly from the end of fiscal 1994/95, and the increase was almost entirely due to losses incurred through the provision of cover

against exchange-rate risk by the South African Reserve Bank (South African Reserve Bank *Annual Economic Report* 1999:3).

Figure 4.9 Total debt of national government



Source: South African Reserve Bank and own calculations

4.5 INTERNATIONAL COMPARISONS

Table 4.5 compares South Africa's central government finances with six other developing countries, namely Chile, India, Indonesia, Mauritius, Mexico and Romania. The comparison with international practice allows the judgement of how far South Africa may be below (or above) the "international norm". These countries were chosen on the basis of available government finance and output data that are essential for the empirical analysis that will follow in the next chapters. It must be pointed out, however, that

although the sample of developing countries chosen for this study represents at least one country from Asia, Europe and the Western Hemisphere, it might not be an accurate representation of all developing countries.

Excluding Romania, South Africa has the highest average revenue and expenditure to GDP ratios. South Africa's average revenue to GDP ratio (24,3 per cent) and expenditure to GDP ratio (28,8 per cent) are also well above the six-country averages of 21,5 per cent and 23,9 per cent, respectively. India has the lowest average balance to GDP ratio (-5,9 per cent), followed by South Africa (-4,5 per cent) and Mauritius (-4,4 per cent). South Africa's deficit to GDP ratio is nearly twice the size of the six-country average of -2,4 per cent. Chile and Romania, on average, recorded surpluses over the sample period. India has the lowest average revenue to GDP ratio, while Mexico has the lowest average expenditure to GDP ratio. Romania has the maximum average revenue, expenditure and balance to GDP ratios. South Africa's revenue, expenditure and balance to GDP ratios are on average very close to those of Mauritius.

Table 4.5 An international comparison of consolidated central government aggregates, 1972 to 2000

Country	Revenue to GDP ratio			Expenditure to GDP ratio			Balance to GDP ratio		
	Av.	Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.
South Africa	24.3	19.1	29.2	28.8	22.8	34.1	-4.5	-9.1	-0.2
Chile	23.0	13.2	30.0	22.8	17.8	28.9	0.2	-5.6	4.8
India	12.7	9.4	14.5	18.7	12.3	23.0	-5.9	-9.0	-2.9
Indonesia	17.6	12.4	22.5	18.8	14.7	24.4	-1.3	-3.8	2.2
Mauritius	22.7	16.8	25.2	27.1	19.5	36.1	-4.4	-13.9	0.9
Mexico	14.0	8.9	16.7	17.9	11.6	30.6	-3.9	-14.3	4.2
Romania	39.0	27.0	53.6	38.2	27.3	53.4	0.8	-4.7	8.2

Source: IMF, GFS CD-ROM (November 2002) and WEO Database (April 2003); and own calculations

A comparison of South Africa's tax to GDP ratio with the six other developing countries is documented in Table 4.6. The results show that, on average, South Africa's tax to GDP ratio is much higher compared with the average for the other countries. With regard to the tax components, the average ratio of South Africa's taxes on net income and profits to GDP is much higher compared with the average for the other developing countries, while the ratio of taxes on international trade and transactions and the ratio of social security contributions to GDP are much lower than the six-country averages. Taxes on net income and profits are the most important tax revenue component in South Africa and Indonesia, while tax revenue in Chile, Mexico and India is mainly dependent on domestic taxes on goods and services. Social security taxes account for the bulk of Romania's tax revenue, while Mauritius relies mainly on taxes on international trade and transactions. In summary, the results show that South Africa's tax to GDP ratio is much higher compared to the other developing countries referred to, and that large discrepancies occur between the different countries with respect to the main source of tax revenue.

Table 4.7 compares the consolidated central government expenditure of South Africa in more detail with that of the six other developing countries. South Africa's expenditure on goods and services and total current expenditure as a ratio of GDP is much higher than the average for the six other selected developing countries, while South Africa's capital expenditure to GDP ratio is much lower. The most striking difference between South Africa and the six other developing countries is the fact that social security and welfare provision in the other developing countries (except for Indonesia) by far exceed that in South Africa. The average share of unemployment-related expenditure in total current primary expenditure in South Africa is 1,0 per cent, which is significantly below the average of 6,5 per cent for OECD countries as estimated by Van den Noord (2000:25). Capital expenditure is the most important expenditure category in Indonesia, while expenditure on goods and services accounts for the bulk of expenditure in South Africa, Mexico and Mauritius. Subsidies and other current transfers are the most important expenditure categories in Chile, India and Romania.

**Table 4.6 A comparison of consolidated central government tax revenue,
1972 to 2000**

		Taxes on net income and profits	Taxes on property	Taxes on goods and services	Taxes on international trade and transactions	Other taxes	Social security contributions	Taxes on payroll and work-force	Total
Tax revenue components as a ratio of GDP									
South Africa	Low	10.4	0.3	3.5	0.0	0.2	0.2	0.0	16.5
	High	14.7	0.6	9.2	2.5	0.4	0.5	0.1	26.6
	Average	12.8	0.4	7.1	0.5	0.3	0.4	0.0	22.0
Chile	Low	1.9	0.0	3.8	0.0	0.0	1.2	0.0	11.3
	High	5.0	1.4	11.2	2.0	2.0	4.9	0.0	22.5
	Average	3.5	0.2	9.1	0.8	1.1	2.2	0.0	17.9
Indonesia	Low	5.6	0.1	1.7	0.1	0.0	0.0	0.0	10.9
	High	16.3	0.5	6.1	1.6	0.2	0.5	0.0	19.4
	Average	10.6	0.2	3.4	0.7	0.1	0.1	0.0	15.6
India	Low	1.9	0.0	3.4	0.4	0.0	0.0	0.0	8.0
	High	3.6	0.1	5.0	4.1	0.7	0.0	0.0	11.0
	Average	2.4	0.1	4.5	2.1	0.0	0.0	0.0	9.8
Romania	Low	0.0	0.0	0.0	0.0	0.0	2.8	0.0	5.1
	High	12.8	0.0	11.2	1.7	1.1	11.0	5.1	33.0
	Average	3.5	0.0	3.1	0.5	0.2	6.6	2.1	15.1
Mexico	Low	3.0	0.0	3.0	0.5	0.1	1.5	0.0	8.1
	High	5.5	0.0	12.2	1.3	0.3	2.4	0.2	15.4
	Average	4.5	0.0	7.6	0.9	0.2	1.9	0.1	12.7
Mauritius	Low	2.0	0.7	3.0	1.0	0.0	0.0	0.0	16.0
	High	8.9	1.2	8.5	11.3	0.3	1.3	0.1	22.7
	Average	3.6	1.0	4.9	6.8	0.1	0.7	0.1	19.9
Tax revenue components as a ratio of total tax revenue									
South Africa	Low	50.6	1.4	18.6	1.8	0.7	2.3	0.0	
	High	67.6	3.6	39.6	9.5	2.3	1.3	0.6	
	Average	58.5	2.0	31.9	4.6	1.2	1.7	0.1	
Chile	Low	13.1	0.0	33.3	4.6	0.0	7.2	0.0	
	High	25.8	7.1	57.3	16.7	9.8	33.3	0.0	
	Average	19.3	1.3	50.9	10.6	5.9	12.3	0.0	
Indonesia	Low	50.9	0.3	9.1	2.7	0.0	0.0	0.0	
	High	84.1	3.2	37.5	21.7	1.2	6.6	0.0	
	Average	67.0	1.5	22.2	7.9	0.5	0.7	0.0	
India	Low	17.6	0.1	36.4	19.4	0.0	0.0	0.0	
	High	37.3	0.8	52.1	36.4	7.1	0.0	0.0	
	Average	24.5	0.6	45.6	29.0	0.3	0.0	0.0	
Romania	Low	0.0	0.0	0.0	0.0	0.0	25.5	0.0	
	High	44.4	0.0	37.7	7.0	4.4	59.1	44.0	
	Average	18.2	0.0	11.3	1.9	0.8	48.1	19.6	
Mexico	Low	25.3	0.0	35.2	3.6	0.3	10.5	0.0	
	High	43.5	0.4	79.4	15.0	2.5	21.0	1.9	
	Average	36.2	0.0	58.2	7.6	1.4	15.2	0.8	
Mauritius	Low	9.6	3.2	43.6	30.7	0.1	0.0	0.0	
	High	41.1	7.1	14.0	59.5	2.0	7.2	0.7	
	Average	18.3	5.1	24.9	47.6	0.4	3.6	0.2	
Source: IMF, GFS CD-ROM (November 2002) and WEO Database (April 2003); and own calculations									

Table 4.7 A comparison of consolidated central government expenditure, 1972 to 2000

		Goods and services	Interest payments	Subsidies and other current transfers	Current	Current primary	Capital	Social ⁴ security and welfare	Total
Expenditure components as a ratio of GDP									
South Africa	Low	7.3	1.3	6.8	16.3	15.0	1.2	0.6	19.4
	High	16.5	5.8	16.9	30.6	25.5	4.2	1.2	32.6
	Average	11.5	3.5	9.6	24.6	21.2	2.7	1.0	27.3
Chile	Low	5.1	0.0	7.0	15.0	14.6	1.9	3.5	18.0
	High	12.3	2.6	18.1	28.0	27.6	8.0	12.6	30.0
	Average	7.6	1.1	11.0	19.8	18.6	3.2	7.6	22.9
Indonesia	Low	3.5	0.3	2.0	8.0	6.3	4.8	0.0	14.6
	High	7.2	3.9	7.9	15.4	11.5	12.0	1.1	23.3
	Average	4.8	1.6	3.8	10.2	8.6	8.0	0.2	18.2
India	Low	3.3	1.0	3.6	8.1	7.1	1.3		9.5
	High	4.8	4.8	7.4	15.6	11.9	2.4		17.4
	Average	3.9	2.9	6.2	13.0	10.1	1.7		14.7
Romania	Low	4.8	8.4	4.9	15.9	15.3	2.8	4.9	27.3
	High	15.4	24.9	10.6	36.5	36.3	17.9	10.6	53.4
	Average	10.2	14.9	7.6	26.3	25.1	9.1	7.6	38.2
Mexico	Low	3.5	0.8	2.2	7.6	6.8	1.6	2.0	10.7
	High	7.0	18.6	11.4	24.8	12.2	4.9	3.6	30.5
	Average	5.0	4.8	4.9	14.7	9.9	3.0	2.9	17.6
Mauritius	Low	9.4	2.7	3.4	14.6	12.8	2.6	2.7	18.1
	High	12.1	6.4	9.0	26.6	23.0	6.8	7.9	31.7
	Average	11.2	4.6	6.9	21.3	18.1	4.3	4.6	25.6
Expenditure components as a ratio of total expenditure									
South Africa	Low	24.3	6.0	23.2	83.9	74.3	4.0	1.8	
	High	55.2	19.2	53.6	96.0	79.9	16.1	4.2	
	Average	42.3	12.1	35.2	89.6	77.5	10.4	0.6	
Chile	Low	27.7	1.4	30.6	77.5	70.0	6.6	17.5	
	High	43.7	10.3	60.2	93.4	91.9	30.9	42.7	
	Average	32.8	5.0	48.2	85.9	81.0	14.1	33.0	
Indonesia	Low	17.7	1.5	12.5	46.9	35.1	23.6	0.0	
	High	40.4	19.2	39.5	76.4	67.2	51.7	7.2	
	Average	27.0	8.5	20.8	56.2	47.7	43.6	1.3	
India	Low	22.8	10.2	37.8	85.2	61.4	9.1		
	High	37.0	28.8	44.9	92.1	76.3	14.8		
	Average	27.0	19.2	41.9	88.1	68.9	12.0		
Romania	Low	11.3	0.0	20.3	55.1	53.9	8.0	10.4	
	High	37.8	13.5	58.9	92.0	91.0	44.4	31.5	
	Average	28.8	4.7	42.6	74.9	71.4	25.1	21.0	
Mexico	Low	16.5	7.5	14.7	69.3	28.1	9.1	7.0	
	High	43.3	60.8	52.2	91.3	76.3	32.0	27.4	
	Average	30.2	23.4	29.1	82.7	59.3	18.2	17.9	
Mauritius	Low	39.6	4.0	18.7	77.1	62.9	9.4	14.9	
	High	51.8	21.1	34.1	90.6	78.9	22.8	29.9	
	Average	44.2	12.5	26.6	83.3	70.8	16.7	18.0	

Source: IMF, GFS CD-ROM (November 2002) and WEO Database (April 2003); and own calculations

⁴ Refers to the functional classification of government expenditure.

4.6 SYNOPSIS

This chapter highlights the main aspects regarding the South African business cycle, the trends in government finances and the fiscal policies pursued by the South African government, since these aspects impact directly on the size of automatic fiscal stabilisers.

Fiscal policy in South Africa during the 1970s and early 1980s centered around demand management, including frequent variations in the size of the national budget deficit in the interest of macroeconomic stability in the relationship between growth, inflation and the balance of payments. Since the mid 1980s the focus of South African budgetary policy has increasingly shifted from the earlier Keynesian emphasis on short-term stabilisation to the longer-term implications of the budget. After several years of consolidation, fiscal policy in South Africa is now decidedly growth-oriented. The 2000/2001 Budget entailed a growth-oriented fiscal policy stance of improved spending, significant increases in infrastructure allocations and ongoing tax reform, within the sound framework of fiscal management established over the last five years. The 2000/2001 Budget had a renewed focus on microeconomic and structural reforms.

A graphic representation of the government deficit and debt over the sample period shows that the South African government did not have much success in stabilising the South African economy. Furthermore, an analysis of fiscal policy in this country shows little evidence of an explicit role defined for automatic fiscal stabilisers. To date no estimates have been published by organisations or other authors regarding its impact on the budget and the economy at large.

This chapter also illustrates the course, strength and duration of the South African business cycle, with some explanation of the economic performance of the country during the period 1970 to 2000. The duration and momentum of some upswing and downswing phases are evident from fluctuations in real GDP growth and deviations from trend as measured by the output gap. The main macroeconomic events and developments that impacted on the South African business cycle include, amongst others, structural

economic reforms, the domestic political transition, weather conditions, international economic developments and labour market turmoil. The volatility in economic activity and the fact that some changes in the business cycle resulted from exogenous factors and exceptional circumstances, leave ample room for automatic fiscal stabilisers to smooth the cycle. In terms of government size and the revenue and expenditure structure, this chapter illustrates that the size of the South African government (in terms of revenue and expenditure to GDP ratios) exceeds that of some other developing countries, while tax revenue (and more specifically taxes on net income and profits) is the main source of revenue. However, social security and welfare provision in South Africa is much smaller compared to other developing countries. It can therefore be expected that automatic fiscal stabilisers in South Africa will be much stronger on the revenue side of the budget.

Although the South African government was successful in its objective of decreasing its direct involvement in the economy, as reflected in the downward trend in the budget deficit since fiscal 1993/94, these efforts could have had a destabilising impact on the economy as the consolidation efforts coincided with a period marked by negative and small positive output gaps.

CHAPTER 5

GENERAL GOVERNMENT TAX REVENUE AS AN AUTOMATIC FISCAL STABILISER IN SOUTH AFRICA

5.1 INTRODUCTION

Chapter 3 highlighted the generic business cycle properties of tax revenue and its potential as an automatic fiscal stabiliser. This chapter investigates the relevance of tax revenue as an automatic fiscal stabiliser in the South African economy by an empirical analysis of the role and impact thereof since the 1970s. In the next section, the sensitivity of tax categories with respect to output growth is calculated, the cyclical and structural components of tax revenue are estimated and the results are compared with other developing countries.

5.2 EMPIRICAL ANALYSIS OF THE ROLE OF TAX REVENUE AS AN AUTOMATIC FISCAL STABILISER IN SOUTH AFRICA

5.2.1 The cyclical and structural components

In practice, there are several methods for calculating the cyclical budget balance. One of the most widely used approaches in estimating the cyclically adjusted budget balance is the OECD's method (Van den Noord (2000)). The OECD has developed a technique that is internationally comparable, theoretically sound and relatively easy to employ and interpret. The results of the Van den Noord (2000) study are also widely quoted and therefore make it easy to compare results. The accuracy of the results obtained from this method, like other methods that are used for cyclical adjustment, depends on the underlying assumptions. In this case, it particularly applies to the estimation of the output gap and the budget elasticities.

Following the methodology of Van den Noord (2000), the cyclical components of tax revenue were calculated by subtracting the estimated structural components from their actual levels. The structural components are calculated from actual tax revenues, adjusted proportionally according to the ratio of trend output to actual output and the assumed built-in elasticities. Thus:

$$\frac{T_i^*}{T_i} = \left(\frac{Y^*}{Y} \right)^{\alpha_i} \quad (2)$$

where:

T_i^* = structural tax revenue for the i^{th} category of tax

T_i = actual tax revenue for the i^{th} category of tax

Y = level of actual output

Y^* = level of potential output

α_i = elasticity of the i^{th} tax category with respect to output growth ($\alpha_i > 0$)

Taxes are assumed to be increasing in output with a constant elasticity. The output gap was calculated as the percentage deviation of observed real GDP from trend real GDP and trend output was estimated by a Hodrick-Prescott (HP) filter ($\lambda = 100$) (see Chapter 4). To allow for shifts in the composition of tax revenue and to capture the impact on the budget of changes in the composition of output, a distinction is made between direct taxes⁵ and indirect taxes and the elasticity of each tax category with respect to output growth ($\eta_{T_i,Y}$) is calculated as the product of the elasticities of the tax categories with respect to their tax bases (η_{T_i,B_i}) and the elasticities of these tax bases with respect to output ($\eta_{B_i,Y}$). Thus:

$$\eta_{T_i,Y} = \eta_{T_i,B_i} * \eta_{B_i,Y} \quad (3)$$

The current income of households was selected as the tax base for direct taxes, while private consumption expenditure was selected as the tax base for indirect taxes. Annual data were firstly used in the regressions to estimate the average elasticity of the tax revenue components over the period 1970 to 2000⁶. The results, together with

⁵ Consisting of taxes on net income and profits, donations tax, estate duty and taxes on payroll and workforce.

