

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.