

IV. THE SIZE AND ROLE OF AUTOMATIC FISCAL STABILISERS

Introduction

Many components of government budgets are affected by the macroeconomic situation in ways that operate to smooth the business cycle, *i.e.* they act as “automatic stabilisers”. For example, in a recession fewer taxes are collected, which operates to support private incomes and damps the adverse movements in aggregate demand. Conversely, during a boom more taxes are collected, counteracting the expansion in aggregate demand. This stabilising property is evidently stronger if the tax system is more progressive. Another automatic fiscal stabiliser is the unemployment insurance system: in a downswing the growing payment of unemployment benefits supports demand and *vice versa* in an upswing.

Automatic fiscal stabilisers may smooth the business cycle...

The impact of automatic fiscal stabilisers may 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 help to stabilise variations in economic activity. Similarly, “permanent income” theories of consumption behaviour suggest that consumer spending responds only slowly to income fluctuations, which would tend to make private saving behaviour stabilising.¹ Reactions in financial markets and of monetary conditions to cyclical developments should also reinforce the above stabilisation mechanisms.² In particular, the exchange rate, and hence international price competitiveness, may respond in a way that provides incentives for further adjustment in international trade flows. Finally, cyclical variations in labour productivity prevent sharp swings in the demand for labour and thus help to stabilise unemployment.

... and may be reinforced by other stabilising mechanisms...

Although by damping the business cycle automatic fiscal stabilisers may help to reduce the long-lasting economic damage associated with large underutilised resources, they also entail risks for the economy. One relates to the importance of allowing stabilisers to operate symmetrically over the business cycle. If governments allow automatic fiscal stabilisers to work fully in a downswing but fail to resist the temptation to spend cyclical revenue increases during an upswing, the stabilisers may lead to a bias toward weak underlying (or “structural”) budget positions. The result may be rises in public indebtedness during periods of cyclical weakness that are not subsequently reversed when activity recovers. This, in turn, could lead to higher interest rates as well as requiring higher taxes (or spending reductions) to finance debt servicing. Unstable “debt dynamics” working to increase debt-GDP ratios over time, due to real interest rates that exceed economic growth rates, may aggravate this problem. A second

... but also entail risks

1. On the other hand, saving behaviour can be destabilising, when a slowing economy leads to higher saving to build up reserves as a precaution against weaker earnings prospects and job security. Capital gains and losses on real and financial assets may also lead to destabilising movements in private saving.
2. Estimates for the United States suggest that stabilisation through financial markets’ reactions offset as much as 60 per cent of the cyclical variations in output, see Asdrubali *et al.* (1996).

risk arises from the fact that automatic fiscal stabilisers respond to structural changes in the economic situation as well as to cyclical developments. Consequently, if the economy's growth potential declines, and this is not appreciated by the government in a timely fashion, the operation of automatic fiscal stabilisers is likely to undermine public finance positions that might otherwise have been sound. Finally, automatic fiscal stabilisation results from the operation of tax and benefit systems that primarily serve other objectives such as income security and redistribution. These systems may delay necessary adjustment in the wake of a recession, thus contributing to poor economic performance.

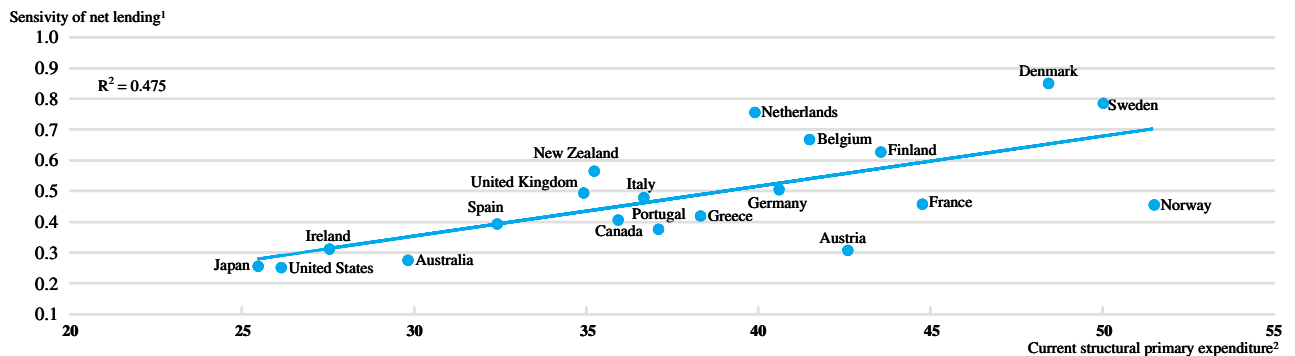
Against this backdrop this chapter assesses the size and role of automatic fiscal stabilisers in the 1990s and beyond. The next section below provides estimates of the size of automatic fiscal stabilisers as measured by the cyclical component of the budget balance over the past decade. The following sections focus on the impact of automatic fiscal stabilisers on the business cycle and on longer-run economic performance.

How large are automatic fiscal stabilisers?

