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:

$$b^{**} = b - b^{*} \tag{4}$$

$$b^{*} = \frac{\sum_i T_i^{*} - G^{*} + X}{Y^{*}} \tag{5}$$

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 ith 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:

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

where:

T_i = actual tax revenue for the ith category of tax

G = actual unemployment insurance benefit payments

Y = level of actual output

α_i = elasticity of ith 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 7.1[26] 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:

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

[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 output[27]						
Direct taxes	**Indirect taxes**	**UI benefit payments**	**Total revenue and grants**	**Total expenditure and net lending**	**Budget balance**	**X[28]**
0.3	0.19	-0.47	0.26	-0.3	0.38	0.26
Elasticity of budget components with respect to output growth[29]						
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 Bi 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(Bi/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 procyclical[30]. 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 sensitivity[31] 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 gap[32]

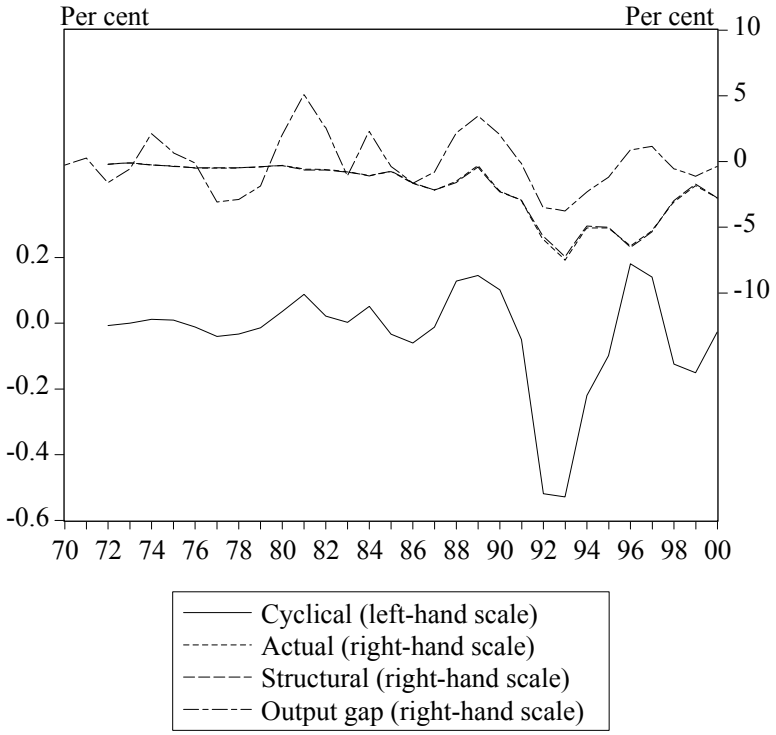


Figure 7.2 illustrates the effect of a unitary elasticity assumption of direct and indirect tax revenue with respect to output growth on the cyclically adjusted budget balance. The maximum effect of 1,3 per cent of potential output was recorded in 1993. On average, a unitary direct and indirect tax elasticity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