⁶ The measurement of the responsiveness of budget components with respect to cyclical fluctuations in the economy is largely an unsettled issue as widely different methods are being employed. These methods include, for example, regression analysis, macroeconomic models with standard-shock simulations, structural VAR models, marginal and average tax rates or *a priori* assumptions. Since the elasticity estimates entail a large degree of bias, it is useful to perform a sensitivity analysis to compare the effect of different assumptions on the cyclically adjusted budget balance. Due to data constraints, limited information on all discretionary changes in the tax structure and to avoid extensive modelling,

correlation coefficients, are captured in Table 5.1⁷. The correlation coefficients between the cyclical components of tax revenue and output, as well as the tax elasticity coefficients, have the correct sign, indicating that tax revenue is procyclical. Tax elasticity coefficients, at a more disaggregated level, are reported in Table 5.2. The elasticity of the most important tax category (taxes on net income and profits) is larger than one, meaning that it increases more than proportionally with GDP. This reflects the built-in elasticity of the South African tax structure that could result in an increasing tax effort if no discretionary tax measure is used to offset this effect. Taxes on payroll and workforce are the most sensitive to changes in GDP, while property taxes demonstrate the weakest procyclical behaviour. Two of the smaller tax revenue categories (taxes on international trade and “other taxes”), however, move countercyclically, thereby offsetting the total stabilising effect of general government tax revenue.

Table 5.1 Correlation coefficients and elasticities of tax revenue components

Correlation coefficients between the cyclical components of taxes and output⁸	
Direct taxes	Indirect taxes
0.3	0.19
Elasticity of taxes with respect to output growth⁹	
Direct taxes	Indirect taxes
0.42**	0.19*

** (*) denotes significance at the 5 (10) per cent level

this study followed a methodology similar to that of Kiander and Virén (2000) and Lane (2002) to estimate the responsiveness of budget components with respect to output growth. The effects of alternative elasticity assumptions on the cyclical and structural budget components are also compared.

⁷ The values reported should be interpreted as buoyancy coefficients rather than elasticities, since the analysis did not control for the impact of all discretionary changes in the tax structure.

⁸ Estimates are based on Hodrick-Prescott filtered data.

⁹ OLS estimation of $d(\log(B_{it})) = \alpha_i + \beta_{Bi} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where B_i represents the respective tax component and Y represents GDP. The elasticity of direct taxes and indirect taxes with respect to output growth was calculated as the product of the elasticities of the tax categories with respect to their tax bases and the elasticities of these tax bases with respect to output. The current income of households was selected as the tax base for direct taxes, while private consumption expenditure was selected as the tax base for indirect taxes.

Table 5.2 Elasticity coefficients of individual tax categories with respect to output growth¹⁰

Tax category	Elasticity
Taxes on net income and profits	1.11**
Taxes on property	0.34
Taxes on goods and services	0.77*
Taxes on international trade and transactions	-0.27
Other taxes	-0.48
Social security contributions	1.16**
Taxes on payroll and workforce	1.96

** (*) denotes significance at the 5 (10) per cent level

The standard deviation of the cyclical components of tax revenue may provide additional insight as a rough indicator of how sensitive they are to the business cycle. Indirect tax revenue shows less marked deviations than direct tax revenue. Table 5.3 shows that the cyclical component of direct and indirect taxes varies on average by approximately 0,06 and 0,03 percentage points of GDP respectively in either direction around their means. The highest positive values for the cyclical components of direct and indirect taxes were recorded in 1989, while the lowest negative values were recorded in 1992 and 1993, respectively. The cyclical component of direct taxes is more than two times greater than the cyclical component of indirect taxes.

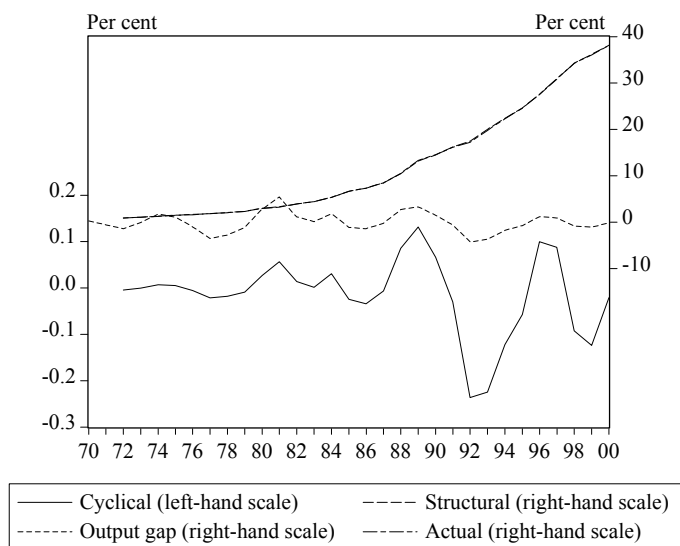
Table 5.3 Size and volatility of the cyclical components of tax revenues

Tax category	Volatility Standard deviation (% points of GDP)	Lowest negative component		Highest positive component	
		Value (as % of GDP)	Year	Value (as % of GDP)	Year
Direct taxes	0.06	-0.16	1992	0.09	1989
Indirect taxes	0.03	-0.07	1993	0.04	1989

¹⁰ OLS estimation of $d(\log(B_{it})) = \alpha_i + \beta_{Bi} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where B_i represents the respective tax component and Y represents GDP.

The actual, structural and cyclical components of total tax revenue (as a ratio of trend GDP) are shown in Figure 5.1. A high correlation was found between the output gap and the cyclical component of general government tax revenue. Tax revenue responds more or less in line with changes in the output gap and it seems as if the automatic fiscal stabilisers associated with the tax system in South Africa were allowed to operate in both the up- and downward phases of the economic cycle. The results also illustrate a more prominent role for automatic fiscal stabilisers during the latter half of the sample period.

Figure 5.1 A comparison of actual, structural and cyclical tax revenue as a ratio of trend GDP¹¹



5.2.2 Sensitivity analysis

The sensitivity of automatic stabiliser estimates to different assumptions determines their usefulness in policy-making (Tam and Kirkham 2001: 11). Alternative assumptions change the level of estimated stabilisers, making it difficult to accurately assess what the state of government finances is at a given point in time. A sensitivity analysis with respect to the automatic fiscal stabiliser estimates was carried out by means of alternative assumptions about the elasticity of each tax revenue component,

¹¹ The small size of the cyclical component makes it difficult to distinguish between the actual and structural components to the extent that there appears to be only three lines.

adjusted 50% either way from the current estimate. The estimation of the size of automatic fiscal stabilisers associated with general government tax revenue in South Africa is relatively robust with respect to alternative assumptions about tax elasticities. The maximum or minimum values for the alternative assumptions resulted in a maximum difference of 0,08 per cent and 0,04 per cent of trend GDP in the case of direct and indirect taxes, respectively. A unitary elasticity assumption for direct (indirect) taxes resulted in a maximum difference of 0,22 (0,31) per cent of trend GDP.

5.2.3 The responsiveness of total tax revenue to the output gap

Taylor (2000: 33) provides estimates of the responses of the total budget balance, and its structural and cyclical components to the output gap. Using the same methodology for South Africa, Table 5.4 shows estimates from bivariate regressions using the output gap (defined as the percentage deviation of real GDP from trend GDP) as the independent variable and total structural, cyclical and actual tax revenue (each expressed as a percentage of trend GDP), one at a time, as the dependent variable. This simple method was chosen in order to avoid extensive modeling that are required, for example, by large macroeconomic models that involve standard shock simulations. Therefore, there might be some trade-off between the simplicity of this approach and the accuracy of its results.

The impact of the output gap on discretionary fiscal policy (measured by structural general government tax revenue) and automatic fiscal stabilisers (measured by cyclical general government tax revenue) varies significantly according to the chosen sample period. The role of automatic stabilisers was much smaller than that of discretionary fiscal policy over the sample period. Regressions over two sub-samples (1970-1985 and 1986-2000) indicate that automatic fiscal stabilisers were much stronger in the latter half of the sample period, particularly since the 1990s. Estimated effects of variations in the output gap on total tax revenue and structural tax revenue are not significant in any of the reported time periods. The regression results for the period 1970-1979 support the findings of Heyns (1999) that the government relied strongly on discretionary policy action during the 1970s in an attempt to smooth out automatic fluctuations in government deficits.

Table 5.4 Estimated response of total tax revenue to the output gap

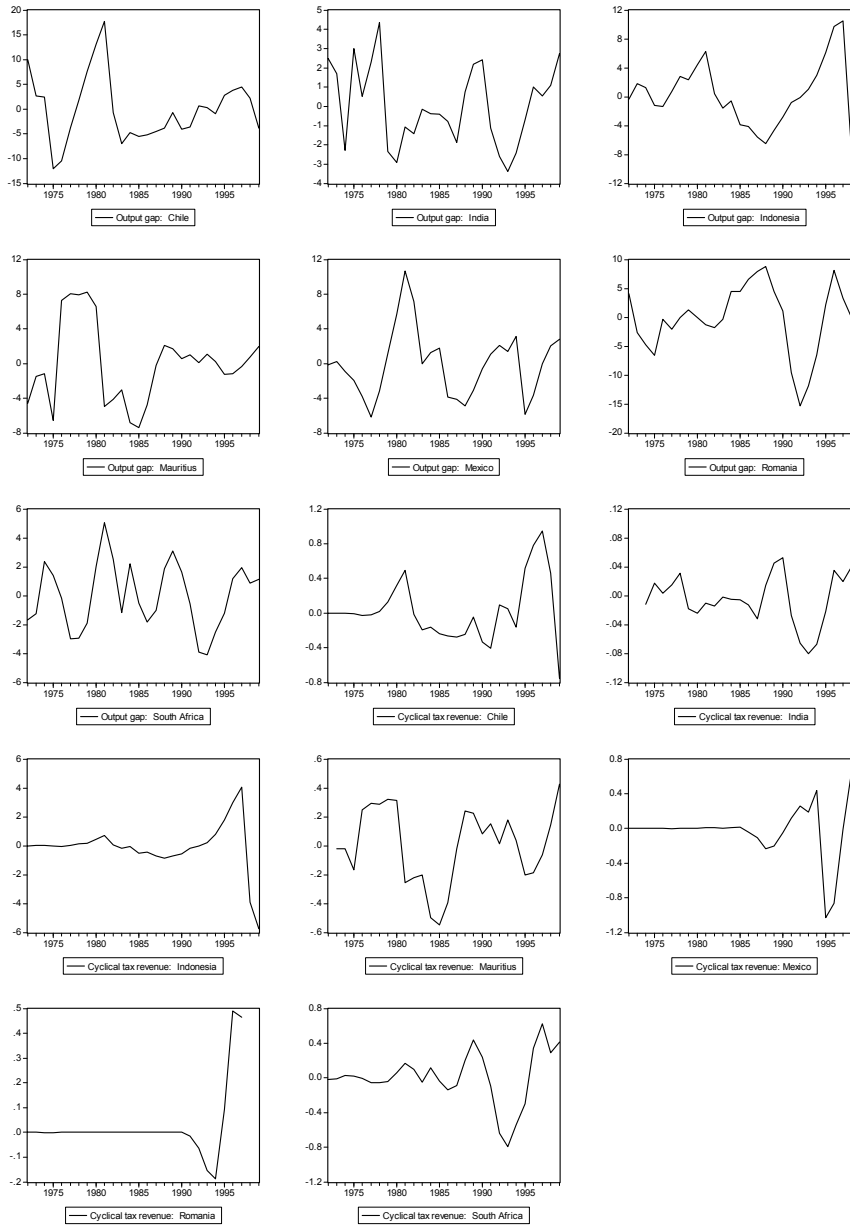
Sample period	Structural component	Cyclical component	Actual
1970-2000	-0.98 (1.49)	0.03 (0.00)	-0.95 (1.48)
1970-1985	0.26 (0.39)	0.01 (0.00)	0.27 (0.39)
1986-2000	-2.45 (3.01)	0.05 (0.00)	-2.36 (-0.78)
1970-1979	-0.49 (0.27)	0.01 (0.00)	-0.44 (-1.82)
1980-1989	1.44 (0.84)	0.02 (0.00)	1.46 (0.84)
1990-2000	-4.98 (4.03)	0.06 (0.00)	-4.92 (4.03)
Note: Standard errors in parentheses			

5.2.4 International comparisons

This section compares South Africa's tax elasticity, tax to GDP ratio, output gap and cyclical tax revenue with six other developing countries, namely Chile, India, Indonesia, Mauritius, Mexico and Romania¹². Figure 5.2 shows that the size of South Africa's output gap is broadly similar to that of India, but smaller compared to the other countries. South Africa, India and Romania recorded their largest negative values in their output gaps in the early 1990s. Except for Indonesia, Mexico and Romania, the trend in cyclical tax revenue for each country is broadly similar to their respective output gaps. With the exception of Indonesia, there are no major differences in the size of cyclical tax revenue between the various countries. Cyclical tax revenue in South Africa, India, Mexico and Romania reached its largest negative values in the early 1990s.

¹² Data on tax revenue refer to the consolidated central government of each country.

Figure 5.2 A comparison of output gaps and cyclical tax revenue¹³



¹³ As a ratio of trend GDP.

The tax elasticity and tax to GDP ratios of each country are captured in Table 5.5. South Africa has the highest average tax to GDP ratio, followed by Chile and Indonesia. The South African minimum tax to GDP ratio is also the highest among the reported countries. Mauritius has the smallest average tax to GDP ratio and the lowest minimum. The highest maximum value of 33,0 per cent was recorded by Romania in 1992. Mauritius has the largest tax elasticity, followed by Romania and South Africa.

Table 5.5 A comparison of tax elasticities and tax to GDP ratios, 1972 to 2000

Country	Elasticity ¹⁴	Tax to GDP ratio		
		Average	Maximum	Minimum
Chile	1.1**	17.9	22.5	11.3
India	0.28	9.8	11.0	8.0
Indonesia	1.47**	15.6	19.4	10.9
Mauritius	0.63	6.7	10.3	2.0
Mexico	0.98**	12.7	15.4	8.1
Romania	0.88**	14.9	33.0	5.1
South Africa	1.07**	21.9	26.6	16.5

Source: IMF, GFS CD-ROM (November 2002) and WEO Database (April 2003); and own calculations

** (*) denotes significance at the 5 (10) per cent level

This section therefore illustrates that although the size of South Africa's output gap is smaller compared with most of the other developing countries (lowering the relative strength of South African automatic fiscal stabilisers), its tax to GDP ratio and its tax revenue elasticity with respect to output growth is larger compared with the six-country averages (increasing the relative strength of South African automatic fiscal stabilisers) to the extent that the country's cyclical tax revenue is in line with most of the other developing countries.

¹⁴ OLS estimation of $d(\log(B_{it})) = \alpha_i + \beta_{Bi} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where B_i represents the respective country's tax revenue and Y_i the respective GDP.

5.2.5 Cyclical and structural components estimated using quarterly data, 1992 to 2000

In order to cross-check the robustness of the estimates, the cyclical components of tax revenue were also calculated by means of quarterly data. The elasticity and correlation coefficients are captured in Table 5.6, while Table 5.7 documents elasticity estimates at a more disaggregated level. The first interesting observation in terms of the quarterly estimates compared with the annual estimates is the fact that the correlation coefficient between the cyclical component of indirect tax revenue and output in the quarterly model is negative. Similar to the annual results, the elasticity of direct taxes with respect to output growth in the quarterly model also proved to be larger than that of indirect taxes. The elasticities of individual tax categories calculated from quarterly data show that taxes on net income and profits, social security contributions and taxes on payroll and workforce proved to be the most sensitive to changes in output. The major difference observed between the results of quarterly and annual estimates is the fact that the elasticity of taxes on property is much larger in the case of quarterly data, while the elasticity of “other taxes” is positive in the quarterly estimate compared to the negative elasticity observed in the annual results.

Table 5.6 Correlation coefficients and elasticities of tax revenue components (quarterly data)

Correlation coefficients between the cyclical components of taxes and output¹⁵	
Direct taxes	Indirect taxes
0.01	-0.01
Elasticity of budget components with respect to output growth¹⁶	
Direct taxes	Indirect taxes
0.14	0.00

¹⁵ Estimates are based on Hodrick-Prescott filtered data.

¹⁶ OLS estimation of $d(\log(B_{it})) = \alpha_i + \beta_{Bi} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where B_i represents the respective tax component and Y represents GDP. The elasticity of direct taxes and indirect taxes with respect to output growth was calculated as the product of the elasticities of the tax categories with respect to their tax bases and the elasticities of these tax bases with respect to output. The current income of households was selected as the tax base for direct taxes, while private consumption expenditure was selected as the tax base for indirect taxes.

Table 5.7 Elasticity coefficients of individual tax categories with respect to output growth (quarterly data)¹⁷

Tax category	Elasticity
Taxes on net income and profits	3.29*
Taxes on property	4.22
Taxes on goods and services	1.68*
Taxes on international trade and transactions	-0.92
Other taxes	1.06
Social security contributions	8.87*
Taxes on payroll and workforce	11.68

* denotes significance at the 5 per cent level

The size and volatility of the cyclical component of tax revenue calculated by quarterly data are reported in Table 5.8, while Figure 5.3 portrays the cyclical, structural and actual tax revenue components as a ratio of trend GDP. Since the elasticity of indirect taxes with respect to output growth obtained from the quarterly estimates are zero, the total cyclical component of tax revenues can be ascribed to direct taxes. The cyclical component of direct taxes varies on average around 0,01 percentage points of GDP in either direction around its mean. This is much smaller compared to the results obtained from the annual data. The lowest negative value for the cyclical component of direct taxes was recorded in the first quarter of 1993, while the highest positive value was recorded in the fourth quarter of 1996.

¹⁷ OLS estimation of $d(\log(B_{it})) = \alpha_i + \beta_{Bi} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where B_i represents the respective tax component and Y represents GDP. Y was lagged by two quarters in the case of taxes on net income and profits, taxes on property, and other taxes.