The size of automatic stabilisers depends on the budget's sensitivity to the cycle...

The counter-cyclical demand impulse stemming from automatic fiscal stabilisers depends on the sensitivity of government net lending, as a share of GDP, to cyclical variations in output. The appendix describes the analytical framework that has been developed by the OECD to measure this sensitivity, as well as the key parameters and estimates of this sensitivity for most OECD countries. The most important factor determining the cyclical sensitivity of the fiscal position is the size of the general government sector. For the most part, the larger the share of government expenditure in domestic output, the greater is the sensitivity of the fiscal position to fluctuations in economic activity (Figure IV.1). The tax structure also has a significant impact on the size of automatic stabilisers: the higher the taxation of cyclically sensitive tax bases, the more the tax take will vary with the business cycle and hence the greater will be the cyclical sensitivity of the fiscal position. The progressivity of

Figure IV.1. Cyclical sensitivity of the fiscal position and government size, 1999



1. Change in net lending as a percentage of GDP for a 1 percentage point change in the output gap.
2. Per cent of potential GDP.

taxes, the generosity of unemployment benefits and the cyclical sensitivity of various tax bases and unemployment, finally, are other significant factors in determining the cyclical sensitivity of the fiscal position.

The size of the automatic fiscal stabilisers, as measured by the cyclical component of the fiscal balance as a share of GDP, varies over time with the cyclical position of the economy, *i.e.* the output gap. Accordingly, the cyclical component is estimated to have peaked in the late 1980s boom at 0.6, 0.4 and 1.2 per cent of GDP in the United States, Japan and the euro area, respectively (Table IV.1). Conversely, the early 1990s recession prompted the cyclical component of these economies' fiscal balances to turn negative, and hence stimulatory, by roughly the same amounts. After the early 1990s recession, cyclical components diverged across the OECD area, reflecting a de-synchronisation of business cycles. In the United States the cyclical component has now returned to its late 1980s peak, whereas it has remained negative in the euro area and Japan throughout the 1990s. Not surprisingly, economies where activity has been volatile and government sectors are large display the largest cyclical fluctuations in budget balances. Finland and Sweden are the most striking examples in this regard, although at least part of the volatility registered in these countries reflects a series of one-off, rather than cyclical, shocks.

... and on the size of cyclical fluctuations

Table IV.1. Cyclical component of general government balance^a

Surplus (+) or deficit (-) as a per cent of GDP

	Cyclical peak			Subsequent trough			Current situation		
	Year	Output gap	Cyclical component	Year	Output gap	Cyclical component	Year	Output gap	Cyclical component
United States	1989	2.0	0.6	1991	-1.8	-0.6	1999	2.5	0.6
Japan	1991	3.1	0.4	1995	-2.3	-0.5	1999	-3.5	-0.9
Germany	1990	2.8	1.3	1993	-1.0	-0.5	1999	-1.7	-0.9
France	1990	1.2	0.5	1993	-2.3	-1.1	1999	-0.7	-0.3
Italy	1989	1.9	0.9	1993	-3.2	-1.7	1999	-3.2	-1.5
United Kingdom	1988	5.6	2.8	1992	-2.8	-1.6	1999	0.7	0.4
Canada	1988	4.0	1.7	1992	-4.6	-2.3	1999	0.1	0.0
Australia	1989	2.1	0.6	1992	-2.8	-0.9	1999	1.2	0.3
Austria	1990	2.7	0.8	1993	-1.5	-0.5	1999	0.3	0.1
Belgium	1990	2.0	1.3	1993	-2.9	-2.1	1999	-1.2	-0.8
Denmark	1986	3.0	2.6	1993	-4.7	-4.1	1999	0.1	0.1
Finland	1989	5.9	3.4	1993	-9.2	-7.2	1999	0.4	0.3
Greece	1989	2.9	1.3	1994	-2.7	-1.2	1999	-0.6	-0.2
Ireland	1990	4.6	1.8	1994	-4.0	-1.6	1999	5.0	1.6
Netherlands	1990	1.7	1.5	1993	-1.1	-1.0	1999	1.4	1.1
New Zealand	1986	1.9	1.3	1992	-5.2	-3.2	1999	-1.6	-0.9
Norway (mainland)	1986	2.7	1.6	1990	-4.6	-3.1	1999	1.4	0.6
Portugal	1990	3.4	1.2	1994	-1.8	-0.7	1999	-0.1	0.0
Spain	1990	4.7	1.9	1996	-2.0	-0.8	1999	0.2	0.1
Sweden	1989	4.4	3.4	1993	-5.9	-5.4	1999	-0.2	-0.1
Euro area average	1990	2.4	1.2	1993	-1.9	-1.0	1999	-1.1	-0.5
OECD average ^b	1989	1.8	0.9	1993	-1.8	-0.5	1999	0.1	0.0

a) The cyclical component is calculated by subtracting the structural component, as a per cent of potential GDP, from the actual balance, as a per cent of GDP. The structural component in turn is calculated from the cyclically-adjusted tax revenues and government expenditures, based on the ratio of potential output to actual output and assumed built-in elasticities (see Appendix).

b) Excluding Czech Republic, Hungary, Iceland, Korea, Mexico, Poland, Switzerland and Turkey.