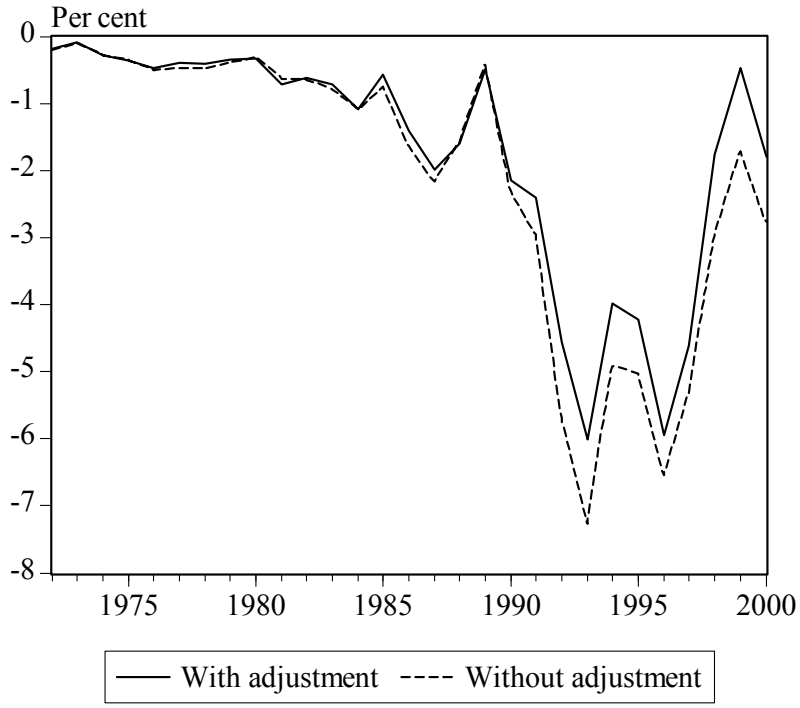
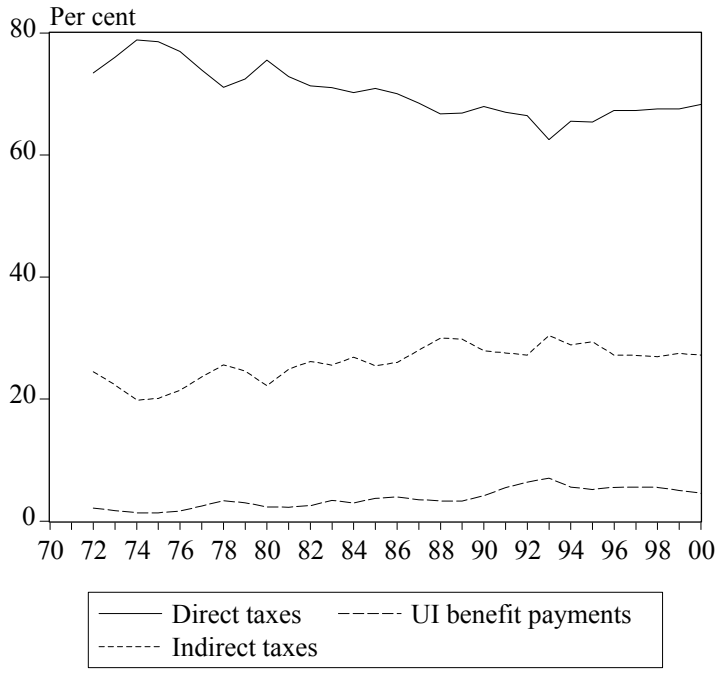


Figure 7.3 shows that cyclical fluctuations in revenue are much larger than those of expenditure. The largest automatic stabilising effect arises from direct taxes. The small stabilising effect of unemployment insurance benefit payments can be ascribed to its small share in the total public finances[33]. 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