Figure 5.3 A comparison of actual, structural and cyclical tax revenue as a ratio of trend GDP (quarterly data)¹⁸

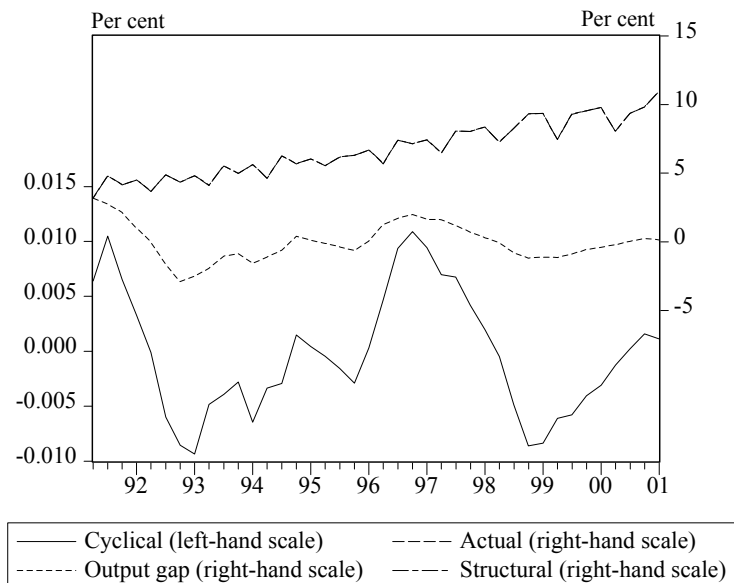


Table 5.8 Size and volatility of the cyclical component of direct tax revenue (quarterly data)

	Volatility Standard deviation (% points of GDP)	Lowest negative component		Highest positive component	
		Value (as % of GDP)	Year	Value (as % of GDP)	Year
Direct taxes	0.01	-0.01	1993 Q1	0.01	1996: Q4

Table 5.9 shows that the quarterly data support the fact that the role of automatic fiscal stabilisers was much smaller than that of discretionary fiscal policy during the 1990s. The quarterly data also prove to be useful, as they provide additional insight into the response of tax revenue to the output gap in the 1990s that could not be captured in the annual estimates. The coefficient of the structural component of tax revenue has switched from a perverse countercyclical negative coefficient in the first half of the 1990s to a rather sizeable positive coefficient in the latter half of the 1990s.

¹⁸ The small size of the cyclical component makes it difficult to distinguish between the actual and structural components to the extent that there appears to be only three lines.

Whereas the annual data could only show that the role of automatic fiscal stabilisers was stronger in the latter half of the annual sample period (1986-2000) and particularly since the 1990s, the quarterly data provide additional insight by showing that the impact of automatic fiscal stabilisers was stronger towards the latter half of the 1990s.

Table 5.9 Estimated response of tax revenue to the output gap (quarterly data)

Sample period	Structural component	Cyclical component	Actual
1991:2-2001:1	-0.21 (0.83)	0.00 (0.00)	-0.21 (0.83)
1991:2-1996:1	-0.71 (0.41)	0.00 (0.00)	-0.70 (0.72)
1996:2-2001:1	0.94 (1.84)	0.01 (0.00)	0.94 (1.84)
Note: Standard errors in parentheses			

5.3 SYNOPSIS

Correlation coefficients between the cyclical components of direct and indirect tax revenue and output, as well as elasticity coefficients, show that tax revenue in South Africa moves procyclically. Direct taxes are more volatile and more sensitive to changes in GDP compared to indirect taxes. Moreover, the cyclical component of direct taxes is more than double that of the cyclical component of indirect taxes.

Cyclical changes in South African general government tax revenue are relatively small and provide no significant evidence of automatic stabilisation over the period 1970 to 2000. The results show a small positive response of the automatic fiscal stabilisers to the output gap. Regressions over sub-samples indicated the prominent role played by discretionary policy with deliberate attempts to smooth out automatic fluctuations during certain periods.

The potential of tax revenue as an effective automatic fiscal stabiliser in South Africa should not be overlooked. Results show a high correlation between the output gap and automatic stabiliser estimates. Automatic fiscal stabilisers were employed symmetrically over the cycle and results showed that automatic fiscal stabilisers

became increasingly important towards the end of the sample period. The estimated automatic fiscal stabilisers also proved to be relatively robust with respect to alternative assumptions of tax elasticities and no major differences were observed between the results obtained from annual and quarterly data.

A comparison with six other developing countries, namely Chile, India, Indonesia, Mauritius, Mexico and Romania, shows that the size of South Africa's cyclical tax revenue is more or less in line with five of the six countries and the trend in cyclical tax revenue for most of the countries (including South Africa) is broadly in line with their respective output gaps.

CHAPTER 6

THE UNEMPLOYMENT INSURANCE FUND AS AN AUTOMATIC FISCAL STABILISER IN SOUTH AFRICA

6.1 INTRODUCTION

Theoretically, unemployment insurance (UI) contributions and benefits act in tandem to serve as counterbalances to the direction of the economy. This chapter investigates whether the South African Unemployment Insurance Fund (UIF), through its payroll taxes and benefits scheme, contributed towards stabilising the South African business cycle during the period 1970 to 2000. The main features of the South African Unemployment Insurance Fund are firstly documented.

6.2 THE SOUTH AFRICAN UNEMPLOYMENT INSURANCE FUND

Information on the historical background of the South African Unemployment Insurance Fund can be found from the Unemployment Insurance Fund's website. A Cabinet Committee appointed by Government in 1932 recommended the introduction of legislation (the Unemployment Benefit Act) to protect victims of unemployment following the Great Depression in the 1930s. The Act came into operation in 1937 and in 1945 benefit payments was extended to women who ceased work and lost their earnings due to pregnancy. The Act provided for the establishment of separate funds for individual industries. By the end of 1946, twelve funds were in place with 225 000 contributors and a total investment of about R6 million. The scope of coverage was extended over a number of years. In 1952 benefits were extended to contributors who were unemployed due to illness and in 1957 payment was extended to cater for dependents of deceased contributors. The Unemployment Insurance Act of 1946 was repealed and the South African UIF was established in terms of Section 6 of the Unemployment Insurance Act, Act 30 of 1966 that came into operation in 1967.

Initially the UIF benefited only contributors who were registered as unemployed. In addition such contributors had to be capable and available for work and actively seeking employment. From 1 January 1988 payments in terms of the Act was extended to cover women who legally adopted children under the age of two years. The new Unemployment Insurance Contributions Act, 2001 and Unemployment Insurance Act, 2002 came into effect on 1 April 2002. The new legislation gives beneficiaries enhanced benefits, improves contribution collection and optimises the efficiency of the Fund. The new law is having the desired effect of eradicating some of the systemic problems that caused the Fund to experience financial difficulties in the past. Shortcomings of the previous legislation included the following:

- Exclusion of high-income earners with a low probability of unemployment.
- Coverage of low-income contributors, which results in a low-income base while the risk of unemployment is high.
- Litigation procedures imposing scant fines on employers who fail to make their unemployment insurance contributions, while the process of taking a defaulting employer to Court entails high cost.
- The use of contributors' record cards as the only means of determining benefits payable to contributors, exposed the Fund to potential abuse by both employers and workers.
- The Act discriminated against women and certain other categories of contributors and potential beneficiaries.

The new Act has created a larger pool of contributors (widened the contributor base) from which the UIF is able to provide significantly improved benefits to all beneficiaries. Contributors at the lower end of the earnings threshold are compensated at income levels that are more equitable. The creation of an electronic contributor database eliminated the potential for fraudulent claims. The transfer of revenue collection to the South African Revenue Service (SARS) enabled the UIF to benefit from the current "tough" compliance regime of SARS. All employers that are currently registered with SARS must pay their

contributions to SARS, while those employers that are not liable to register for tax purposes must continue to pay their contributions to the UIF.

The employer and employee each contribute one per cent of the latter's total earnings (commission excluded) on a monthly basis. The government is the underwriter of the Fund and is expected to provide assistance to the Fund during times of high unemployment. Benefits are paid for a maximum of 238 days or for the number of day credits that the person has accrued during a 4-year period preceding the date of application. The credits are earned as follows: for every 6 days that a worker contributes, he/she receives 1 day's credit. To qualify for the full 238 days credits the worker must work at least 4 years. The rate at which benefits are paid range from 38% for the highly paid workers to 58% for the lowest paid workers. Unemployment benefits are calculated from the date of unemployment, but are paid from the date of application. Application for benefits must be made within 6 months of unemployment. Benefits are paid only if unemployment is for more than 14 days and if the employer terminated the services of the contributor. If the worker resigns, no benefits are payable, unless the resignation can be deemed to be constructive dismissal. If the company becomes insolvent, benefits are payable. The contributor must be registered as a job seeker in terms of the Skills Development Act, 1998, to qualify for unemployment benefits. The contributor must also be capable of and available for work. Furthermore, the contributor must report at times and places determined by the claims officer for the purpose of signing the unemployment register. From 1 April 2003 domestic workers were also able to benefit from the Unemployment Insurance Fund.

The operational policy of the Unemployment Insurance Fund is determined mainly by the Director-General of Labour and the Unemployment Insurance Commissioner, in consultation with the Unemployment Insurance Board. The vision of the South African UIF is to contribute to the alleviation of poverty by providing effective short-term unemployment insurance to all workers who qualify for it and assisting them in their re-employment. The UIF endeavours to establish effective measures to insure contributors against loss of income resulting from unemployment, illness, pregnancy or the adoption

of children, and to provide for lump-sum payment to the dependants of deceased contributors.

Economic stabilisation is not an explicit objective of the South African UIF. However, international evidence shows that unemployment insurance benefits usually serve as the principal source of automatic stabilisation through its impact on public expenditure (OECD 1993:38 and European Commission 2001:159). The next section evaluates the importance and potential of the South African UIF as an automatic fiscal stabiliser.

6.3 EMPIRICAL INVESTIGATION INTO THE CYCLICAL BEHAVIOUR OF THE SOUTH AFRICAN UNEMPLOYMENT INSURANCE FUND

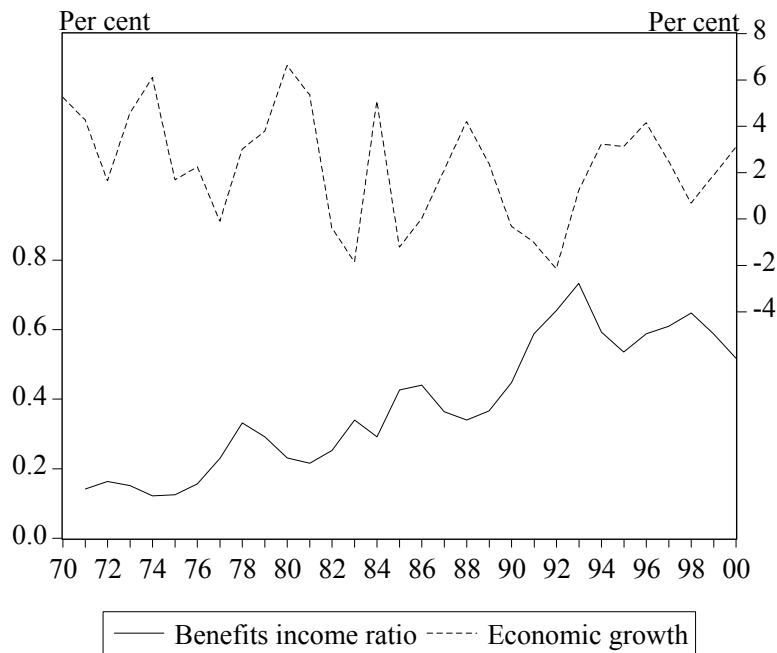
Following the methodology of Dungan and Murphy (1995), aggregate data on the South African UI system were firstly used to determine its effectiveness to act as an automatic fiscal stabiliser. By using UI-account data, Dungan and Murphy (1995:7) examined the role of UI benefits in determining Canadians' personal income, given the level of UI premiums collected, in order to determine whether these trends helped to offset recessionary and inflationary trends.

The authors state that if the UI system is working effectively as an automatic fiscal stabiliser, one would expect UI benefits to constitute a greater proportion of total personal income during downturns in the economy and that this proportion would decline as the economy improves. Conversely, the ratio of UI premiums collected, as a ratio of GDP, is expected to fall in downturns and to increase as the economy improves.

Figure 6.1 shows how well the ratio of UI benefits to household disposable income in South Africa responded to changes in the economy. In 1980, when the highest economic growth rate was recorded, UI benefits represented 0,2 per cent of household disposable income. By 1992 this ratio increased to 0,7 per cent, when the lowest economic growth rate was recorded. Over the sample period, the average ratio of UI benefits to disposable income was 0,4 per cent. The countercyclical cushioning impact of UI benefits in South

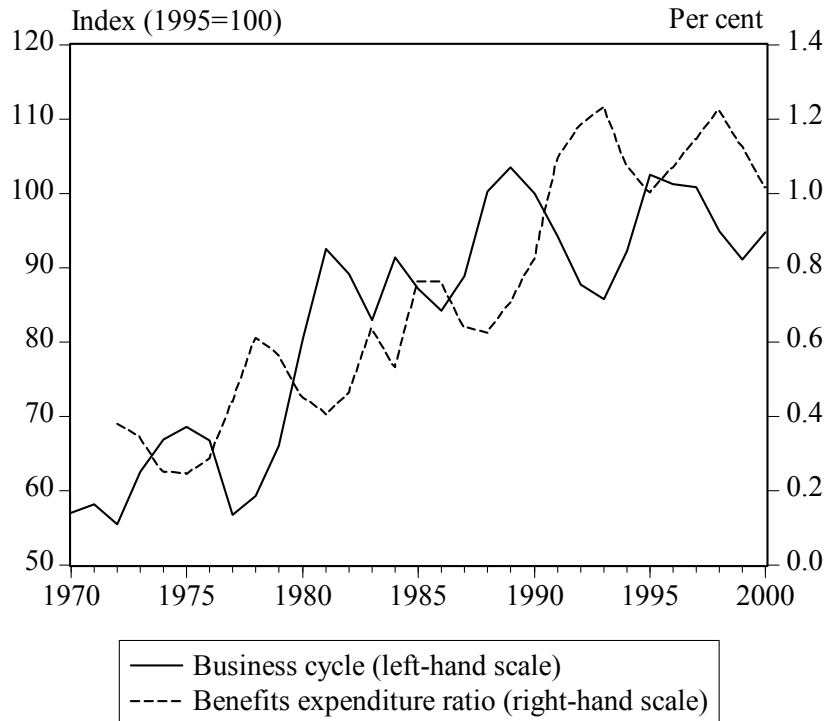
Africa is also illustrated in Figure 6.2, which portrays the inverse relationship between UI benefits as a ratio of total general government expenditure and the coincident business cycle indicator.

Figure 6.1 Unemployment insurance benefits as a ratio of household disposable income against economic growth



Source: Department of Labour and South African Reserve Bank

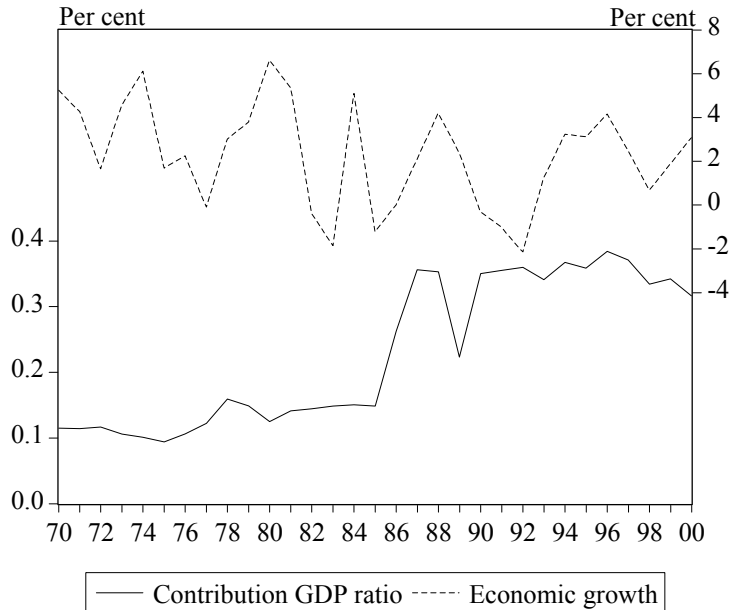
Figure 6.2 Unemployment insurance benefits as a ratio of total expenditure against the business cycle



Source: Department of Labour and South African Reserve Bank

Figure 6.3 indicates that the ratio of UI contributions to GDP did not respond as well to changes in economic growth as in the case of UI benefits. With an economic growth rate of 6,6 per cent in 1980, the ratio of UI contributions to GDP was 0,1 per cent. While the ratio was supposed to be lower in 1992 when the lowest economic growth rate of -2,1 per cent was recorded, the ratio in fact increased to 0,4 per cent. The weak automatic stabilising response of UI contributions is also highlighted by Figure 6.4, which shows UI contributions as a ratio of total revenue against the business cycle. UI contributions only dampened fluctuations in the level of economic activity for about a third of the time period used in the analysis.

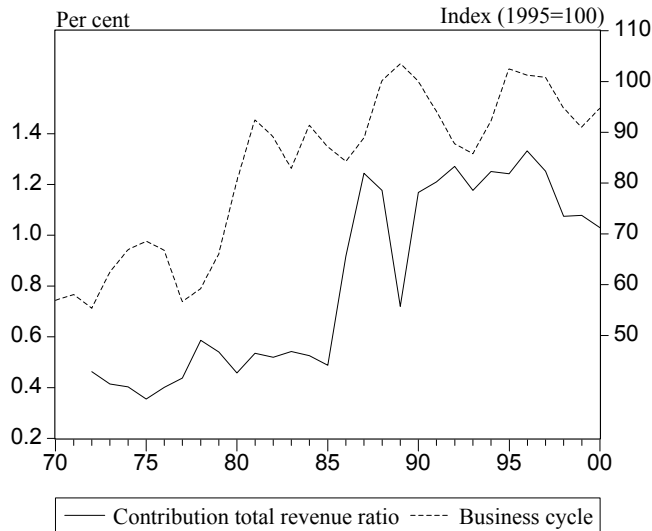
Figure 6.3 Unemployment insurance contributions as a ratio of GDP against economic growth



Source: Department of Labour and South African Reserve Bank

An alternative measure of the UIF's response to the direction of the economy is illustrated in Table 6.1, which shows UI benefit payments, UI contributions, UI balances and the various peaks and troughs of the business cycle for the period 1970 to 2000. During the height of an expansion (peak), UI benefit payments should be less than the benefits paid in the related trough year that follows the peak year in order for it to exhibit the countercyclical responses that characterise an automatic stabiliser. UI contributions, on the other hand, should be higher in peak years than in the related trough years. In total, the corresponding UI deficit should be larger during the trough year or the year immediately following the trough.