Source: OECD.

What impact do automatic fiscal stabilisers have on the economy?

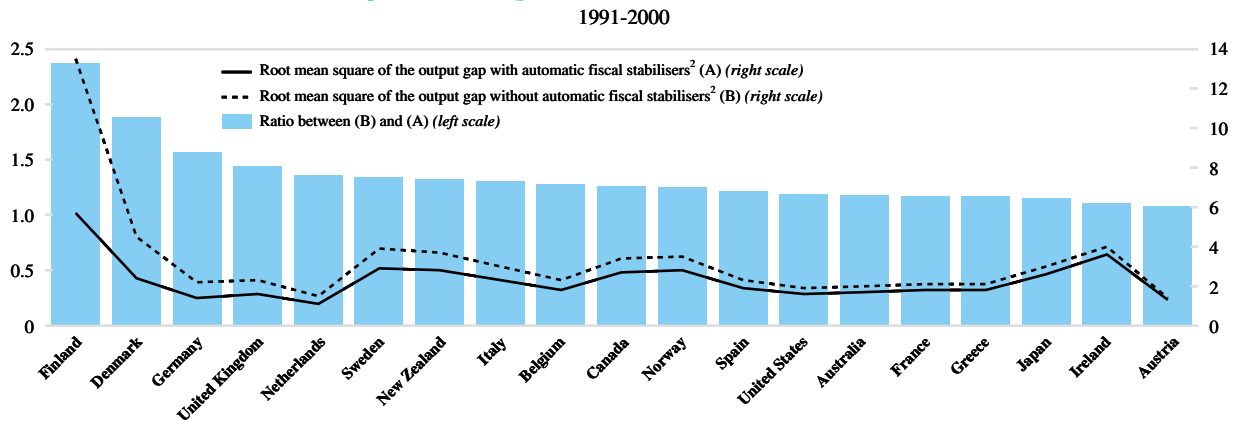
Automatic fiscal stabilisers have generally reduced cyclical volatility...

A change in cyclically sensitive government spending (mainly unemployment benefits) or taxes affects spending in the economy mainly through its impact on disposable income, and hence household consumption. Simulations with the OECD's INTERLINK model, in which fiscal stabilisers have been "switched off" by setting tax and public spending flows to their structural levels, suggest that over the 1990s the automatic fiscal stabilisers have worked to damp the cyclical fluctuations in economic activity by roughly a quarter on average (Figure IV.2). However, there is considerable cross-country variation, in part reflecting the relative openness of economies and differences in monetary policy responsiveness.³ In particular, Finland and Denmark provide clear examples where automatic fiscal stabilisers are essential: without them, output volatility in the 1990s would have been twice as high.⁴

... but in some countries unsustainable fiscal positions forced governments to over-ride automatic stabilisers

There are important qualifications to these results. First, where fiscal positions threatened to become unsustainable, even if this was due to cyclical weakness, business and financial market confidence deteriorated in a number of countries. Therefore risk premia in real long-term interest rates rose,⁵ which had a negative

Figure IV.2. Impact of automatic fiscal stabilisers¹



1. Unchanged nominal exchange rates for all countries and a Taylor rule for interest rates for all countries except France, Austria, Belgium, Denmark, the Netherlands and Spain, where interest rates were kept unchanged.

2. Defined as $\sqrt{\frac{1}{9} \sum_{t=1991}^{2000} \text{gap}_t^2}$

where $\text{gap}_t = (y - y^*)/y^*$, y = GDP and y^* = potential GDP.

- Monetary policy is assumed to have responded to economic developments in much the same way as it has usually behaved historically, *i.e.* leaning against the business cycle to some extent. In practical terms this has been approximated by a "Taylor rule", which implies that interest rates are raised if either inflation or the output gap rise above their baseline levels, in all countries except for those (other than Germany) that participated in the European Exchange Rate Mechanism throughout the 1990s until the start of monetary union and were least affected by the turbulence of the early and mid-1990s (*i.e.* France, Austria, Belgium, Denmark, the Netherlands and Spain). For the latter group of countries, nominal interest rates were kept constant. Nominal exchange rates were held fixed and the simulations run on a country-by-country basis, which means that international linkages were switched off.
- The ranking of countries with regard to the stabilising impact of automatic fiscal stabilisers reported in Figure IV.3 is broadly in line with other studies, but some studies report somewhat higher levels of stabilisation for the European countries; see for example Buti and Sapir (1998).
- Orr *et al.* (1995).

influence on economic activity. When this occurs, the negative effect on private spending operates to diminish or even to reverse the supportive effects of automatic fiscal stabilisers. Such confidence effects are not incorporated in INTERLINK and, therefore, not reflected in the results reported in Figure IV.2. When financial markets respond to rising budget deficits this way, there is little alternative to correcting the fiscal position even if this means overriding the automatic stabilisers. Several cases have been reported where such policy responses helped to reverse increases in long-term interest rates and contributed to a brisk recovery, notably in Finland, Denmark, Ireland and Sweden.⁶