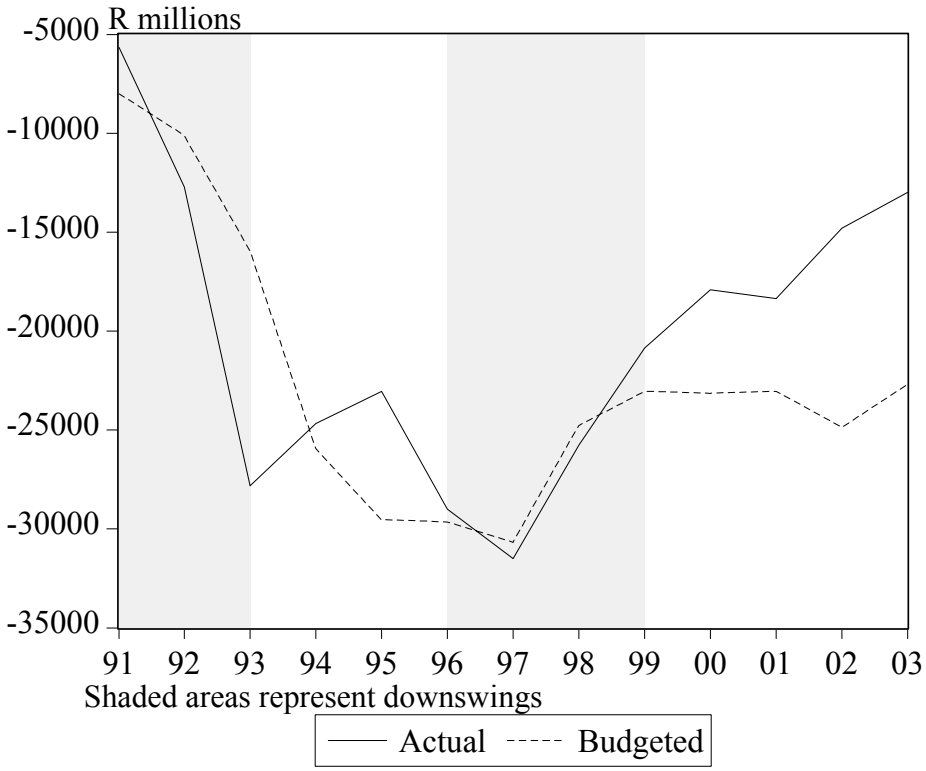


Table 7.4 Difference between budgeted and actual budget components