Figure 6.4 Unemployment insurance contributions as a ratio of total revenue against the business cycle



Source: Department of Labour and South African Reserve Bank

Table 6.1 Unemployment insurance and business cycle peaks and troughs¹⁹

YEAR	PEAK/TROUGH	UI BENEFITS		UI CONTRIBUTIONS		UI BALANCE	
		Nominal	Constant	Nominal	Constant	Nominal	Constant
1971	PEAK	14.0	241.0	16.2	278.6	2.2	37.7
1972	TROUGH	18.0	295.7	18.6	305.4	0.6	9.7
1975	PEAK	21.1	248.1	25.7	302.9	4.7	54.8
1977	TROUGH	50.7	483.2	41.9	399.0	-8.8	-84.1
1981	PEAK	88.2	513.0	102.7	596.9	14.4	83.8
1983	TROUGH	188.4	848.5	140.2	631.7	-48.1	-216.8
1984	PEAK	196.0	790.2	166.8	672.7	-29.1	-117.5
1986	TROUGH	386.5	1143.4	392.2	1160.3	5.7	16.9
1989	PEAK	563.0	1097.4	562.2	1095.9	-0.7	-1.4
1993	TROUGH	2021.3	2392.0	1454.4	1721.2	-566.8	-670.8
1997	PEAK	2670.5	2288.4	2538.7	2175.4	-131.8	-113.0
1999	TROUGH	2984.8	2273.3	2722.6	2073.6	-262.2	-199.7

Source: Department of Labour and South African Reserve Bank

¹⁹ Variables were converted into constant prices using the consumer price index.

From Table 6.1 it is clear that UI benefits were almost always higher in the trough years that followed the related peak years. However, it is clear from Table 6.1 that UI contributions have a limited effect as automatic stabiliser. With the exception of the peak of June 1984 and the following trough of March 1986, the UI balance was also always lower in the trough years that followed the related peak years.

In total, the average amount of benefits (in constant 1995 prices) during trough years amounted to R376,4 million more than in peak years, which was sufficient to offset the R194,8 million destabilising effect originating from UI contributions. Thus, on average, the UI deficit in trough years exceeded the deficit in peak years by R181,6 million. This is illustrated in Figure 6.5, which shows that (with the exception of the peak of 1984 and the trough of 1986) the UI balance has always been lower in trough years than in peak years.

The largest difference in the UI balance (in constant 1995 prices) between subsequent peak and trough years (R669,4 million) was recorded between the peak of 1989 and the trough of 1993. This comes as no surprise, as the largest negative economic growth rate and output gap was recorded in the early 1990s during one of the worst recessions since the Great Depression. Thus, based upon the timing of the UI balance, it can be regarded as an automatic fiscal stabiliser. Figure 6.6 highlights the cyclical movements demonstrated by the real UI balance and real UI benefits.

Figure 6.5 Real unemployment insurance balance and business cycle peaks and troughs

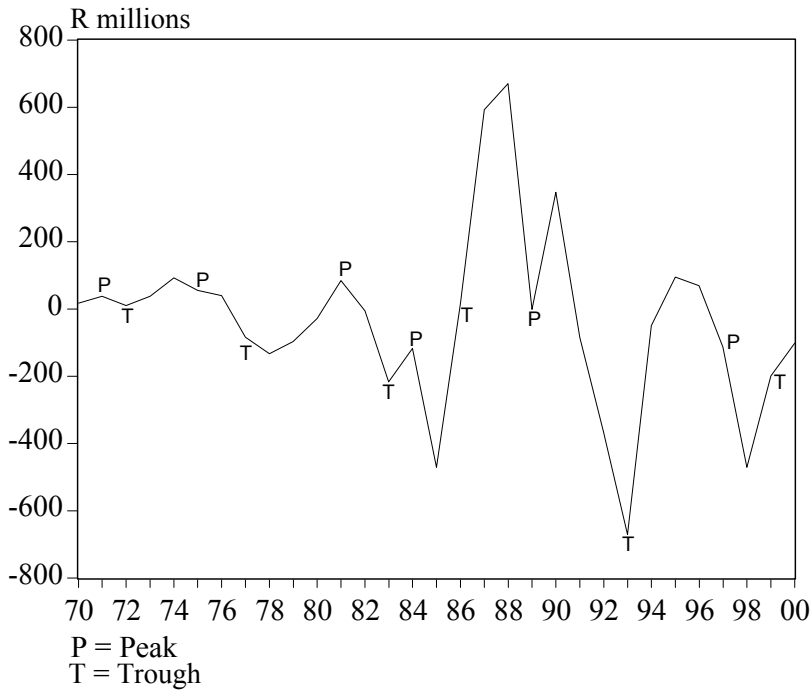


Figure 6.6 Real unemployment insurance benefits, real unemployment insurance balance and the business cycle

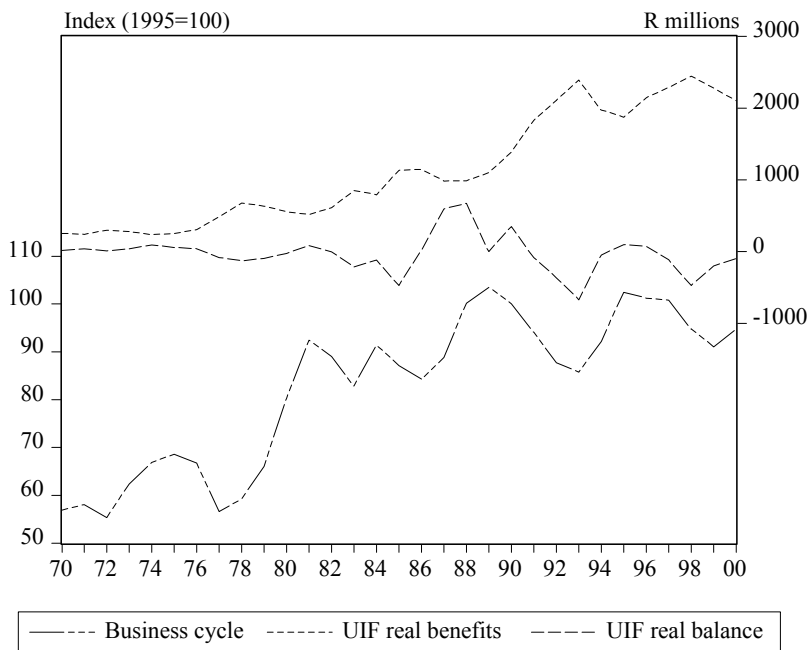


Table 6.2 Correlation coefficients and elasticities of expenditure components

Correlation coefficient between the cyclical components of government expenditure and output²⁰				
	UI benefits	Total expenditure	Current expenditure	Current primary expenditure
Nominal	-0.15	0.35	0.43	0.36
Real	-0.73	-0.16	-0.07	-0.1
Elasticity of expenditure components with respect to output growth²¹				
	UI benefits	Total expenditure	Current expenditure	Current primary expenditure
Nominal	-1.21	0.77**	0.18	0.38
Real	-5.0**	0.43	0.26	0.42

** denotes significance at the 1 per cent level

Although unemployment insurance benefits convey stabilising properties, the same cannot be said with confidence about other components of general government expenditure. Table 6.2 shows correlation coefficients between the cyclical components of output and government expenditure. In nominal terms, only unemployment insurance benefit payments show countercyclical characteristics. All real expenditure components are countercyclical as measured by the correlation coefficients, with the coefficient of unemployment benefits much stronger compared to the other components of expenditure. The elasticity of nominal (real) unemployment insurance benefits with respect to output growth is -1,21 (-5,0) per cent, indicating that a 1 per cent decrease in nominal (real) output growth leads to a 1,21 (5,0) per cent increase in nominal (real) unemployment insurance benefits. The rest of the expenditure components act in a procyclical manner.

²⁰ Estimates are based on Hodrick-Prescott filtered data.

²¹ OLS estimation of $d(\log(\text{EXP}_{it})) = \alpha_i + \beta_{\text{EXPI}} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction.

Table 6.3 A comparison of correlation coefficients and elasticities, 1972 to 2000

	Total expenditure	Current expenditure	Current primary expenditure
Correlation coefficient between the cyclical components of government expenditure and output²²			
South Africa	0.43	0.6	0.54
Chile	0.56	0.45	0.45
Indonesia	0.92	0.87	0.79
India	0.76	0.64	0.66
Romania	1.0	1.0	1.0
Mexico	0.94	0.93	0.92
Mauritius	0.72	0.69	0.73
	Total expenditure	Current expenditure	Current primary expenditure
Elasticity of expenditure components with respect to output growth²³			
South Africa	0.68*	0.62*	0.69*
Chile	1.06**	1.09**	1.06**
Indonesia	1.21**	0.89**	0.92**
India	0.08	-0.03	-0.07
Romania	0.97**	0.93**	0.89**
Mexico	1.0**	1.0**	0.74**
Mauritius	0.86**	-0.18	0.95**

** (*) denotes significance at the 1 (5) per cent level

Table 6.3 shows correlation coefficients between the cyclical components of nominal GDP and nominal central government expenditure for seven developing countries as well as the elasticities of their expenditure components with respect to output growth. It is clear from Table 6.3 that the same conclusion of procyclicality of government expenditure can be made with respect to the six other selected developing countries (Chile, Indonesia, India, Romania, Mexico and Mauritius) as was found in the case of South Africa. This finding is consistent with the findings of Talvi and Vegh (2000) and Braun (2001).

²² Estimates are based on Hodrick-Prescott filtered data.

²³ OLS estimation of $d(\log(\text{EXP}_{it})) = \alpha_i + \beta_{\text{EXP}_i} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where EXP_i represents the respective country's expenditure component and Y_i the respective GDP.

The largest value of UI benefits and the UI balance might serve as a rough measure of the program's importance. The UI benefits and the UI balance as a ratio of GDP (in constant terms) reached maximum values of only 0,46 and -0,13, respectively, in the trough of 1993. A further exercise showed, for example, that an output elasticity of unemployment-related expenditure of -10 per cent is needed to generate an output elasticity of current primary expenditure of -0,1 per cent, which results in a maximum automatic fiscal stabilising effect of only 0,09 per cent of potential output²⁴. Thus, although the UIF operates as an automatic fiscal stabiliser, its impact is insignificant due to its small share in the total public finances.

6.4 IMPACT OF THE NEW UNEMPLOYMENT INSURANCE LEGISLATION

As pointed out earlier, the new UI legislation has widened the contributor base from which the South African UIF is able to provide significantly improved benefits for all beneficiaries. This section aims to measure the impact of these developments on the stabilising role of the UIF by adjusting historical data to reflect these changes.

Table 17.11 of the 2003 *Estimates of National Expenditure* provides summary information of revenue and expenditure for the UIF for the period fiscal 1999/2000 to fiscal 2005/2006. Allowing for a 6,0 per cent growth rate for fiscal 2002/2003 and fiscal 2003/2004²⁵, it can be assumed that the new legislation will have the effect that tax revenue will increase by approximately 50 per cent and transfer payments and subsidies by approximately 20 per cent.

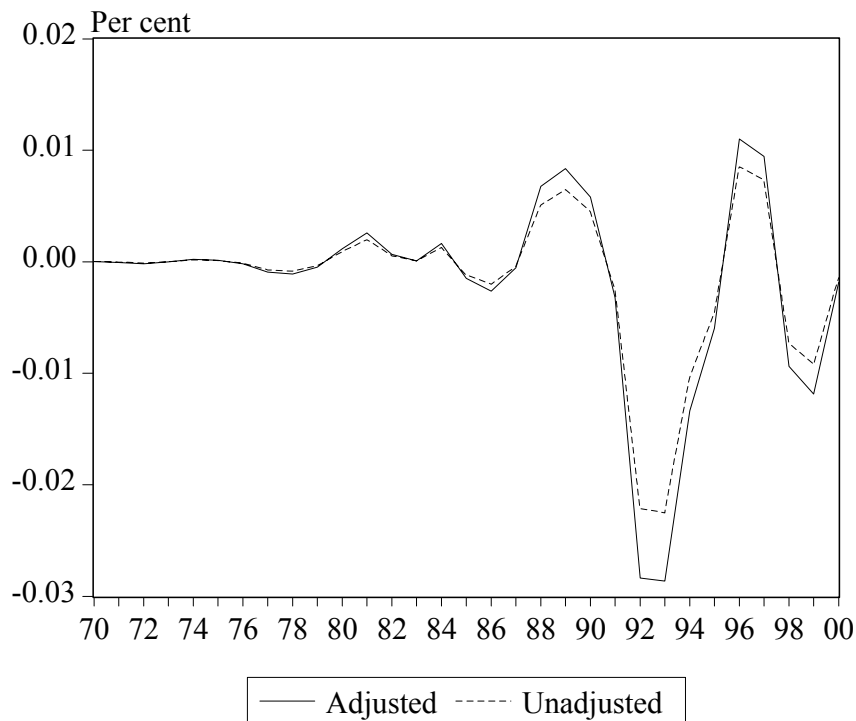
Figure 6.7 illustrates the cyclical component of the UI balance with and without an increase in UI contributions and benefit payments of 50 per cent and 20 per cent respectively. The maximum difference of 0,006 per cent of potential output was recorded in fiscal 1992/1993. The impact of the UIF as an automatic fiscal stabiliser in the South

²⁴ The output elasticity of current primary expenditure was defined as the output elasticity of unemployment-related expenditure times the share of unemployment related expenditure in total current primary expenditure.

²⁵ The growth rate for fiscal 2004/05 and fiscal 2005/06.

African economy can therefore be expected to be larger with the new UI legislation, but the overall impact will still be much smaller compared to the role of tax revenue in general.

Figure 6.7 The impact of the new UI legislation on the cyclical component of the UI balance



6.5 SYNOPSIS

The primary role of the South African UIF is to provide a social safety net for the unemployed. However, this study explained how the UI system's contributions and benefits act in tandem to serve as counterbalances to the direction of the business cycle. The main aim of this chapter was therefore to investigate whether the South African UI system responds to economic downturns and economic recoveries in ways that would stabilise the economy.

Absolute measures derived from analysing only the characteristics of the UI system over time showed that the UI system, through its benefit payments to the unemployed, acted in a countercyclical manner to moderate economic recessions and temper expansions. UI contributions, however, demonstrated a weak automatic stabilising response to the direction of the economy. In fact, UI contributions destabilised economic activity most of the time. Nevertheless, the net stabilising effect of UI benefits was sufficient to offset the destabilising effects of UI contributions to the extent that the UI balance acted as an automatic fiscal stabiliser during the period 1970 to 2000.

Although unemployment insurance benefits display stabilising properties, the same cannot be said with confidence about other components of general government expenditure. Correlation coefficients show that only unemployment insurance benefits show countercyclical characteristics in nominal terms. In real terms, all the selected expenditure components are countercyclical, but the coefficient of unemployment insurance benefits is much stronger compared to other categories of expenditure. Furthermore, the stabilising effect of the South African Unemployment Insurance Fund can be expected to be relatively insignificant due to its small share in the total public finances. Results showed that the impact of the UIF as an automatic fiscal stabiliser could be expected to be larger with the new UI legislation, but that the overall impact would still be much smaller compared to the role of tax revenue in general. However, the possible psychological benefits of the UI system and the evidence provided in this chapter emphasise the potential of the Unemployment Insurance Fund as an effective automatic fiscal stabiliser, also in South Africa.

CHAPTER 7

THE CYCLICALLY ADJUSTED BUDGET BALANCE AND AUTOMATIC STABILISATION IN SOUTH AFRICA

7.1 INTRODUCTION

Chapter 3 pointed out that fiscal policy cannot easily be assessed on the basis of developments in actual government balances, since these reflect the impact of the business cycle via the operation of automatic fiscal stabilisers in addition to policy measures approved by government. The impact of the business cycle on government budgets, therefore, needs to be disentangled if fiscal developments are to be monitored accurately. The aim of this chapter is to calculate the cyclically adjusted budget balance as an alternative fiscal indicator for South Africa that can contribute to more effective fiscal policy implementation and analysis. The chapter makes use of the results obtained from Chapters 5 and 6 to analyse the total impact of automatic fiscal stabilisers and discretionary fiscal policy on the South African economy. Finally, the chapter evaluates the role of fiscal policy under the New Partnership for Africa's Development (NEPAD).

7.2 A CYCLICALLY ADJUSTED BUDGET BALANCE INDICATOR FOR SOUTH AFRICA

As explained in Section 3.8, the calculation of cyclical components and the cyclical adjustment of budget balances generally involve three main steps. The first step involves measuring the economy's potential output in order to identify an output gap (difference between actual and potential output) that indicates the economy's cyclical position. As a second step, elasticities of cyclically sensitive tax revenue and expenditure categories with respect to output are calculated in order to estimate the sensitivity of these items to the business cycle. In the third step, the overall budget balance is adjusted according to the results obtained in the previous steps.

In this study, automatic fiscal stabilisers on the revenue side are determined by using tax revenue and on the expenditure side by using unemployment insurance benefit payments, as described in Chapters 5 and 6. Taxes are assumed to be increasing in output with a constant elasticity, while unemployment insurance benefit payments are assumed to be decreasing in output with a constant elasticity. Other revenue and expenditure categories are considered to remain unaffected by economic fluctuations.