Second, the model simulations may also understate the extent of “non-Keynesian” responses to fiscal automatic stimulus, by which is meant an increase in household saving rates in reaction to deteriorating fiscal balances. If this occurs, the demand impetus stemming from the fiscal automatic stabilisers may be smaller than expected or even negative. Such “perverse” savings reactions are all the more likely if public debt is already high, since the private sector may fear tax increases further down the road to offset a debt explosion.⁷ In Europe, for instance, the intense public debates prior to the ratification of the Maastricht Treaty have made the public well aware of fiscal issues, and may thus have prompted such forward-looking saving behaviour.⁸ This could happen again if, for example, the public deficit approaches the 3 per cent of GDP benchmark in a future recession. Unfortunately, while forward-looking saving behaviour invalidates the impact of fiscal automatic stabilisers on economic activity, the adverse impact on government borrowing remains.

The simulations described above treat discretionary fiscal policy adjustments as if they were not influenced either by the operation of automatic stabilisers or by the situation in the economy. However, the overall degree of fiscal stabilisation reflects both the operation of the stabilisers themselves and their influence on, and interaction with, discretionary policies. 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. Table IV.2 reports both the behaviour of fiscal policy and the impact of automatic stabilisers on budget balances over the past decade. It suggests that in the early 1990s recession nine countries reinforced the automatic fiscal stabilisers through an easy stance of fiscal policy (United States, Japan, France, United Kingdom, Canada, Australia, Austria, Finland and Sweden) while other countries offset the working of automatic fiscal stabilisers by adopting a tight fiscal stance. As a result, on average the fiscal stance in the OECD area, as measured by the change in the structural primary balance, was neutral in the recession. With the exceptions of Japan and Norway, all countries reverted to or maintained a tight fiscal stance during the remainder of the decade.

A scenario simulated with INTERLINK in which a neutral fiscal stance is assumed for the 1990s suggests that the use of discretionary fiscal policy on average slashed the fluctuations in economic activity during the decade by half (Table IV.3). Interestingly, the United States obtained this result while achieving a better fiscal position than it otherwise would have realised. Discretionary fiscal policy thus acted as a powerful complement to automatic fiscal stabilisation; it contributed to both a virtuous circle of sustainable economic growth and steadily improving public finances. In Japan the variability of economic activity has also been significantly lim-

In the United States and Japan discretionary action reinforced the automatic fiscal stabilisers during the 1990s...

6. See Giavazzi and Pagano (1990 and 1995).

7. See for example Sutherland (1997).

8. See Martinot (1999).

Table IV.2. Automatic fiscal stabilisers and the fiscal stance

Percentage of (potential) GDP

	Change in ^a					
	Overall balance		Cyclical component		Structural primary balance	
	Late-1980s peak to early-1990s trough	Early-1990s trough to 1999	Late-1980s peak to early-1990s trough	Early-1990s trough to 1999	Late-1980s peak to early-1990s trough	Early-1990s trough to 1999
United States	-1.8	7.3	-1.1	1.2	-1.1	4.6
Japan	-6.5	-4.0	-0.9	-0.4	-5.5	-2.9
Germany	-1.2	1.6	-1.8	-0.4	1.1	2.5
France	-4.4	3.8	-1.6	0.8	-2.2	3.1
Italy	0.4	7.1	-2.6	0.2	5.8	2.4
United Kingdom	-7.1	7.2	-4.4	2.0	-3.6	6.1
Canada	-4.9	9.6	-4.0	2.4	-0.5	7.2
Australia	-5.9	6.7	-1.5	1.3	-1.8	4.5
Austria	-1.7	2.0	-1.3	0.6	-0.1	1.4
Belgium	-1.8	6.2	-3.4	1.3	1.4	2.2
Denmark	-6.2	5.8	-6.7	4.2	-1.4	0.3
Finland	-13.2	10.2	-10.5	7.4	-1.7	4.5
Greece	4.4	8.5	-2.5	1.0	12.8	2.5
Ireland	0.8	5.4	-3.4	3.3	2.2	-0.3
Netherlands	2.1	3.0	-2.5	2.1	4.8	0.5
New Zealand	3.3	3.2	-4.4	2.2	5.9	-1.9
Norway (mainland)	-6.2	2.4	-4.7	3.7	-3.0	0.9
Portugal	-0.9	4.2	-1.9	0.6	-3.1	0.7
Spain	-0.9	3.6	-2.8	0.9	3.5	1.5
Sweden	-17.0	14.1	-8.8	5.3	-7.8	10.9
Euro area average	-1.4	3.9	-2.2	0.5	1.4	2.7
OECD average ^b	-3.0	3.6	-1.4	0.5	0.0	1.4

a) The cyclical component and the structural primary balance do not add up to the overall balance, the net interest payments being the residual.

b) Excluding Czech Republic, Hungary, Iceland, Korea, Mexico, Poland, Switzerland and Turkey.