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

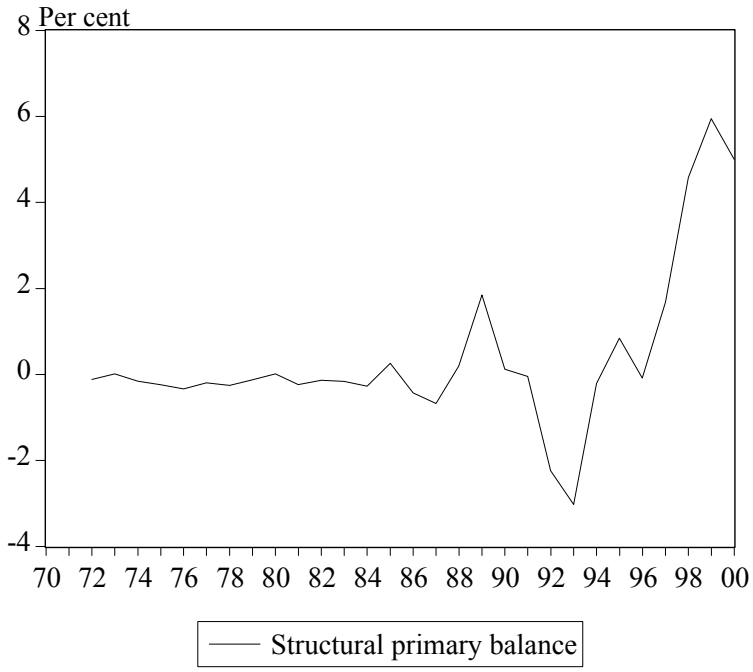
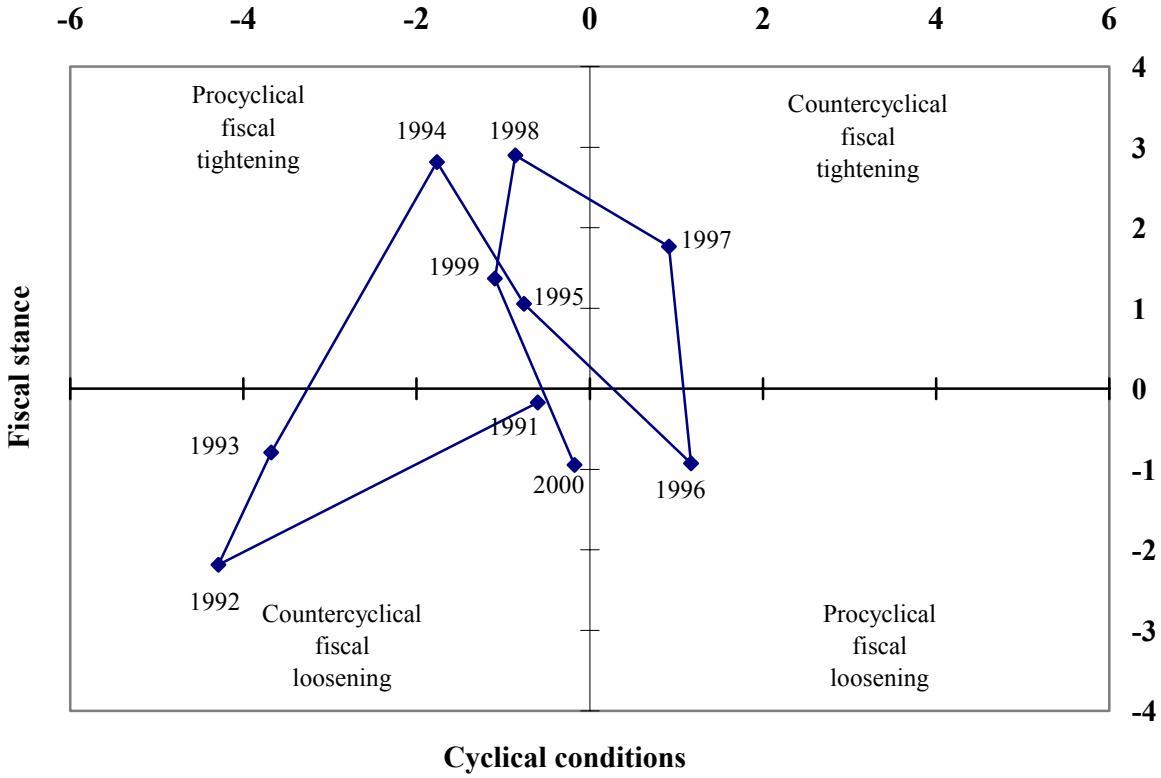