Following the methodology of Van den Noord (2000) as described in Chapter 3, and combining the results obtained from Chapters 5 and 6, the cyclical components of the budget balance are calculated by subtracting the estimated structural components of tax revenues and government expenditure from their actual levels. The structural components are calculated from actual tax revenues and expenditures, adjusted proportionally according to the ratio of trend output to actual output and the assumed built-in elasticities. Thus:

$$b^{**} = b - b^* \quad (4)$$

$$b^* = \frac{\sum T_i^* - G^* + X}{Y^*} \quad (5)$$

where:

- b^{**} = cyclical component of budget balance (ratio to trend output)
- b^* = structural component of budget balance (ratio to trend output)
- b = actual budget balance (ratio to actual output)
- G^* = structural unemployment insurance benefit payments
- T_i^* = structural component of the i th category of tax
- X = total revenue and grants (excluding tax revenue) less total expenditure and net lending (excluding unemployment insurance benefit payments)
- Y^* = trend output

and:

$$\frac{T_i^*}{T_i} = \left(\frac{Y^*}{Y}\right)^{\alpha_i}; \frac{G^*}{G} = \left(\frac{Y^*}{Y}\right)^{\beta} \quad (6)$$

where:

T_i = actual tax revenue for the i th category of tax

G = actual unemployment insurance benefit payments

Y = level of actual output

α_i = elasticity of i th tax category with respect to output growth ($\alpha_i > 0$)

β = elasticity of unemployment benefit payments with respect to output growth
($\beta < 0$)

This study makes use of regression analysis to estimate average elasticities over the period 1970 to 2000. The results are reported in Table 7.1²⁶ The output gap was calculated as the percentage deviation of observed real GDP from trend real GDP, where trend output was estimated by a Hodrick-Prescott (HP) filter (lambda = 100) as reported in Chapter 4.

From relationships (1), (2) and (3) the cyclical component of the budget balance is derived as:

$$b^{**} = \frac{1}{Y} \sum_i T_i \left[1 - \left(\frac{Y^*}{Y}\right)^{\alpha_i - 1} \right] - \frac{G}{Y} \left[1 - \left(\frac{Y^*}{Y}\right)^{\beta - 1} \right] + \frac{X}{Y} \left[1 - \left(\frac{Y^*}{Y}\right)^{-1} \right] \quad (7)$$

²⁶ The values reported should be interpreted as buoyancy coefficients rather than elasticities, since the analysis did not control for the impact of all discretionary changes in the tax and expenditure structure.

This formula shows that the cyclical component of the budget balance corresponds to the cyclical components of tax revenue and unemployment insurance benefits, which, in turn, are sensitive to the estimated output gaps and the built-in elasticities.

Table 7.1 Correlation coefficients and elasticities of budget components

Correlation coefficient between the cyclical components of the budget and output²⁷						
Direct taxes	Indirect taxes	UI benefit payments	Total revenue and grants	Total expenditure and net lending	Budget balance	X²⁸
0.3	0.19	-0.47	0.26	-0.3	0.38	0.26
Elasticity of budget components with respect to output growth²⁹						
Direct taxes	Indirect taxes	UI benefit payments	Total revenue and grants	Total expenditure and net lending	Budget balance	X
0.42**	0.19*	-1.23	0.91**	0.76**	0.04	0.07

** (*) denotes significance at the 1 (5) per cent level

Table 7.1 shows correlation coefficients between the cyclical components of the budget balance and output. All the correlation coefficients have the correct sign, indicating that tax revenue and total revenue and grants are procyclical, while UI benefit payments and total expenditure and net lending are countercyclical. The elasticity estimates, however,

²⁷ Estimates are based on Hodrick-Prescott filtered data.

²⁸ Defined as total revenue and grants (excluding tax revenue) *less* total expenditure and net lending (excluding unemployment insurance benefit payments).

²⁹ OLS estimation of $d(\log(B_{it})) = \alpha_i + \beta_{Bi} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where B_i represents the respective budget component and Y represents GDP. In the case of the budget balance and X , the dependent variable was defined as $d(B_i/Y)$. The elasticity of direct taxes and indirect taxes with respect to output growth was calculated as the product of the elasticities of the tax categories with respect to their tax bases and the elasticities of these tax bases with respect to output. The current income of households was selected as the tax base for direct taxes, while private consumption expenditure was selected as the tax base for indirect taxes.

indicate that total expenditure and net lending are procyclical³⁰. This destabilising effect from expenditure components partially offset the stabilising effect of revenue components, so that the budget balance only has a small stabilising impact. The elasticity of the budget balance with respect to output growth is 0,04, indicating that a 1 per cent decrease in output growth leads to a 0,04 per cent decrease in the budget balance as a ratio of GDP.

The average marginal sensitivity³¹ of total revenue and grants (total expenditure and net lending) to GDP was estimated at 0,25 (0,24) respectively. This implies an average marginal sensitivity of the budget balance to GDP of 0,01, indicating that each widening of a negative output gap by 1 percentage point reduces the general government budget balance in South Africa by 0,01 percentage points to GDP.

The actual, structural and cyclical components of the general government budget balance against the output gap are portrayed in Figure 7.1. The cyclical component of the budget balance responds more or less in line with changes in the output gap and it seems as if the automatic fiscal stabilisers in South Africa were allowed to operate in both the up- and downward phases of the business cycle. Although the cyclical component of the general government budget balance represents only a small part of the total balance, the results illustrate a more prominent role for automatic fiscal stabilisers during the latter half of the sample period. Figure 7.1 indicates that the structural budget balance improved significantly from fiscal 1996/97 to fiscal 1999/2000.

³⁰ The procyclical behaviour of government expenditure is not uncommon in developing countries (see Talvi and Vegh (2000) and Braun (2001)). The authors describe the procyclicality of government expenditures in developing countries as an optimal response to tax base volatility and the interaction of political factors combined with limited creditworthiness caused by the debt crises of the early 1980s.

³¹ Defined as $\eta_{Bi,Y} * (Bi/Y)$ where Bi represents total revenue and grants or total expenditure and net lending, $\eta_{Bi,Y}$ the elasticity of Bi with respect to output growth and Y output. The marginal sensitivity of the budget balance is the difference between the marginal sensitivity of total revenue and grants and the marginal sensitivity of total expenditure and net lending.

Figure 7.1 Comparison of the actual, structural and cyclical components of the budget balance against the output gap³²

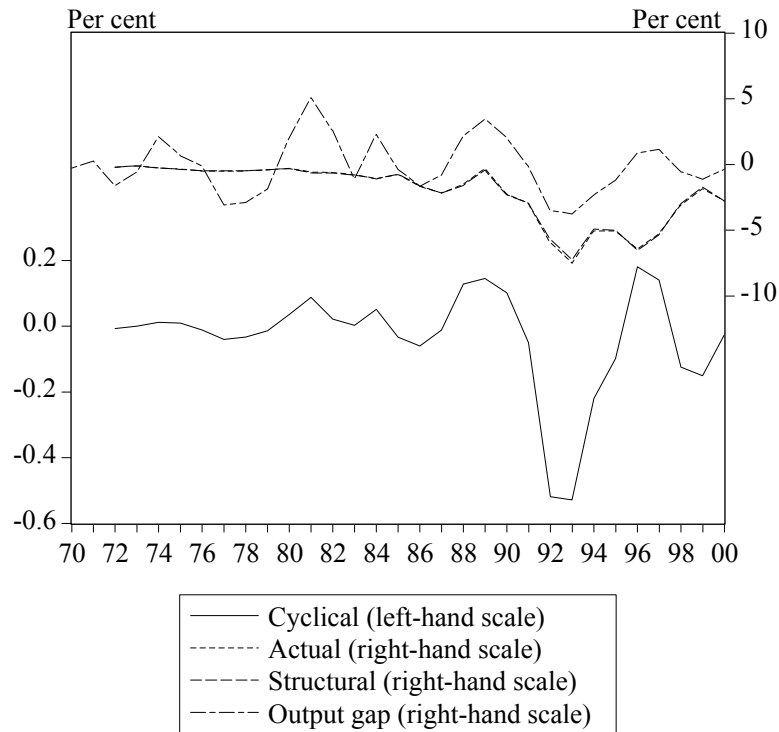


Figure 7.2 illustrates the effect of a unitary elasticity assumption of direct and indirect tax revenue with respect to output growth on the cyclically adjusted budget balance. The maximum effect of 1,3 per cent of potential output was recorded in 1993. On average, a unitary direct and indirect tax elasticity assumption increases the cyclically adjusted budget balance by 0,4 per cent of potential output over the sample period.

³² The small size of the cyclical component makes it difficult to distinguish between the actual and structural components to the extent that there appears to be only three lines.

Figure 7.2 The effect of a unitary tax elasticity assumption on the cyclically adjusted budget balance

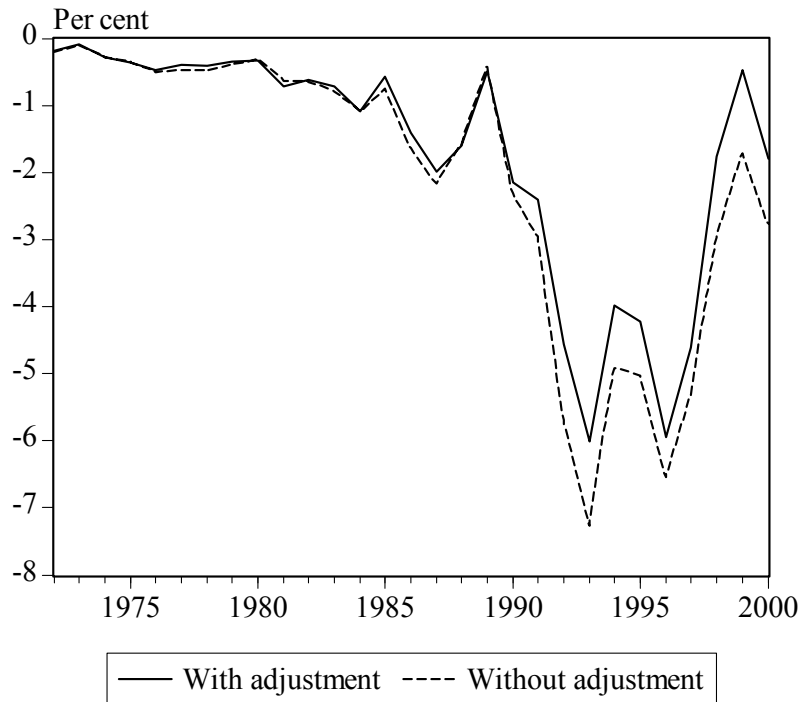
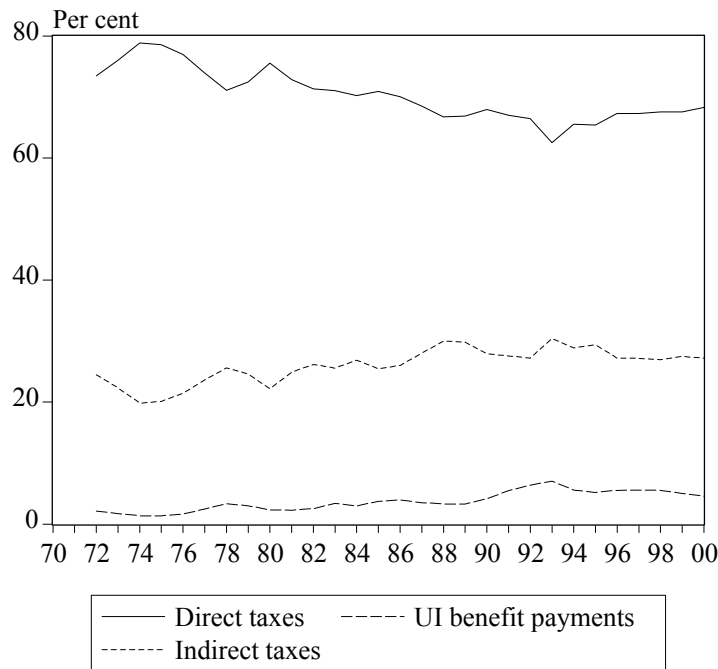


Figure 7.3 shows that cyclical fluctuations in revenue are much larger than those of expenditure. The largest automatic stabilising effect arises from direct taxes. The small stabilising effect of unemployment insurance benefit payments can be ascribed to its small share in the total public finances³³. The average contribution of direct taxes, however, decreased from 73,8 per cent in the first half of the sample period to 67,0 per cent in the last half, while the average contribution of indirect taxes (UI benefit payments) increased from 23,8 (2,4) per cent to 28,1 (4,9) per cent over the same period.

³³ On average, UI benefits represent only 0,2 per cent of GDP and 0,7 per cent of total consolidated general government expenditure over the sample period. Social security and welfare provision, on average, absorbs only 8,0 per cent of consolidated general government expenditure according to the functional classification of expenditure.

Figure 7.3 Contributions to the total cyclical component of the budget balance

As shown in Table 7.2, the general government budget balance as a ratio of GDP reached a minimum value of -9,1 per cent in fiscal 1993/94, while the maximum value of -0,6 per cent was reached in fiscal 1989/90. The largest improvement in the general government budget balance ratio occurred in fiscal 1994/95, while the largest deterioration occurred in fiscal 1992/93. The deterioration in the general government balance ratio during the early 1990s resulted more from increases in the general government expenditure ratio than from decreases in the revenue ratio, while the improvement in the general government budget balance ratio towards the end of the sample period resulted more from increases in the general government revenue ratio than from decreases in the expenditure ratio. It is also clear from Table 7.2 that changes in the budget balance can mainly be ascribed to changes in the structural component. The large discretionary fiscal consolidation efforts during the period fiscal 1996/97 to fiscal 1999/2000, worked against the automatic fiscal stabilisers during a period of slower economic growth and could have contributed to the subdued economic growth recorded in this period.

Table 7.2 Budgetary developments as a ratio of GDP

	Budget balance	Change in budget balance	Change in budget balance due to:		Change in budget balance due to:	
			Revenue	Expenditure	Structural component	Cyclical component
1973	-1.7	2.8	-0.1	-2.9	2.7	0.1
1974	-4.0	-2.3	0.3	2.5	-2.4	0.1
1975	-5.0	-1.0	1.4	2.4	-1.0	0.0
1976	-6.4	-1.4	0.1	1.5	-1.3	-0.1
1977	-5.8	0.7	1.3	0.7	0.8	-0.2
1978	-5.1	0.6	-1.3	-1.9	0.5	0.1
1979	-3.5	1.6	-0.2	-1.9	1.5	0.1
1980	-2.0	1.6	0.6	-0.9	1.3	0.3
1981	-3.6	-1.6	-0.6	1.0	-1.7	0.2
1982	-3.4	0.1	1.2	1.1	0.4	-0.3
1983	-3.9	-0.4	-0.5	-0.1	-0.3	-0.1
1984	-4.5	-0.6	1.3	1.9	-0.7	0.1
1985	-2.9	1.6	1.9	0.3	1.8	-0.2
1986	-5.3	-2.4	-2.2	0.2	-2.4	0.0
1987	-5.9	-0.7	0.1	0.8	-0.8	0.1
1988	-3.5	2.5	1.2	-1.3	2.3	0.2
1989	-0.6	2.9	1.3	-1.6	2.8	0.1
1990	-3.9	-3.3	-1.0	2.3	-3.2	-0.1
1991	-4.5	-0.7	-0.7	0.0	-0.5	-0.2
1992	-8.2	-3.7	-0.8	2.9	-3.4	-0.3
1993	-9.1	-0.9	0.4	1.3	-1.0	0.1
1994	-5.5	3.6	0.5	-3.0	3.4	0.2
1995	-5.0	0.5	-0.4	-1.0	0.4	0.1
1996	-5.8	-0.8	0.0	0.8	-0.9	0.2
1997	-4.4	1.4	0.9	-0.5	1.4	0.0
1998	-2.4	1.9	1.4	-0.5	2.1	-0.2
1999	-1.4	1.1	0.6	-0.4	1.1	0.0
2000	-1.9	-0.5	-1.6	-1.1	-0.6	0.1

Table 7.3 Estimated response of the budget balance to the output gap

Sample period	Structural component	Cyclical component	Actual
1970-2000	0.36 (0.25)	0.05 (0.01)	0.39 (0.25)
1970-1985	-0.04 (0.07)	0.01 (0.00)	-0.03 (0.07)
1986-2000	0.82 (0.49)	0.10 (0.01)	0.88 (0.49)
1970-1979	0.12 (0.06)	0.01 (0.00)	0.13 (0.06)
1980-1989	-0.14 (0.14)	0.03 (0.00)	-0.12 (0.14)
1990-2000	1.28 (0.63)	0.13 (0.01)	1.35 (0.63)
Note: Standard errors in parentheses			

The methodology of Taylor (2000: 33) was once again used to provide estimates of the responses of the total budget balance, and its structural and cyclical components to the output gap. Table 7.3 shows estimates from bivariate regressions using the output gap (defined as the percentage deviation of real GDP from trend GDP) as the independent variable and the structural, cyclical and actual budget balance (each expressed as a percentage of trend GDP), one at a time, as the dependent variable. The impact of the output gap on discretionary fiscal policy (measured by the structural component of the general government budget balance) and automatic fiscal stabilisers (measured by the cyclical component of the general government budget balance) varies significantly according to the chosen sample period. The general government budget balance moved procyclically over the whole sample period, but regressions over two sub-samples (1970-1985 and 1986-2000) indicate that it moved countercyclically during the first half of the sample period and strongly procyclically during the latter half of the sample period. The countercyclical behaviour of the budget balance during the first half of the sample period was the result of procyclical discretionary fiscal policy, which worked against the automatic fiscal stabilisers. Discretionary fiscal policy was strongly countercyclical during the latter half of the sample period, particularly since the 1990s. The role of

automatic stabilisers was much weaker than that of discretionary fiscal policy over the sample period, but the results indicate that automatic fiscal stabilisers became stronger in the latter half of the sample period. The estimated effects of variations in the output gap on the actual budget balance and the structural component of the budget balance are not significant in any of the reported time periods.

An alternative approach to measuring the impact of automatic fiscal stabilisers is illustrated in Figure 7.4, which illustrates the budgeted and actual national government budget balance over the period fiscal 1990/91 to fiscal 2002/03. If changes in the budgeted balance are regarded as discretionary fiscal policy, the difference between the budgeted and actual outcome roughly reflects the impact of automatic fiscal stabilisers. During a downswing (represented by the shaded areas), the working of automatic fiscal stabilisers will have the effect that the actual budget balance (deficit) will be smaller (larger) than the budgeted balance and vice versa. The rather substantial differences between the budgeted and actual budget balance suggest that automatic fiscal stabilisers are powerful and that fiscal policy exerts a significant stabilising influence on the South African economy. It is also clear that the countercyclical role of fiscal policy is stronger during upswings than during downswings. This result, which is consistent with the observation made in Chapter 4, can possibly be ascribed to the fact that the budget balance is allowed to improve during upswings, while it is not allowed to deteriorate during downswings in line with the government's stated objective of reducing the budget deficit.