Source: OECD.

ited as a result of discretionary fiscal policy. However, since both automatic and discretionary fiscal policy have been mostly stimulatory over the decade they caused a dramatic deterioration of the fiscal position and the public debt-to-GDP ratio.

... but this option was not open to most EU economies

The simulations suggest that in the European Union (EU) the tight stance of discretionary fiscal policy contributed to the sluggishness of the recovery from the 1993 recession. However, there was no other option in many EU countries given the poor state of public finances at the time of the Maastricht Treaty and beyond. Had fiscal automatic stabilisers been allowed to work without any discretionary adjustments in the euro area, the simulations suggest that 1999 budget deficits would on average be six times as high as their current levels. This would undoubtedly have boosted long-term interest rates, perhaps significantly, and would have extended the episode of exchange rate turbulence that marked the early and mid-1990s. Obviously this would have made the establishment of monetary union extremely difficult.⁹

9. Several European countries that eased fiscal policy during the recession and tightened later (France, the United Kingdom and Sweden) had some success in terms of stabilising the economy, but at the cost of fiscal positions that were still weaker in 1999 and substantially higher debt ratios.

Table IV.3. Volatility of economic activity and public finances with and without discretionary fiscal policy^a

Fiscal stance in the early-1990s downturn ^b		Root mean square of output gap 1991-1999		Net lending, per cent of GDP 1999		Gross debt, per cent of GDP 1999	
		Actual	Neutral discretionary fiscal policy	Actual	Neutral discretionary fiscal policy	Actual	Neutral discretionary fiscal policy
United States	easy	1.4	3.8	1.0	-5.0	62.4	76.2
Japan ^c	easy	2.3	4.6	-6.0	16.3	97.3	22.9
Germany	tight	1.3	1.6	-1.6	-6.5	62.6	72.7
France	easy	1.8	1.7	-2.2	-0.6	65.2	48.9
Italy	tight	2.1	0.4	-2.3	-28.0	119.7	187.5
United Kingdom	easy	1.5	1.9	0.7	1.6	54.0	31.5
Canada	easy	2.7	1.9	1.6	-37.8	86.9	192.7
Australia	easy	1.7	3.4	0.6	6.2	30.3	0.0
Austria	easy	1.8	3.2	-2.1	-6.8	63.3	80.4
Belgium	tight	1.8	1.1	-1.0	-4.5	114.1	124.5
Finland	easy	5.7	8.6	-3.0	2.7	43.6	26.2
Greece	tight	1.8	4.4	-1.6	-13.4	108.8	152.0
Ireland	tight	3.1	3.8	3.4	0.5	43.9	53.2
Netherlands	tight	1.0	2.5	-0.6	-6.5	62.9	86.2
New Zealand	tight	2.8	3.2	0.0	0.6
Spain	tight	1.9	3.0	-1.4	-7.9	70.3	86.6
Sweden	easy	2.9	4.0	2.3	2.5	68.3	42.2
Euro area average ^d	tight	1.4	0.6	-1.6	-9.6	74.8	95.3
OECD average ^e	neutral	0.8	1.6	-1.0	-3.5	72.7	73.6

a) Neutral discretionary fiscal policy means holding structural tax and primary spending at their 1990 levels (as a proportion of potential GDP). The monetary policy assumption is an unchanged nominal exchange rate for all countries, and a Taylor rule for interest rates for all countries except France, Austria, Belgium, the Netherlands and Spain (their nominal interest rates were kept unchanged). For technical reasons, results for Denmark, Norway and Portugal are not available.

b) Based on the change in the structural primary balance as a percent of potential GDP between the late-1980s cyclical peak and the early-1990s cyclical trough (an increase in the balance points to a tight fiscal stance and *vice versa*, see Table IV.2).

c) Simulation ends in 1998. For technical reasons results for 1999 are not available.

d) Excluding Portugal.

e) Excluding Czech Republic, Denmark, Hungary, Iceland, Korea, Mexico, Norway, Poland, Portugal, Switzerland and Turkey.

Source: OECD.

Do automatic fiscal stabilisers have an impact on longer-term performance?

Automatic fiscal stabilisers may raise the economy's potential...

There are a number of ways in which fiscal stabilisers may impinge on longer-term economic performance. On the positive side, achievement of longer-term objectives of sustainable economic growth, full employment and price stability, requires short-run macro-economic stabilisation policy to ensure the maintenance of an appropriate level of aggregate demand. Recurrent large under-utilisation of resources can have damaging longer-term effects if it leads to under-investment in, and failure to maintain, physical and, more importantly, human capital. While periods of overheating may have some similar, offsetting effects in a favourable direction, it is likely that sharp fluctuations around the trend on balance have negative implications for the economy's longer-term potential.¹⁰

10. Elmeskov and Mac Farlan (1993).

... and avoid costly frequent changes in spending or tax rates

Moreover, the theoretical literature strongly suggests that it is less costly to keep tax rates stable over the cycle, and hence allow automatic fiscal stabilisers to operate, than to adjust tax rates from one year to another. Such a policy may, in any event, prove to be ineffective if activity keeps moving as attempts are made to stabilise the fiscal position. Similar arguments will apply to adjusting spending parameters such as unemployment benefit rates. Automatic stabilisation can also be justified on the ground that the government faces fewer liquidity constraints and a lower risk premium than the private sector and therefore is likely to be more efficient at consumption smoothing through cyclical downturns than households are.