Figure 7.6 examines the fiscal stance (proxied by the change in the cyclically adjusted primary balance) in relation to cyclical conditions (proxied by the output gap). When the change is positive (negative), the fiscal stance is said to be restrictive (expansionary). A balanced budget over the economic 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 rates[34]) 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

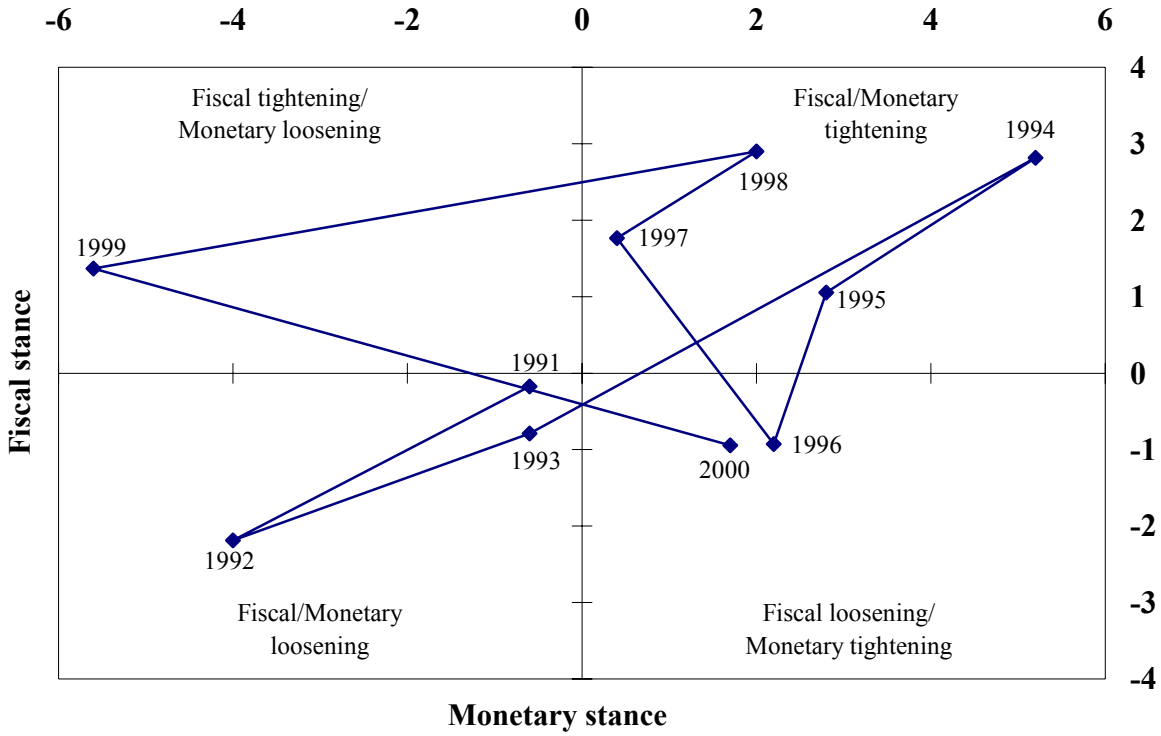


Figure 7.8 illustrates the national, provincial and local government budget balances against the output gap over the period fiscal 1972/73 to fiscal 2000/2001. The national government balance shows the largest cyclical variation over time and tracks movements in the output gap more closely compared to 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

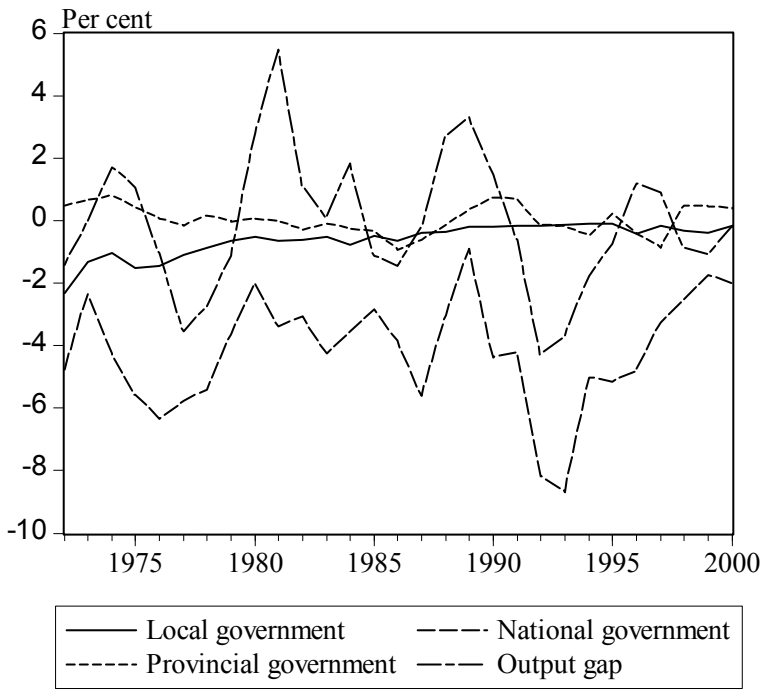


Table 7.5 Correlation coefficients and elasticities of national, provincial and local government balances

	National	Provincial	Local
Correlation coefficient between the cyclical component of balance and output[35]	0.5	-0.0	-0.1
Elasticity of budget balance with respect to output growth[36]	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

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[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 largest[37] 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
Average	*3.4*	*19.9*	*24.2*	*-3.5*	*62.4*	*86.8*	*64.2*	*6.7*

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:

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

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) method[38]. 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.