Table 7.4 reports on the difference between budgeted and actual national government tax revenue over the period fiscal 1995/96 to fiscal 2002/03. In addition to total tax revenue, taxes on net income and profits are used as a proxy for direct taxes and domestic taxes on goods and services as a proxy for indirect taxes. The period fiscal 1995/96 to fiscal 1998/99 represents a period marked by a downswing in the business cycle, while the period fiscal 1999/00 to fiscal 2002/03 represents a period marked by an upswing in the business cycle. A "+" indicates situations where the actual outcome is larger than the budgeted amount, while a "-" indicates situations where the actual outcome is smaller

than the budgeted amount. During a downswing (upswing), the actual outcome is expected to be smaller (larger) than the budgeted amount so that a negative (positive) sign could be expected. Overall, the results also suggest that automatic fiscal stabilisers worked more effectively during upswings than during downswings, as the actual outcome is larger than the budgeted amount for almost all the components and for almost the entire sample period. This may also be the result of more efficient revenue collection procedures and/or poor revenue forecasting, which means that the results for the upswing period could not necessarily be ascribed to the working of automatic stabilisers. The effect of automatic stabilisers, however, is illustrated by the fact that actual outcomes during the upswing phase of the business cycle exceeded the budgeted amounts by a larger margin compared to the downswing phase.

Figure 7.4 Actual and budgeted national government balance, fiscal 1990/91 to fiscal 2002/03

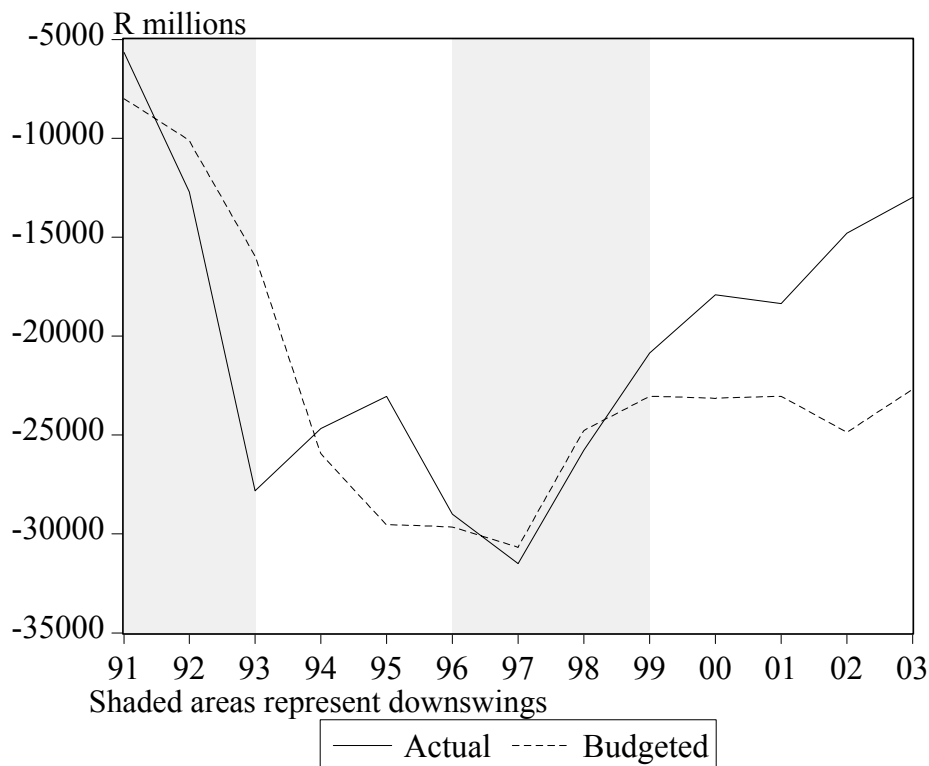


Table 7.4 Difference between budgeted and actual budget components

Business cycle	Fiscal years	Taxes on net income and profits	Domestic taxes on goods and services	Total tax
Downswing	1995/96	+	+	+
	1996/97	+	-	+
	1997/98	+	+	+
	1998/99	+	-	+
Upswing	1999/00	+	+	+
	2000/01	+	-	+
	2001/02	+	+	+
	2002/03	+	+	+
Note: (+) indicates that Actual > Budgeted (-) indicates that Actual < Budgeted				

According to the European Central Bank (2002:36), some observers argue that the cyclically adjusted primary balance is a more appropriate measure for assessing a government's fiscal policy stance, insofar as interest expenditure is the consequence rather than the cause of expansionary fiscal policies or consolidation efforts. Figure 7.5 indicates that the trend of the South African general government structural primary balance is similar to that of the total structural budget balance. The period 1972 to 1984 reflects neutral fiscal policy, 1989 to 1993 expansionary fiscal policy and 1993 to 1999 fiscal consolidation. The improvement in the budget balance since 1993, during a period of slower economic growth, worked against the automatic fiscal stabilisers and could have contributed to the subdued economic growth during this period.

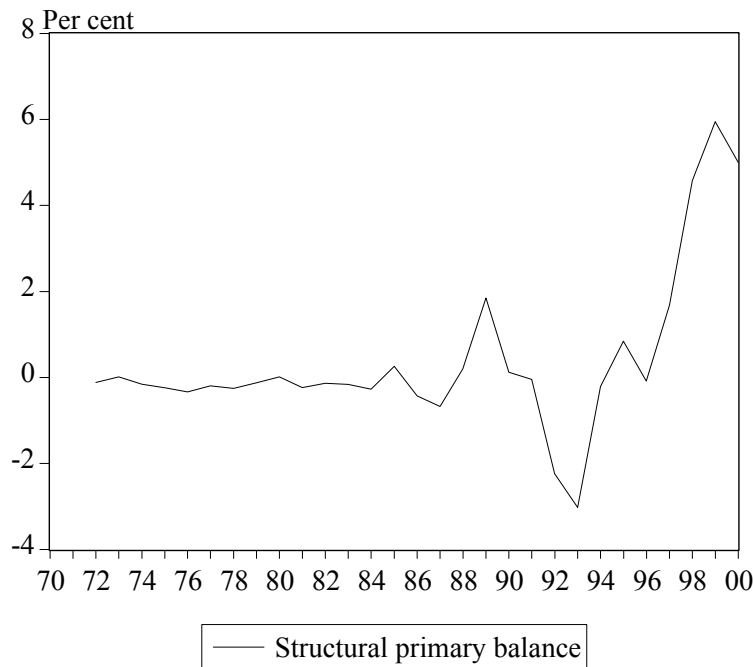
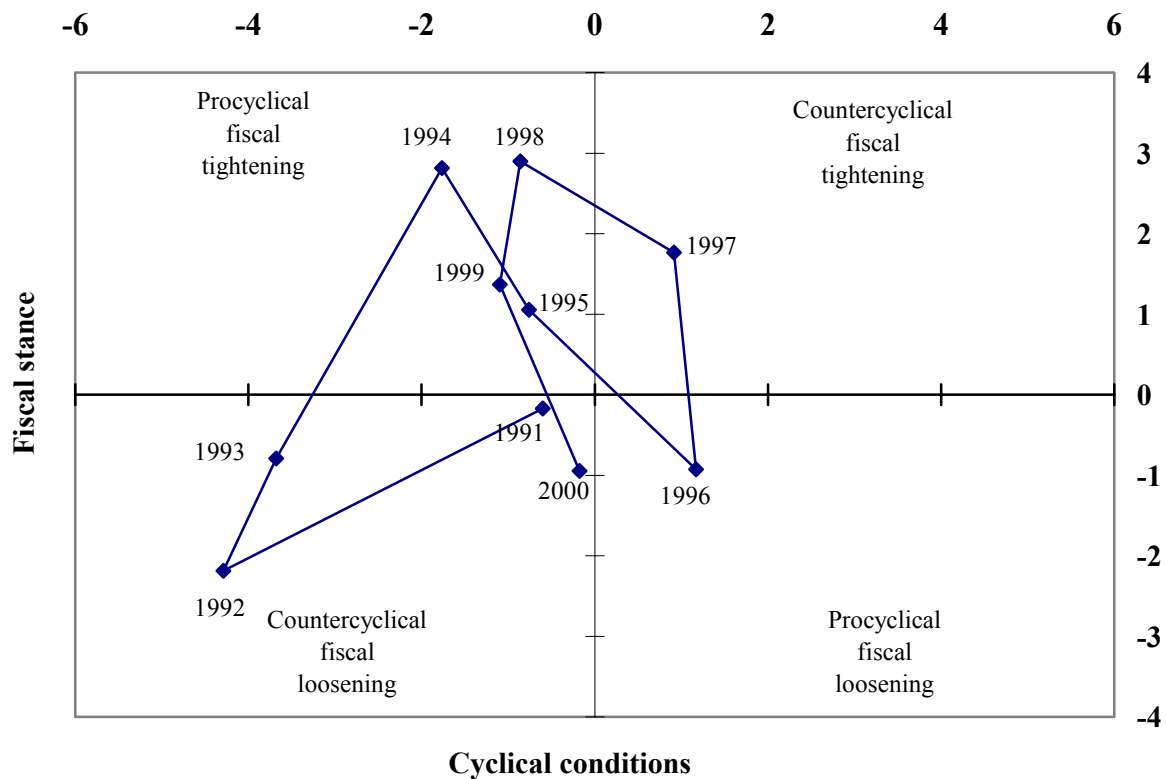
Figure 7.5 Structural primary balance as a ratio of trend GDP

Figure 7.6 examines the fiscal stance (proxied by the change in the cyclically adjusted primary balance) in relation to cyclical conditions (proxied by the output gap). When the change is positive (negative), the fiscal stance is said to be restrictive (expansionary). A balanced budget over the economic cycle (neutral fiscal policy) is represented by a line parallel to the horizontal axis. Hence, changes in the output gap do not result in movements in the fiscal stance. Changes in the actual budget balances reflect the working of automatic fiscal stabilisers. Figure 7.6 shows that South Africa mostly experienced negative output gaps over the period 1991 to 2000. Fiscal policy was tightened in 1994, 1995, 1998 and 1999 despite negative output gaps, and eased in 1996, despite a positive output gap. Fiscal policy was strongly countercyclical in 1992 and procyclical in 1994 and 1998.

Figure 7.6 Fiscal stance and cyclical conditions, 1991 to 2000

In Figure 7.7 the fiscal stance is plotted on the vertical axis and the monetary stance (proxied by the change in the real short-term interest rates³⁴) on the horizontal axis. The policy mix (the combination of monetary and fiscal policies in place) has varied a great deal in South Africa during the period 1991 to 2001. The monetary stance was loosened in 1991, 1992, 1993 and 1999. The period 1991 and 1999, however, was marked by fiscal tightening. The fiscal stance was loosened and the monetary stance tightened in 1996 and 2000. Overall, the policy mix over the period 1991 and 2000 seemed to be conducive for economic growth and macroeconomic stability. There is, however, no evidence that these policies had been explicitly coordinated. In fact, it is more likely that the policies reflected the outcome of independent responses to the fiscal and monetary conditions.

³⁴ Calculated by subtracting the inflation rate in the previous year from the current discount rate.

Figure 7.7 Policy mix, 1991 to 2000

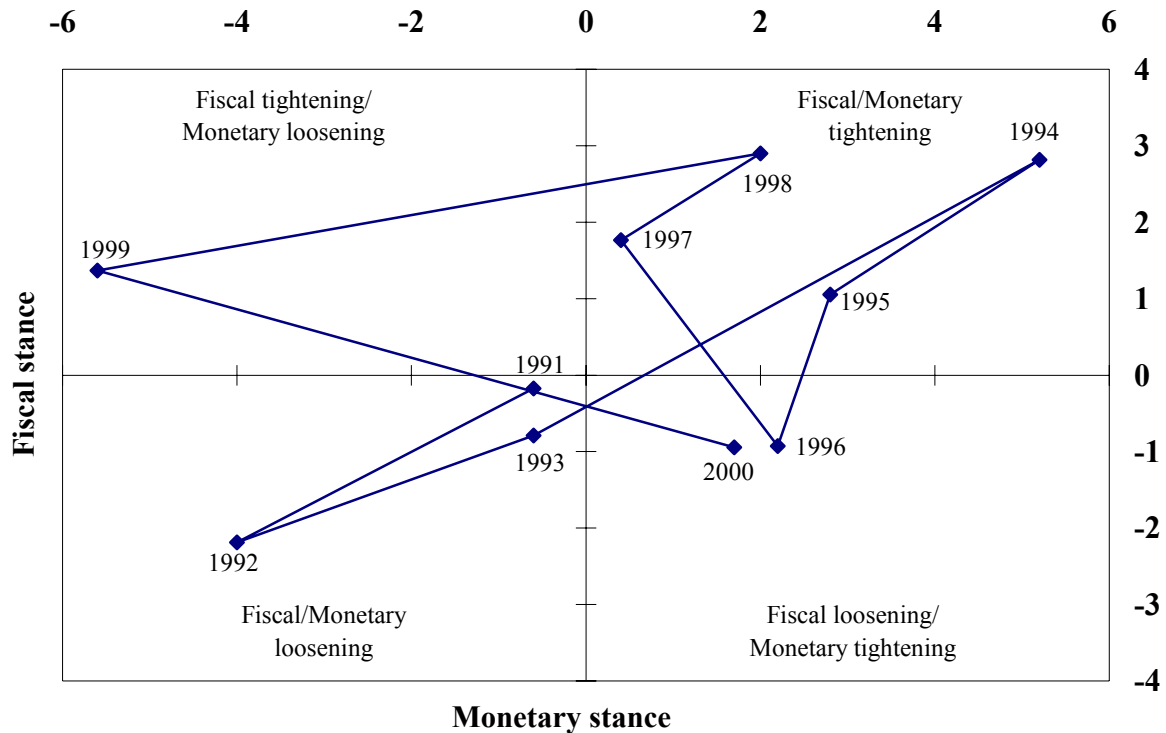


Figure 7.8 illustrates the national, provincial and local government budget balances against the output gap over the period fiscal 1972/73 to fiscal 2000/2001. The national government balance shows the largest cyclical variation over time and tracks movements in the output gap more closely compared to that of the local and provincial government balances. This fact is also illustrated by Table 7.5, which compares correlation and elasticity coefficients between the three levels of government. The correlation coefficient between the cyclical component of the budget balance and output as well as the elasticity of the budget balance with respect to output growth is greater for the national government compared with that of the provincial and local governments. This result can be ascribed to differences in the composition of revenue between the different levels of government. Taxes on net income and profits (which have a high income elasticity) constitute the

largest part of national government revenue, while provincial government revenue is primarily sourced by grants from national government and local government revenue is raised by property taxes and user charges for services rendered (electricity, water, sewerage, refuse disposal etc.). The scope for automatic stabilisation at the provincial and local government level in South Africa is, therefore, very limited due to the nature of their role – and thus the composition of their revenue - in the South African public finances.

Figure 7.8 National, provincial and local government balances against the output gap

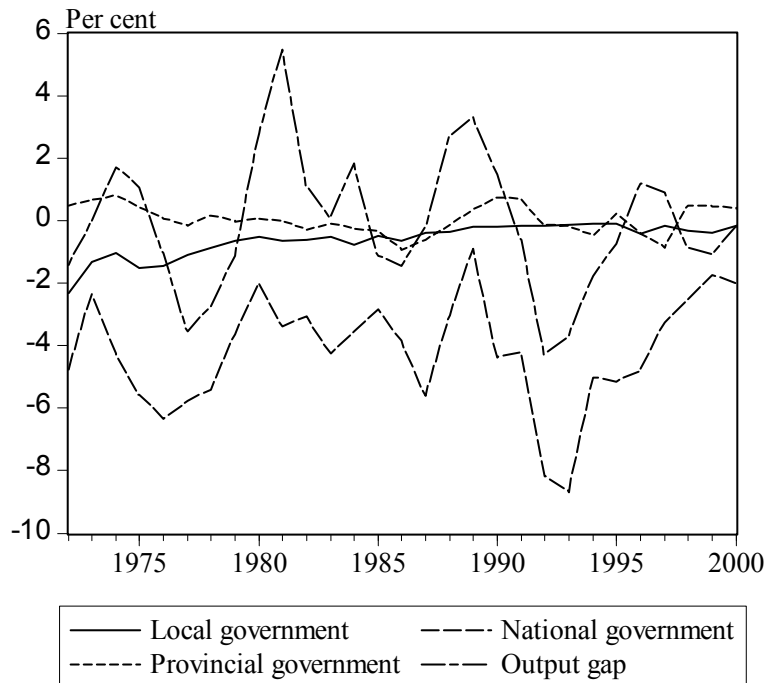


Table 7.5 Correlation coefficients and elasticities of national, provincial and local government balances

	National	Provincial	Local
Correlation coefficient between the cyclical component of balance and output³⁵	0.5	-0.0	-0.1
Elasticity of budget balance with respect to output growth³⁶	0.1	0.0	0.0

7.3 THE ROLE OF FISCAL POLICY IN NEPAD

Under the New Partnership for Africa's Development (NEPAD), African leaders will take joint responsibility for, amongst others, restoring and maintaining macroeconomic stability, especially by developing appropriate standards and targets for fiscal and monetary policies and introducing appropriate institutional frameworks to achieve these standards (NEPAD October 2001:10). NEPAD is, therefore, a commitment of good governance, emphasising ownership and responsibility by African governments.

Although there have been positive signs of recent progress, Africa's overall economic performance has been disappointing over the years. This was the result of weak domestic policies as well as factors that are beyond the control of African countries. Fluctuations in economic activity in many African countries are often due to external shocks, such as supply shocks due to weather, shocks in international commodity prices, or sudden turnarounds of international capital flows. In addition, Funke and Nsouli (2003:7) maintain that macroeconomic policy weaknesses are an important contributor to the weak growth performance in Africa. Many African economies are characterised by fiscal indiscipline and unstable and inconsistent macroeconomic policies and programmes.

³⁵ Estimates are based on Hodrick-Prescott filtered data.

Continued vulnerability to macroeconomic imbalances in many African countries prevents realisation of their full growth potential, especially in the absence of predictable and sound fiscal policies.