In order to avoid costly debt accumulation...

There is also a negative side, or at least there are risks, involved in using automatic fiscal stabilisers. First, unless care is taken to ensure that automatic stabilisers operate symmetrically over the business cycle, the result may be permanently higher government indebtedness and associated servicing cost. Most importantly, this involves ensuring that the stabilisers are allowed to work in booms as well as during slowdowns so that they do not bias structural budget positions toward deficits. However, permanent effects can also arise for either of two further reasons: downswings and upswings can differ in terms of their intensity; or they can differ in terms of their duration.¹¹ The risk of unsustainable debt accumulation is heightened by adverse debt dynamics that may emerge when real interest rates exceed growth rates. As a result, debt expands at a faster rate than GDP, hence the debt-to-GDP ratio rises unless there is a sufficiently large primary surplus. The long-run damage to economic growth that results from sustaining high public debt levels in the wake of a recession without subsequently reducing them may be substantial, because taxes, and the distortions they create, as well as real long-term interest rates would have to be higher.

... automatic fiscal stabilisers should be employed symmetrically over the cycle

During the 1990s, the cumulative mechanical impact of automatic stabilisers on public debt formation has been broadly neutral (Figure IV.3).¹² There are, however, a few exceptions to this general finding. In particular, in Sweden and Finland the accumulation of adverse cyclical developments explains a good deal of the sharp rise in public debt in this period. Moreover, adverse debt dynamics have been very prominent in most OECD countries during the 1990s, especially in countries that had high debt levels from the outset such as Italy, Canada and Belgium.¹³ Such poor starting positions stemmed from the earlier failure to use fiscal automatic stabilisers symmetrically during previous business cycles¹⁴ – *i.e.* the tendency to let automatic stabilis-

11. A second order effect can also arise as a consequence of interest rate variations over the cycle.

12. Figure IV.3 decomposes the accumulation of gross public debt relative to GDP into relevant contributing factors according to the following identity (where d represents the ratio of gross debt to GDP):

$$\Delta d = -sb - cc + \frac{r-g}{1+g+\pi} d_{t-1} + Other$$

The first term on the right-hand side represents the impact of the structural primary balance (*i.e.* receipts less expenditures excluding net interest payments) as a ratio to GDP (sb) on debt formation and the second term that of the cyclical component as a ratio to GDP (cc). The third term represents the impact of endogenous debt dynamics (r = real interest rate, g = real GDP growth rate, π = inflation rate). It shows that existing debt contributes to further increases in the debt/GDP ratio if the real rate of interest exceeds the growth rate of the economy. The last term marked “Other” is a residual, which includes the impact of revaluation of existing debt (*e.g.* due to exchange rate movements), the net purchase of financial assets by the government and interest receipts. This analysis focuses on gross debt rather than on net debt, since the latter is more uncertain due to difficulties in assessing the true value of governments’ financial assets. Moreover, in most countries gross debt has greater relevance for financial markets than net debt.

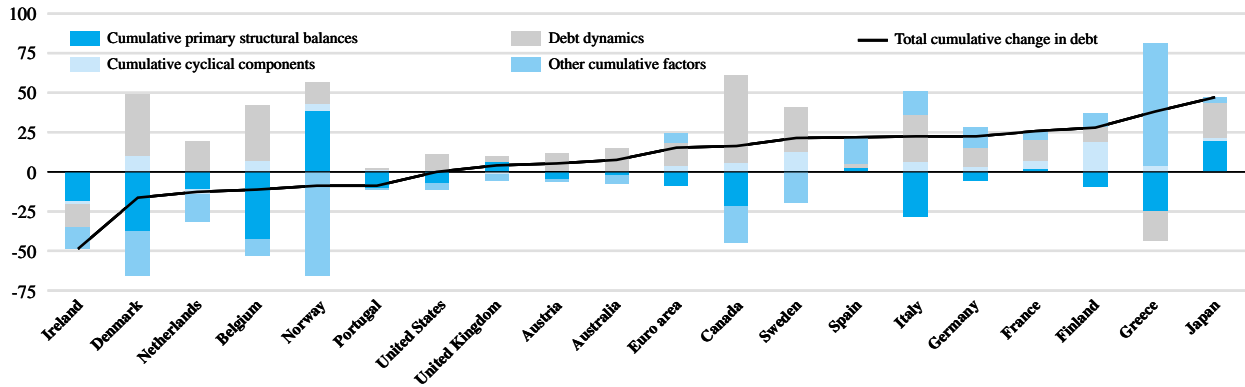
13. In contrast, in Greece, also a high-debt country, debt dynamics have worked favourably due to high inflation, but (foreign-currency denominated) debt nevertheless soared in the wake of the depreciation of the exchange rate.

14. Leibfritz *et al.* (1994).

Figure IV.3. Breakdown of cumulated gross public debt

As a percentage of actual GDP

From late 1980s cyclical peak to 1999



ers work fully in a recession while overriding them by discretionary fiscal expansion in upswings. Most countries have succeeded in offsetting the resulting adverse debt dynamics in the 1990s by strong fiscal consolidation – with the notable exception of Japan where massive fiscal easing contributed to the ballooning of public debt. In the future governments should guard against the asymmetric use of automatic fiscal stabilisers, although this obviously does not preclude all discretionary action, particularly for structural reasons. If, for example, the tax burden is heavy and found to exert a negative impact on economic growth, governments may aim to cut taxes even during an economic upswing. However, such tax cuts need to be matched with simultaneous reductions in expenditure in order to preserve fiscal balance.

Second, there is a risk of governments treating changes in budget positions that have structural roots as if they were the result of automatic stabilisers, or *vice versa*. This is to misjudge the underlying fiscal situation and may lead to inappropriate policies. Of central importance in judging the underlying, structural, budget position is a sound assessment of structural change, particularly as it affects the level of potential output. Once evidence suggests that changes affecting the level or the growth rate of potential output have occurred, fiscal policies should be reviewed and, where necessary, adjusted. Otherwise, fiscal policy may be set on an unsustainable course and there is a risk of provoking adverse private-sector reactions once financial markets and consumers realise this. Improving the analytical tools available to governments to gauge the economy’s potential and the structural fiscal position thus appears to be important for future policy making.

... offset if a shock is structural rather than cyclical...

Finally, but very importantly, automatic fiscal stabilisation is often created by mechanisms that allow people and businesses affected by changing economic circumstances to delay their adjustment to change. Such mechanisms include the functioning of social security systems, labour market institutions and many parts of tax systems whose effects on incentives have been analysed in detail in the various *OECD Jobs Strategy* publications.¹⁵ These systems therefore need to be designed to

... and used to facilitate, rather than discourage, adjustment to change

15. See for the most recent publication in this series, OECD (1999).

ensure that the incentives to which they give rise are consistent with flexible labour and product markets that heighten the economy's ability to adapt well to change.¹⁶ Indeed, when a future economic shock requires a major reallocation of resources, the role of automatic fiscal stabilisers should at best be one of temporarily easing the pain, to allow time for the necessary adjustments to take place – not to postpone these adjustments indefinitely.

Appendix: Gauging automatic fiscal stabilisers

Tax and expenditure elasticities...

To obtain a clearer picture of the impact of cyclical variations in economic activity on government budgets, the OECD calculates the cyclical components of budget balances (Table IV.1). In practice, the cyclical components of the budget balance are calculated by subtracting the estimated structural components of government revenues and expenditure from their actual levels (see Annex Tables 30 and 31). The structural components, in turn, are calculated from actual tax revenues and government expenditures, adjusted proportionally according to the output gap and the assumed built-in elasticities.¹⁷ For the purpose of accurately assessing cyclical sensitivity of revenues, four different categories of taxes are distinguished, each portraying different degrees of built-in elasticity with respect to cyclical fluctuations in GDP (see Table IV.4):

- *Corporate tax*, which on average represents 3½ per cent of GDP in the countries covered, exhibits the highest variability. Accordingly, the average output elasticity is estimated at around 1¼, with somewhat higher values (around 2) found for the United States, Japan, France, Austria and Denmark and lower ones (less than 1) for Germany, Italy, the United Kingdom, Belgium, Finland, Greece, New Zealand and Sweden.
- As concerns *personal income tax*, whose share in GDP amounts to some 12½ per cent on average in the countries that are covered, the average GDP elasticity is close to 1 on average. Note, however, that some countries (the United Kingdom, Finland, Greece and Sweden) show significantly higher values, whereas others (Japan) have substantially lower ones.
- For *social security tax*, which on average yields 12 per cent of GDP, the cross-country average GDP elasticity amounts to just over ¾, with values above 1 found in the United Kingdom and Greece, and values less than ½ in Japan.

16. This need not diminish or may even strengthen the automatic fiscal stabilisers. For example, shortening benefit duration strengthens work incentives without affecting the short-run automatic stabilisation properties of the unemployment insurance system. To take another example, introducing lower marginal tax rates and in-work benefits at the lower end of the pay scale, while providing work incentives, raise tax progressivity at the same time.

17. In addition the OECD Secretariat has experimented with a complementary approach, using a structural VAR model to capture the effects on fiscal balances of specific economic shocks in the past in European Union countries (Dalsgaard and De Serres, 1999). A main advantage relative to the above approach is that estimates of output gaps are not required, but the results with this model are not directly comparable. This is the case because the elasticities that are derived from the VAR model include not only the impact of automatic stabilisers, but also that of discretionary fiscal policy to the extent that it reacts in a predictable fashion to economic disturbances.