Fiscal policy can play an important role in the consolidation of macroeconomic stability in Africa. While ensuring financial stability, sound fiscal policy could also help promote growth and poverty reduction (Funke and Nsouli 2003:14). The challenges related to the measurement and evaluation of fiscal policy are particularly relevant for developing countries. On the one hand, the public finances in these countries tend to be more volatile and vulnerable to external shocks. On the other hand, developing countries have a greater exposure to changes in the external perception of their economic performance and therefore require a significant effort to ensure consistency and credibility in the handling of their economies. For many African countries, there is a need to correct excessive deficits, so that confidence in the macroeconomic framework of the African continent is boosted. However, some of the African countries still facing high, or even excessive, deficits are not sufficiently implementing the consolidation measures needed to reach sound budgetary positions.

If institutions are weak, policies are also most likely to be weak. Institutional rules can play an important role in African countries in the achievement of their broad fiscal policy objectives as political economy factors can often undermine well-thought through policies. Fiscal rules can ensure fiscal discipline that contributes to price stability and is conducive to sustained economic growth. Moreover, fiscal policy rules can lead to greater transparency in African countries. Fiscal indicators such as the cyclically adjusted budget balance can also play an important role in raising the transparency of policy actions and increasing the accountability of the authorities.

Automatic stabilisers are likely to be less important in African countries due to structural reasons. The revenue and expenditure to GDP ratios are usually far smaller than in

³⁶ OLS estimation of $d(Bi/Y) = \alpha_i + \beta_{Bi} * d(\log(Y_{it})) + \varepsilon_{it}$ with AR(1) correction where Bi represents the budget balance and Y represents GDP.

advanced countries (see Table 7.6 for selected fiscal aggregates for the ten largest³⁷ African countries). Within the smaller tax base, the share of income-elastic taxes is smaller, while consumption taxes and taxes on international trade are more important. Automatic fiscal stabilisers on the expenditure side of African countries are limited due to the few countries with significant social security spending. Therefore, for automatic stabilisers to play an important role in African countries, the share of income-elastic taxes in the revenue structure must be strengthened and higher priority needs to be given to social security spending. Since automatic fiscal stabilisers may be less powerful in African countries, a greater need exists for discretionary fiscal policy interventions. Fiscal policy rules might be a useful alternative.

Table 7.6 Growth and fiscal averages for African countries, 1970 to 2001

Country	Real GDP Growth	Rev/ GDP	Exp/ GDP	Bal/ GDP	Debt/ GDP	Tax/ total	CPE/ total	SSW/ total
South Africa	2.4	24.3	31.4	-5.0	39.9	91.0	77.5	3.3
Madagascar	0.9	10.2	17.2	-3.3	135.0	89.3	46.2	1.7
Morocco	4.1	25.2	31.2	-6.1	65.3	83.8	61.4	6.5
Tunisia	5.3	30.0	32.7	-3.7	12.7	80.4	66.9	12.4
Guinea	3.5	15.6	24.3	-3.9		82.9	41.5	
Mauritius	6.1	22.3	25.6	-4.2	43.5	88.8	70.8	18.1
Côte d'Ivoire	3.2	18.3	21.0	-1.6	135.0	96.8	57.1	
Zimbabwe	2.2	25.5	31.4	-6.0	52.2	87.2	77.5	5.4
Cameroon	3.5	17.6	18.8	-1.2	15.2	80.9	68,3	5.4
Burkina Faso	2.7	10.2	8.5	-0.1		87.2	79.3	0.8
<i>Average</i>	<i>3.4</i>	<i>19.9</i>	<i>24.2</i>	<i>-3.5</i>	<i>62.4</i>	<i>86.8</i>	<i>64.2</i>	<i>6.7</i>
Source: IMF, GFS CD-ROM (November 2002) and WEO Database (April 2003); and own calculations								

³⁷ The size was determined in terms of GDP in constant US dollar terms.

Cuaresma, Reitschuler and Silgoner (2002) investigated the effect of automatic stabilisers on output growth volatility for a panel of EU member states over the period 1970 to 1999. Their methodology was applied to a panel of the ten largest African countries (reported in Table 7.6) in order to establish whether automatic stabilisers reduce business cycle volatility in Africa. Central government tax revenue, current primary expenditure and total expenditure (each expressed as a ratio of GDP) were used as proxies for automatic stabilisers. The data were divided into 6 sub-periods (1972-1976, 1977-1981, 1982-1986, 1987-1991, 1992-1996 and 1997-2001) to allow for reasonable measures of output growth volatility. The following baseline regression was estimated:

$$GVOL_{it} = \beta(X_{it}) + \mu_{it} \quad i = 1, \dots, 10 \text{ and } t = 1, \dots, 6 \quad (8)$$

where:

GVOL = coefficient of variation of output growth

X = logged ratio of tax, current primary expenditure or total expenditure to GDP

Equation (8) was estimated by the least squares dummy variable (LSDV) method³⁸. Empirical evidence concerning the effectiveness of automatic stabilisers in African countries is mixed, as illustrated in Table 7.7. The results show a significant negative coefficient for the expenditure components (current primary expenditure as well as total expenditure), confirming its smoothing impact on the business cycle. On the other hand, the results suggest an insignificant procyclical response from tax revenue. This can possibly be ascribed to the small share of income-elastic taxes in the tax bases of many of the African countries. The results, however, must be interpreted with caution. The empirical evidence for the negative relationship between government expenditure and output growth fluctuations could also be due to discretionary policy measures. There might also have been additional variables that affect both volatility and budget components (e.g. the unemployment rate, inflation rate, openness of economy, GDP per capita) to the extent that only an indirect link between volatility and budget components

³⁸ See Baltagi (2001) for basic methodology on LSDV estimation.

was measured. Thus, the potential for endogeneity of budget components exists, since economies that display higher volatility may have chosen to expand the size of their governments to stabilise the business cycle, while the possibility of omitted non-linearities in the relationship between government components and output volatility also exists (see Cuaresma, Reitschuler and Silgoner (2002) for more detail).

Table 7.7 Estimation results for the smoothing impact of automatic stabilisers in African countries

Variable	Coefficient	Std. Error	t-Statistic
Tax revenue	8.66	9.70	0.89
Current primary expenditure	-20.41**	6.65	-3.07
Total expenditure	-15.64*	7.39	-2.12

** (*) denotes significance at the 1 (5) per cent level

The lack of adequate fiscal discipline in African countries has reduced the countercyclical role of fiscal policy to the point of rendering it procyclical. If applied flexibly, fiscal rules may be seen as restoring at least a moderate countercyclical role through the operation of automatic fiscal stabilisers. Given the politically induced deficit bias of African governments, appropriate fiscal rules constitute a second-best solution. Expenditure rules in the form of *ex-ante* targets, for example, can play an important role in improving the management of public finances in African countries. Expenditure rules can help countries to improve control on expenditure items that are subject to overruns. Depending on their design, they can also contribute to other policy objectives, such as avoiding a procyclical loosening of fiscal policy in good times (via a discretionary increase in public spending) and improving the quality of the composition of public spending. Even a relatively weak expenditure rule can provide useful guidance and signals to actors involved in the budgetary process. Moreover, a fiscal policy rule can assist other financial policies, especially the utilisation of monetary instruments, in pursuing the stabilisation goal.

Hemming, Kell and Hahfouz (2002:10) argue that economic activity in developing countries is more likely to be influenced by supply shocks and therefore presents fewer opportunities to use fiscal policy for demand management. There are, however, institutional features unique to developing countries that could affect the size of fiscal multipliers. The availability and cost of domestic and external financing are often a major constraint on fiscal policy. In highly indebted developing countries without access to international capital markets, access to financing debt often determines the size of the fiscal deficit. As a result, an increase in the fiscal deficit beyond a level that could be financed within acceptable margins may lead to strong crowding-out effects. The authors also argue that the relatively high marginal propensity to consume in many developing countries tends to increase the size of the multiplier. Finally, the authors maintain that fiscal policy is likely to be harder to implement in developing countries, for reasons such as poor tax administration and expenditure management, governance problems, volatile revenue bases (for example due to heavy reliance on trade taxes), long lags that affect fiscal policy and a greater deficit bias.

7.4 SYNOPSIS

This chapter provided an estimate of the size of automatic fiscal stabilisation in South Africa as measured by the cyclical component of the budget balance during the period 1970 to 2000, as well as the estimation of the cyclically adjusted budget balance as an indicator of the medium-term orientation of fiscal policy that can contribute to more effective fiscal policy implementation and analysis.

The results show that fiscal policies in South Africa exacerbated economic fluctuations in some periods rather than moderating them. During these periods, fiscal contractions occurred during periods of low growth, with fiscal expansions during economic booms. Consequently, these discretionary fiscal policies were frequently procyclical, overriding automatic stabilisers and possibly contributing to economic instability.

Automatic fiscal stabilisers in South Africa work through taxes and unemployment insurance benefit payments. The cyclical fluctuations in revenue are much larger than those of expenditure, due to the small share of unemployment insurance benefit payments in the total public finances. Changes in the budget balance can mostly be ascribed to changes in the structural component over the sample period. The estimates showed that unemployment insurance benefit payments move countercyclically, but that there is a procyclical response from total expenditure and net lending. This destabilising effect from expenditure components partly offset the stabilising effect from revenue components, so that the budget balance only has a small stabilising impact on the economy. Although the cyclical component of the general government budget balance represents only a small part of the total balance, the results illustrate a more prominent role for automatic fiscal stabilisers during the latter half of the sample period.

The trend in the South African general government structural primary balance is similar to that of the total structural balance. The period 1972 to 1984 reflects neutral fiscal policy, 1989 to 1993 expansionary fiscal policy and 1993 to 1999 fiscal consolidation. The improvement in the budget balance since 1993, during a period of slower economic growth, worked against the automatic fiscal stabilisers and could have contributed to the subdued economic growth during this period. Fiscal policy was strongly countercyclical in 1992 and procyclical in 1994 and 1998. Although the policy mix varied a great deal in South Africa over the period 1991 to 2001, it could generally be regarded as conducive for economic growth and macroeconomic stability. There is, however, no evidence that these policies had been explicitly coordinated. In fact, it is more likely that the policies were the outcomes of independent responses to the fiscal and monetary conditions.

The local and provincial budget balances show little cyclical variation over time due to the nature of their role and the composition of their revenue in the South African public finances. While taxes on net income and profits (which have a high income elasticity) constitute the largest part of national government revenue, provincial government revenue is primarily sourced from grants from the national government, while local government revenue is raised by property taxes and user charges for services rendered.

Fiscal policy is likely to be harder to implement in African countries and automatic stabilisers are likely to be less effective due to structural reasons. Therefore a greater need exists for discretionary fiscal policy interventions. Given the politically induced deficit bias of African governments, appropriate fiscal rules may be seen as restoring at least a moderate countercyclical role through the operation of automatic fiscal stabilisers. Depending on their design, they could also contribute towards achieving other policy objectives such as avoiding a procyclical loosening of fiscal policy in good times (via a discretionary increase in public spending) and improving the quality of the composition of public spending. Even a relatively weak expenditure rule can provide useful guidance and signals to actors involved in the budgetary process. Moreover, a fiscal policy rule could support other financial policies, especially the utilisation of monetary instruments, in pursuing stabilisation goals.

CHAPTER 8

SUMMARY, POLICY IMPLICATIONS AND FURTHER SUGGESTIONS

This study has shown that fiscal policy can only be evaluated and adjusted effectively after considering the cyclical aspects of the business cycle. When setting and monitoring fiscal targets, there is a need to take explicit account of the cyclical position of the economy and its effect on the budget. However, most of the discussion on fiscal policy in South Africa deals only with long-term sustainability issues, largely ignoring the effects of the economic cycle. As a result, serious policy mistakes could occur if purely cyclical improvements in the public finances are treated as if they represent structural improvements, or if structural deterioration is interpreted as a cyclical effect. Therefore, when assessing fiscal prospects, it is essential to adjust fiscal indicators for the effects of the economic cycle. Fiscal policy-making and analysis in South Africa could be improved by making use of alternative fiscal indicators, such as the cyclically adjusted budget balance that removes the effects of the business cycle from government revenues and expenditures.

In this study the countercyclical role of South African fiscal policy during the period 1970 to 2000 was analysed. More specifically, it presents theoretical and empirical analysis of the significance of automatic fiscal stabilisers in the South African economy and the calculation of the cyclically adjusted budget balance. Results for South Africa were also compared with six other developing countries, namely Chile, Mexico, Indonesia, India, Mauritius and Romania. Macroeconomic stabilisation and the potential of automatic fiscal stabilisers in the New Partnership for Africa's Development (NEPAD) were briefly touched on.

Fiscal policy could be used as a stabilising instrument to affect economic activity, either through the work of built-in automatic stabilisers, through discretionary tax or expenditure measures or through both. Discretionary fiscal policy should be interpreted as changes in fiscal variables due to a deliberate attempt of government (for example to smooth the business cycle), while automatic (or built-in) stabilisers could be defined as

the reaction of the government budget to economic fluctuations in the absence of any government action.

Many practical economic and political difficulties are encountered in discretionary fiscal stabilisation policy. The combined problems of time lags, crowding-out effects, political constraints, irreversibility, inflexibility, practical problems in measuring and forecasting the state of the economy and determining how much fiscal stimulus is needed at any particular point in time, all present very serious challenges for discretionary fiscal policy to have the desired stabilisation effect. Against this background, most economists have become highly sceptical about the potential benefits of “fine-tuning” the economy. Discretionary fiscal policies are often inappropriate demand management instruments, except in extraordinary circumstances such as where consolidation or fiscal structural reforms are required. Growing awareness of the limitations associated with macroeconomic fine-tuning has led to a worldwide trend towards the adoption of more rule-based institutional frameworks. These frameworks could provide authorities with specific mandates, i.e. clearly identified policy objectives, in order to set proper incentives at the decision-making level and ensure predictability of policy.

The inherently procyclical nature of many revenue categories (due to the dependency of most government revenue sources on current income) and the countercyclical behaviour of some expenditures act as automatic stabilisers. The two most important types of automatic fiscal stabilisers are personal income tax and unemployment insurance benefit payments. Automatic stabilisers help to smooth out fluctuations in the business cycle by automatically moving the budget towards a deficit or higher deficit during a recession and towards a surplus or higher surplus during an expansion. Government balances tend to increase when output is above trend, and decrease when output is relatively low. During an upswing, with growth in income, consumption, output and employment, government revenue will increase due to higher direct and indirect taxes and lower expenditure such as unemployment insurance benefit payments. During a recession, the opposite applies. Increasing government borrowing represents a net increase in domestic demand, with the result that economic downturns are moderated. Conversely, declining

government borrowing contributes towards dampening economic booms. As a result, tax revenue and unemployment-related social security expenditure fluctuate according to the business cycle and the budget balance responds automatically to the cyclical movements of the economy.

Automatic stabilisers are the appropriate way to stabilise output, as they have foreseeable, timely and symmetrical effects, helping economic agents to form correct expectations and enhancing confidence. Because they are not discretionary, automatic fiscal stabilisers are less likely to affect market expectations adversely. They react with an intensity that is adapted to the amount to which economic conditions deviate from what was expected when the budget plans were approved. These features of automatic stabilisers are almost impossible to replicate with discretionary reactions by policy-makers. However, there are drawbacks and limits to automatic fiscal stabilisation as well. Automatic fiscal stabilisers may not work, or may actually increase output variability if there are perverse effects associated with their functioning, such as where fiscal deficits during recessions give rise to increases in interest rates due to public debt risk or sustainability issues. Moreover, automatic stabilisers are useful to stabilise output in the case of temporary shocks, but large automatic stabilisers, in the case of permanent (mainly supply) shocks, may delay the inevitable structural adjustment and, if they are symmetric, imply a stronger response by the monetary authorities. Furthermore, sizeable automatic fiscal stabilisers could delay the adjustment of an economy because a high tax burden and generous social payments reduce incentives to work, invest and to be innovative, and thereby weaken economic activity.

The size of automatic fiscal stabilisers, which varies substantially across countries and over time, depends on many factors. These include, amongst others, the importance of the government sector in the economy, the composition of GDP growth, the tax and expenditure structure, the sensitivity of budget components to the cycle, the distribution of income across individuals, the effectiveness of stabilisation efforts in relation to the openness and structure of the economy, the significance of fiscal restraints, the

relationship between automatic and discretionary stabilisation and the nature of economic shocks that produce the boom or recession.

There is little consensus about the impact of fiscal policy on the economy. The Keynesian view assumes that individuals are short-sighted and credit-constrained and hence respond to variations in their disposable income brought about by fiscal policy on changing consumption. Under these circumstances, the government should actively use a countercyclical fiscal policy to offset demand shocks to the economy. In practice this may mean that the role of discretionary fiscal policy is greater when the economy is confronted by a large demand shock and automatic stabilisers is small. Moreover, the need for discretionary fiscal policy may also arise in special circumstances such as when monetary policy is constrained due to a fixed exchange rate regime or by the zero lower bound on the nominal interest rate. On the other hand, theories on consumer behaviour argue that fiscal policy is ineffective to the extent that temporary increases in the deficit will imply future tax increases, while permanent changes in fiscal policy to stimulate the economy will give rise to persistent deficits and high real interest rates that will crowd out private investment. In practice this means greater emphasis on automatic fiscal stabilisers and less on fiscal fine-tuning. Thus, the extent to which fiscal policy is effective in reality depends on a number of factors, including the instrument used and the wider economic and policy environment.

Tax revenue accounts for the bulk of total consolidated general government revenue in South Africa, while expenditure on goods and services accounts for the largest share of expenditure. Taxes on net income and profits and domestic taxes on goods and services are the most important sources of direct and indirect tax revenue, respectively. Although the role of the provincial governments has become increasingly more important since fiscal 1995/96, the national government plays the most important role in the South African public finances. Social security funds, of which the Unemployment Insurance Fund is the most important, only comprise a small portion of the income and expenditure flows of the consolidated general government.