Table IV.4. Tax and expenditure elasticities

	Tax				Current expenditure	Total balance ^a
	Corporate	Personal	Indirect	Social security		
United States	1.8	0.6	0.9	0.6	-0.1	0.25
Japan	2.1	0.4	0.5	0.3	-0.1	0.26
Germany	0.8	1.3	1.0	1.0	-0.1	0.51
France	1.8	0.6	0.7	0.5	-0.3	0.46
Italy	1.4	0.8	1.3	0.6	-0.1	0.48
United Kingdom	0.6	1.4	1.1	1.2	-0.2	0.50
Canada	1.0	1.2	0.7	0.9	-0.2	0.41
Australia	1.6	0.6	0.4	0.6	-0.3	0.28
Austria	1.9	0.7	0.5	0.5	0.0	0.31
Belgium	0.9	1.3	0.9	1.0	-0.4	0.67
Denmark	1.6	0.7	1.6	0.7	-0.7	0.85
Finland	0.7	1.3	0.9	1.1	-0.4	0.63
Greece	0.9	2.2	0.8	1.1	0.0	0.42
Ireland	1.2	1.0	0.5	0.8	-0.4	0.32
Netherlands	1.1	1.4	0.7	0.8	-1.0	0.76
New Zealand	0.9	1.2	1.2	1.1	-0.4	0.57
Norway (mainland)	1.3	0.9	1.6	0.8	-0.2	0.46
Portugal	1.4	0.8	0.6	0.7	-0.2	0.38
Spain	1.1	1.1	1.2	0.8	-0.1	0.40
Sweden	0.9	1.2	0.9	1.0	-0.5	0.79
Average	1.26	1.03	0.89	0.81	-0.29	0.49
Standard deviation	0.43	0.40	0.35	0.22	0.24	0.18

a) Based on weights for 1999. Semi-elasticity, *i.e.* change in net lending as a percentage of GDP for a 1 per cent change in GDP.
Source: OECD.

- In the case of *indirect tax*, which on average is the largest tax category among the countries covered (14 per cent of GDP), the GDP elasticity amounts to almost 1 on average. However, Norway and Denmark well exceed that average whereas Japan, Australia, Austria and Ireland are significantly below it.

The built-in elasticity of government expenditure, finally, which reflects cyclical variations in unemployment-related spending (unemployment insurance and active labour market measures), is relatively low given the small share of such spending in the total. For most countries elasticities in the 0 to $-1/4$ range have been adopted, albeit Denmark, the Netherlands and Sweden display significantly stronger expenditure sensitivity.

These elasticities have been estimated in two steps (see for further details Van den Noord, 2000). First, the elasticity of the relevant tax bases and unemployment with respect to (cyclical) economic activity are estimated through regression analysis. Next, the elasticities of tax proceeds or expenditure with respect to the relevant bases are extracted from the tax code or simply set to unity in cases where proportionality may be assumed. These two sets of elasticities are subsequently combined into reduced-form elasticities that link the cyclical components of taxes and expenditure to the output gap.

... reflect the cyclical sensitivity of tax bases and unemployment, the tax code and benefit rates

The last column of the table below suggests that, averaged over OECD countries, the budget deficit widens by $1/2$ per cent of GDP when output falls by 1 per cent relative to its potential level. This finding is in line with earlier analysis (Giorno *et al.*, 1995) and may be considered as a stylised fact. However, this average conceals marked differences across countries. For example, in Sweden, Denmark and the

Netherlands the sensitivity is almost double the OECD average while in the United States and Japan it is only around half of that.

*The elasticities are surrounded
by significant margins of
uncertainty*

For a number of reasons, the estimated cyclical components of the budget balances are surrounded by significant margins of uncertainty. First, the estimated elasticities may be expected to reflect, at best, the “average” cyclical responsiveness of these items over a sample period. Actual year-to-year behaviour may be more erratic as specific tax bases may react atypically over the cycle. Second, the cyclical behaviour of tax yields may be changing over time due to reforms of tax systems. Reform initiatives since the mid-1980s have generally been geared to removing preferential tax treatments, flattening personal tax rate structures and lowering business tax rates. These changes should have worked to reduce the automatic stabilising properties of tax systems. Third, 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. For example, the budgetary consequences of supply shocks that are associated with improvements in technology and changes in labour supply may differ from those of demand shocks that stem from the international trade cycle or movements in household sentiment. Moreover, even if automatic fiscal stabilisers operate fully following the supply shock, part of the resulting change in the fiscal position may be recorded as structural rather than cyclical.¹⁸

18. This must logically be the case with the methodology adopted here. For example, an exogenous decline in labour supply is likely to affect actual and potential GDP in the same (downward) direction, and as a result the output gap may not move much. Similarly, a favourable technology shock may boost actual and potential output, but not necessarily the output gap.

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