When South Africa's public finances are compared with that of six other selected developing countries (Chile, Mexico, India, Indonesia, Mauritius and Romania), the results show that South Africa's average revenue to GDP and expenditure to GDP ratios are well above that of the six-country averages. South Africa's deficit to GDP ratio is nearly twice the size of the six-country average. The tax to GDP ratio in South Africa is much higher compared to that of the other developing countries and there are large discrepancies between the different countries with respect to the main sources of tax revenue. The average ratio of South Africa's taxes on net income and profits to GDP are much higher compared to that of the average for the other developing countries, while the ratio of taxes on international trade and transactions and the ratio of social security contributions to GDP are much lower than the six-country averages. South Africa's expenditure on goods and services and total current expenditure as a ratio of GDP are much higher than the average for the six other selected developing countries, while the country's capital expenditure to GDP ratio is much lower. The most striking difference between South Africa and the six other developing countries with regards to government expenditure is the fact that social security and welfare provision in the other developing countries (except for Indonesia) by far exceeds that of South Africa. The analysis of the structure of public finances in South Africa, therefore, suggests that the scope for automatic stabilisation is larger on the revenue side of the government budget, given the prominent role of tax revenue and more specifically taxes on net income and profits, which are highly responsive to economic fluctuations. On the other hand, automatic stabilisation on the expenditure side of the budget is limited due to the small role of cyclically sensitive expenditures, such as unemployment insurance benefits.

This study showed that tax revenue and unemployment insurance benefit payments operate as automatic fiscal stabilisers in South Africa and that the extent of automatic stabilisation could be measured. Given the revenue, expenditure and output projections that are published in the Medium-term Expenditure Framework (MTEF) and the Medium-term budget policy statement, it is also possible to publish estimates of the cyclically adjusted budget balance as an additional indicator next to other current indicators that are used in the policy-making processes. The study therefore argues that

the role and size of automatic fiscal stabilisers in South Africa must be recognised and quantified, their impact on the budget outcome be acknowledged, their effects be accounted for when analysing fiscal trends, and that their role and impact be evaluated against fiscal policy objectives, the structure of the economy and their relation to other macroeconomic policies and objectives. Although the extent of cyclical volatility, the size of government and the responsiveness of tax revenue and unemployment insurance benefits in South Africa create a platform for strong automatic stabilisation, their effects are sometimes countered or reduced due to procyclical discretionary policies, the policy mix, other fiscal policy objectives, a short-term political bias, the openness of the economy and supply-side shocks.

The timing and accuracy of past discretionary fiscal stabilisation policies in South Africa could have been adversely influenced due to the absence of any measure of the extent and role of automatic stabilisers in South Africa. The lack of measures of automatic stabilisation and the inadequate adjustment of the budget balance for economic cycles also made it difficult for the central bank to distinguish between the discretionary and non-discretionary components of fiscal policy, limiting its ability to assess fiscal trends and its impact on output and inflation and therefore to determine the appropriate monetary response. South Africa's ignorance with respect to the working and extent of automatic stabilisation can therefore be regarded as a major defect in previous budgetary and decision-making processes.

The results show that the cyclical fluctuations in revenue are much larger than those of expenditure, due to the small share of unemployment insurance benefit payments in the total public finances. Direct taxes have a larger volatility and are more sensitive to changes in GDP compared to indirect taxes. Moreover, the cyclical component of direct taxes is more than double the size of that of the cyclical component of indirect taxes. The estimates showed that unemployment insurance benefit payments move countercyclically, but that there is a procyclical response from other expenditure components. Results showed that the impact of the Unemployment Insurance Fund as an automatic fiscal stabiliser could be expected to be larger with the new UI legislation, but

that the overall impact would still be much smaller compared to the role of tax revenue in general. The destabilising effect of expenditure components partially offset the stabilising effect of revenue components, so that the budget balance has only a small stabilising impact on the economy. Although the cyclical component of the general government budget balance represents only a small part of the total balance, the results illustrate a more prominent role for automatic fiscal stabilisers during the latter half of the sample period, particularly since the 1990s.

The impact of the output gap on discretionary fiscal policy (measured by the structural component of the general government budget balance) and automatic fiscal stabilisers (measured by the cyclical component of the general government budget balance) varies significantly according to the chosen sample period. The general government budget balance moved procyclically over the whole sample period, but regressions over two sub-samples (1970-1985 and 1986-2000) indicate that it moved countercyclically during the first half of the sample period and strongly procyclically during the latter half of the sample period. The countercyclical behaviour of the budget balance during the first half of the sample period was the result of procyclical discretionary fiscal policy, which worked against the automatic fiscal stabilisers. The size of South Africa's cyclical tax revenue is more or less in line with five of the six selected developing countries and the trend in cyclical tax revenue for most of the countries (including South Africa) is broadly similar to their respective output gaps.

Compared to advanced economies, the role of automatic fiscal stabilisers in South Africa is relatively small, with discretionary fiscal policy interventions playing a dominant role. The analysis has shown that discretionary fiscal policies were frequently procyclical, overriding automatic fiscal stabilisers and possibly contributing to economic instability. The results show that fiscal policies in South Africa exacerbated economic fluctuations in some periods rather than moderating them. During these periods, fiscal contractions took place in periods of low growth, with fiscal expansions occurring during economic booms. Although the South African government was successful in its objective of decreasing its direct involvement in the economy – as reflected in the downward trend in the budget

deficit as a ratio of GDP since fiscal 1993/94 – these efforts had a destabilising impact on the economy as the consolidation efforts coincided with a period marked by negative and small positive output gaps.

The period 1972 to 1984 reflects neutral fiscal policy in South Africa, 1989 to 1993 expansionary fiscal policy and 1993 to 1999 fiscal consolidation. During the 1990s, fiscal policy was strongly countercyclical in 1992 and procyclical in 1994 and 1998. The policy mix (the combination of monetary and fiscal policies in place) varied a great deal in South Africa over the period 1991 to 2001. Overall, the policy mix seems to have contributed towards providing conditions for economic growth and macroeconomic stability. There is, however, no evidence that these policies were explicitly coordinated; it is more likely that the policies were the outcome of *ad hoc* responses to changes in fiscal and monetary conditions.

The national government balance shows the largest cyclical variation over time and tracks movements in the output gap more closely compared with the local and provincial government balances. While taxes on net income and profits (which have a high income elasticity) constitute the largest part of national government revenue, provincial government revenue is primarily sourced by grants from national government, while local government revenue is raised through property taxes and user charges for services rendered. The scope for automatic stabilisation at the provincial and local government level in South Africa is, therefore, very limited due to the nature of their role – and thus the composition of their revenue. The possibilities of the provincial and local governments in South Africa to run countercyclical policies are also limited given the existence of borrowing and budgeting restrictions. Due to the procyclical nature of the provincial and local government balances, there are good reasons to shield the income of these governments to some extent from cyclical fluctuations by assigning tax bases to them that are sufficiently stable over the cycle and by extending grants to them that correct for cyclical variability in own revenue. The national government is the appropriate level of government that should be assigned taxes that, among other things, have a higher income elasticity.

Automatic stabilisers are likely to be less important in African countries due to structural reasons. The revenue and expenditure to GDP ratios are usually far smaller compared to advanced countries. Within the smaller tax base, the share of income-elastic taxes is smaller, while consumption taxes and taxes on international trade are more important. Furthermore, automatic fiscal stabilisers on the expenditure side of African countries are limited due to the few countries that have significant social security spending. Moreover, in these relatively open economies fiscal multipliers may be small due to a high degree of external leakage. Under these circumstances, fiscal expansion to stimulate domestic demand is likely to worsen the current account balance, with adverse implications for external sustainability. Expansionary fiscal policies may also threaten long-run debt sustainability and raise inflation expectations that could adversely affect the monetary authorities' ability to control inflation. Moreover, improving automatic fiscal stabilisers poses an important challenge, as it would imply introducing additional welfare and unemployment programmes, which countries may be unable to afford without raising their fiscal deficits. In addition, higher unemployment insurance benefit payments might also have adverse effects on work incentives due to the extent of unemployment in this region.

Since automatic fiscal stabilisers seem to be less powerful in African countries, one could expect that a greater need exists for discretionary fiscal policy interventions. Discretionary fiscal policy, however, is likely to be harder to implement in African countries, for reasons such as poor tax administration and expenditure management, governance problems, volatile revenue bases (for example due to heavy reliance on trade taxes), long lags affecting fiscal policy and a greater deficit bias. It might also be hard to compute a satisfactory measure of the cyclically adjusted budget balance in African countries, given data constraints, imprecise knowledge about tax and expenditure elasticities and the fact that estimates of potential output are generally also believed to be less precise.

Empirical evidence concerning the effectiveness of automatic stabilisers in African countries is mixed. The results show a significant negative coefficient for the expenditure components (current primary expenditure as well as total expenditure), confirming its smoothing impact on the business cycle. On the other hand, the results suggest an insignificant procyclical response from tax revenue. This could possibly be ascribed to the small share of income-elastic taxes in the tax bases of many of the African countries.

The lack of adequate fiscal discipline in African countries has reduced the countercyclical role of fiscal policy to the point of rendering it procyclical. If applied flexibly, fiscal rules may be seen as restoring at least a moderate countercyclical role through the operation of automatic fiscal stabilisers. Expenditure rules in the form of *ex-ante* targets, for example, could play an important role in improving the management of public finances in African countries. These rules could help countries to better control expenditure items that are subject to overruns. Depending on their design, they could also contribute to other policy objectives, such as avoiding a procyclical loosening of fiscal policy in good times (via a discretionary increase in public spending) and improving the quality of the composition of public spending. Even a relatively weak expenditure rule could provide useful guidance and signals to actors involved in the budgetary process. Moreover, a fiscal policy rule could assist other financial policies, especially the utilisation of monetary instruments, in pursuing the stabilisation goal. Although automatic fiscal stabilisers are likely to be less important in African countries due to structural reasons, recognising the impact of the business cycle on the public finances, vigilance against the dangers of inappropriate discretionary policy and the implementation of suitable fiscal rules may make a valuable contribution to Africa's development.

Democratic budgetary processes tend to be biased towards short-term employment and output goals. To offset this political bias, it is necessary to focus fiscal policy on medium-term goals and commit the political authorities to formal institutional arrangements such as a deficit or debt rule. While in theory a discretionary policy can

achieve the same outcomes as fiscal rules and should in fact be superior because it allows greater flexibility, the practical experience is that electoral pressure may lead politicians to adopt a short time horizon. This could result in less disciplined and even unsustainable policies over time. A cyclically adjusted general government balance that is close to balance or in surplus, for example, will anchor long-term fiscal expectations and allow automatic stabilisers to play an effective countercyclical role. It will also broaden the planning horizon of the public institutions and thereby avoid the potential procyclical behaviour in the event of a budget adjustment, boost government saving and investment and maintain fiscal sustainability in the light of the government's contingent liabilities. Market confidence in South Africa's fiscal soundness will also be strengthened following the achievement of the targeted balance.

South Africa has no formal fiscal rules, but the budget-making process implicitly involves some controls on the spending and borrowing decisions as they are part of an agreed medium-term plan in the form of the Medium-term Expenditure Framework (MTEF) – the three-year spending plans of national and provincial governments. The medium-term horizon of South African fiscal policy gave fiscal policy some discipline without making it rule-based. Markets could easily detect any deviation from medium-term targets. South Africa's commitment to maintain medium-term fiscal sustainability through the MTEF enhanced its fiscal credibility. While the MTEF has played an important role in anchoring long-term fiscal expectations and helped to broaden the planning horizon of public institutions to the extent that the potential procyclical expenditure behaviour in the event of a budget adjustment can be avoided, more emphasis must be placed on automatic fiscal stabilisers so that they can be allowed to play an effective countercyclical role. Fiscal policy in South Africa should not only ensure the sustainability of the public finances over the medium to long term, but also allow the full operation of automatic fiscal stabilisers in the short term, enabling fiscal policy to support monetary policy in smoothing economic fluctuations. Prudent discretionary fiscal policy, conducted symmetrically over the economic cycle, could provide further support to monetary policy if necessary.

This study, however, highlights the need for continued caution in the use of discretionary fiscal policy, which, because of political constraints, tends to be irreversible, leading to a ratcheting effect of public spending. Discretionary fiscal policy should explicitly take into account the cyclical position of the economy and its effect on the government budget. It is proposed that greater emphasis be placed on making automatic fiscal stabilisers more effective in South Africa. Increasing the fiscal stabilisation role of government by strengthening the automatic stabilisers has the advantage that many of the difficulties encountered in using discretionary fiscal policy for stabilisation purposes do not apply to the automatic stabilisers. However, as already pointed out, many of the ways of strengthening the automatic stabilisers, such as by increasing the size of the government sector or the share of cyclically sensitive budget components, could have a negative impact on economic efficiency, because a higher tax burden or generous unemployment insurance benefits, for example, could reduce the incentive to work, invest and innovate. It is therefore not clear what the desired degree of automatic stabilisation would be for South Africa. A particular concern in the South African context with regard to automatic stabilisation is the downward trend in the contribution of direct taxes to the total cyclical component of the budget balance. This trend is likely to intensify given the significant personal income tax relief that has been granted since 2000 and further planned relief that might follow in the future. The South African government's efforts to bring down the tax burden in the pursuit of better efficiency and more flexible markets would therefore come at a cost in terms of less demand smoothing via the automatic fiscal stabilisers.

Automatic fiscal stabilisers in South Africa could play an important role as a complement to countercyclical monetary policy, since monetary policy could benefit from the predictable and automatic responses from automatic fiscal stabilisers. An inadequate adjustment of budget balances for economic cycles could adversely affect the central bank's estimates of the effects of fiscal policy. Thus, knowledge about the cyclical budget balance may provide important information for the conduct of monetary policy. The South African Reserve Bank should therefore use the cyclically adjusted budget

balance calculated in this study as an alternative measure of fiscal stance that is relevant to monetary policy.

The Washington Consensus emphasised the importance of maintaining prudent macroeconomic policies and balances. Monetary and fiscal policy must ensure macroeconomic stability to generate domestic and international confidence in the South African economy. There is as yet no consensus about what should be the appropriate role of fiscal policy over the business cycle. In the short run, the possible role that fiscal policy could play in stabilising output may occur through the operation of automatic stabilisers and/or discretionary fiscal policy, and the appropriateness and feasibility of either may vary according to the individual country circumstances. South Africa must therefore adapt an appropriate fiscal policy stance, taking the country's particular circumstances into account. Both fiscal discipline and flexibility are important. In fact, fiscal discipline and flexibility are complementary and interdependent features of budgetary behaviour. Fiscal discipline will allow the credibility of monetary policy to strengthen, while fiscal flexibility is required to deal with country-specific and other shocks. Since fiscal discipline is more or less confined in the MTEF framework, it is in the latter case where automatic fiscal stabilisers can play an important role.

Alternative definitions of the budget balance are unavoidable given the scope and operations of the public sector. There is no ideal measure of the budget balance, but rather a set of different budget balances that could be considered as more appropriate, each applicable to a specific circumstance. Despite some limitations, budget measures that separate out cyclical factors are useful for budget planning and analysis as they provide estimates of the extent to which changes in the budget are caused by normal movements of the business cycle and thus are likely to prove temporary. This study therefore proposes that the cyclically adjusted budget balance be used as an input for budgetary planning and analysis.

In the light of South Africa's weak automatic fiscal stabilisers, supply shocks, the openness of the economy, poor government performance with respect to discretionary

fiscal stabilisation policies and the country's historical context, in particular a deficit bias and rapidly rising debt levels and unsustainable deficits during the early 1990s, the country's experience may warrant a greater interest in fiscal policy rules. A fiscal policy rule such as a balanced budget rule can enhance South Africa's credibility due to a lasting commitment to fiscal discipline. Clear policy guidelines in the form of rules can provide a basis for systematic policy, reducing the element of discretion and ensuring that fiscal policy responses can operate in a transparent, credible symmetric and timely manner. Such a budgetary target should be assessed considering the cyclical position of the economy and should therefore be in cyclically adjusted terms. A close to balance or in surplus position will also facilitate the stabilisation objective of government by letting automatic fiscal stabilisers operate freely. In addition, when the extent of automatic stabilisation is too weak, discretionary fiscal policy, which takes account of the cyclical position of the economy and its effect on the government budget, could be allowed to operate symmetrically around the target.

However, further consolidation efforts that are needed to achieve a close to balance or surplus position might compromise the stabilising role of automatic stabilisers and it would make it difficult for South Africa to increase much needed social expenditure and to make important public infrastructure investments. Moreover, although rules seem attractive and straightforward to contain the spending and borrowing bias of profligate governments, it is by no means clear what institutional design and multi-annual budgetary targets are needed for it to be effective. Imposing a tight multi-annual framework may be dysfunctional for the stabilising role of public finances in South Africa to the extent that this should be based on discretionary policy measures.

The main contribution of the findings of this study for the conduct of fiscal policy in South Africa is therefore that the impact of automatic fiscal stabilisers on the budget outcome must be acknowledged and that these effects must be accounted for when analysing fiscal trends. An understanding of automatic stabilisation and the calculation, utilisation and publication of cyclically adjusted budget balance indicators by government and the South African Reserve Bank will enhance the quality and efficiency of decision-

making processes and policies in South Africa. The government should also carefully consider the impact that proposed changes in the composition of tax revenue and expenditure, intergovernmental fiscal relations, Unemployment Insurance legislation and other fiscal policy objectives might have on the extent of stabilisation provided by automatic fiscal stabilisers. Budget objectives must be clear and verifiable, taking account of underlying economic conditions and the effect of the economic cycle on the budget position has to be taken into account when assessing compliance with these budgetary commitments, and in particular, the adjustment path to a specific target. The institutional arrangements for fiscal policy in South Africa should be developed to ensure the clear identification of stabilisation policy from other policy objectives, and to ensure that discretionary fiscal policies operate symmetrically, minimise lags and enhances transparency. Hence, an understanding of the scale of automatic stabilisation and ways of evaluating targets is important when discussing fiscal policy in South Africa.

This study touched on several topics that deserve further investigation. The accuracy of the estimates depends on the underlying assumptions. Thus, ample scope exists for improving the current estimates of the budget elasticities and the level of potential output. Potential output estimates could be improved by means of alternative approaches, such as a production function approach, while allowing the elasticity estimates to vary over the sample period could enhance elasticity measures. The possibility of non-linear relationships in the working of automatic fiscal stabilisers, the incorporation of supply-side considerations, estimation within a dynamic framework and simulations of the effectiveness of automatic fiscal stabilisers in response to different shocks might also provide further useful insight into the working of automatic fiscal stabilisers in South Africa. Finally, further studies could also allow for a more refined assessment of the impact of the business cycle on expenditure and revenue items that are currently not cyclically adjusted.

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