

# Pressures on the Stability and Growth Pact from asymmetry in policy

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**ABSTRACT** We identify pressures on the SGP that stem from asymmetries in economic behaviour and macroeconomic policy in the euro area. The asymmetry in the way the euro economy operates with respect to inflation, growth and unemployment merits an asymmetric policy response. While Eurosystem monetary policy appears to match the concerns, the asymmetry of fiscal policy in the member states means that they tend to develop their stance in a way that is inconsistent with a long-run sustainable balance and debt ratio. This could be because they are persistently too optimistic about growth, thus generating pressure on the deficit limit which they then blame on cyclical causes. However, the main asymmetry is a failure to adjust sufficiently in the up phase of the cycle, either by cutting taxes less or controlling expenditures to offset the unwillingness to raise taxes and control expenditures in the down phase. The asymmetry in the SGP through the excessive deficit procedure helps to offset this political problem.

**KEY WORDS** Asymmetry; debt; deficits; fiscal policy; Stability and Growth Pact.

It is no surprise that the Stability and Growth Pact (SGP) has been under pressure recently. The excessive deficit procedure is intended to exert discipline on the governments of the member states through the threat of unpleasant consequences should such deficits emerge. Deficits will tend to be at their largest round the lowest part of the economic cycle. It is politically difficult to lower fiscal deficits at any time, as it involves some combination of higher taxation or lower expenditure than was planned. Making such changes at a low point in economic performance is particularly challenging – as is paying a penalty at that juncture. The intended incentive is thus to push countries into recalibrating the structure of their fiscal policies at the politically easier growth phase of the economic cycle. Then it is more likely to be a case of somewhat smaller tax cuts or smaller expenditure increases than would otherwise occur. However, not all countries have succeeded in avoiding excess deficits and those that have them not surprisingly want to put off adjustment to easier times if they can. The SGP is thus not only clearly asymmetric in itself in concentrating constraints and

penalties at one phase of the economic cycle rather than uniformly across it, but governments also tend to make changes to the structure of taxation and expenditure asymmetrically across the cycle. Our analysis suggests that the main problem lies with what governments do and do not do in the growth phase of the cycle rather than when the deficits emerge.

Here, we do not simply argue whether a more sophisticated design for the SGP could meet the demands of these and other asymmetries in macroeconomic behaviour and decision-making more effectively. After defining asymmetry in Section 1, we explore the extent of the underlying asymmetry in the economy across the economic cycle with which policy will have to cope in Section 2. Asymmetric economic behaviour may best be managed by asymmetric policies. We explore the extent of previous asymmetry in policy-making by the member states that the SGP and related macroeconomic policy measures need to counter in Section 3. Not surprisingly, the asymmetries in the economy and the asymmetries in policy interact and part of our problem is to disentangle the two if we are to assist future policy design and we discuss this in Section 4 before concluding.

Unfortunately, for many member states, the problem has not simply been one of making a marginal adjustment to the pitch of the fiscal balance across the economic cycle so that it does not breach the 3 per cent deficit limit at the worst point. They have needed to make downward structural adjustments as well. Actual policy and behaviour is thus complicated, reflecting a combination of cyclical and structural (im)balances.

## 1. THE NATURE OF ASYMMETRY

There is no commonly accepted definition of asymmetry. In the context of European integration the word 'asymmetric' is often used merely to mean 'different', as in the concept of 'asymmetric shocks', which affect one part of the economy rather than another. Secondly, 'asymmetry' is often used to refer to relationships where variables or even secondary equations have been omitted.

Here we normally use the concept of asymmetry more directly—relationships are not symmetric in the sense of being the same either side of a given value, a 'threshold' in the terminology of Granger and Teräsvirta (1993) and Tong (1983). A simple example is the Phillips curve, where inflation responds differently depending upon whether gross domestic product (GDP) is above or below its sustainable trend.

Much traditional treatment of asymmetry (Keynes 1936; Diebold and Rudebusch 1999) relates to the shape of the business cycle, in three main respects:

- deepness* – are recessions deeper when booms are high?
- length* – do expansions last longer than recessions?
- steepness* – does the decline occur more rapidly than the recovery?

This asymmetry in outcome is a product of the asymmetries in relationships and shocks that we address.

We identify six features of asymmetry in the economy and policy in the SGP context:

- *the Phillips curve* – positive output gaps result in considerable inflationary pressure, whereas negative gaps have a much more limited effect in reducing inflation;
- *the Okun curve* – periods of low growth/economic decline shed more jobs than periods of symmetrically higher growth add jobs/reduce unemployment;
- *the tightest labour markets influence inflation, not simply the average* – the more variation in unemployment across Europe the less any given level of unemployment will limit inflation;
- *monetary policy reacts much more strongly to large deviations from its target than small ones* – outside a corridor of limited reaction, monetary policy responds strongly to high inflation and even more to the threat of deflation;
- *beyond a point that most euro area countries have reached, attempting to expand the share of public sector activity in the economy tends to reduce the overall rate of growth*;
- *the behaviour of the fiscal authorities over the cycle* – governments are more ready to sustain larger deficits in bad times than they are smaller deficits/surpluses in good times; they reduce taxes more rapidly and do not restrain expenditure so strongly in periods of good performance as they do the reverse when economic performance worsens.

The structure of European Union (EU) macroeconomic policy, including the SGP, the Broad Economic Policy Guidelines (BEPG) and the Lisbon Strategy stand in the light of this background. The SGP contains two obvious asymmetric elements: first, it seeks to bring down the overall indebtedness of the euro area. The Maastricht criteria aimed at a debt ratio less than 60 per cent of GDP for each member state, roughly the average at the time. It is not that 60 per cent rather than any other specific number has much meaning but that the debt ratio should be in some sense ‘sustainable’. That is, it should be possible to map out a reasonable future path for meeting the cost with a plausible evolution of taxes and economic activity, given the likely demands on expenditure. Although there is a need to reduce the overall level of the debt ratio, not all member states ‘need’ to reduce their own debt ratio to reach the 60 per cent level. There is therefore a tension between the overall and the individual need.

The second element of asymmetry in the SGP that has attracted much more adverse comment is the one-sided limit on the deficit ratio. With current growth rates, deficits in excess of 3 per cent are not consistent with maintaining a debt ratio below 60 per cent, hence an asymmetric constraint was needed. However, highly active fiscal policy can also pose a problem for macroeconomic management. As a referee helpfully pointed out, with strong growth and a sustainable debt position any ‘pernicious effects of the SGP will diminish’.

We take the six aspects of asymmetry in turn and assess how well they match with the policy asymmetry under the SGP.

## 2. ASYMMETRY IN THE MACROECONOMY AND MONETARY POLICY

In Mayes and Virén (2004) (henceforward MV)<sup>2</sup> we use a simple conventional four-equation model of the economy, consisting of an *IS curve*, a *Phillips curve*, an *Okun curve* and a *monetary policy reaction function*. These equations determine inflation, output, unemployment and the interest rate. Foreign prices, foreign output and the exchange rate are exogenous. Data constraints lead us to modify the Phillips curve in some estimations; price expectations are represented by Organization for Economic Co-operation and Development (OECD) forecasts a year ahead. Lag structures are included. We use a panel of quarterly data for 1985.1 to 2001.3 for all euro area countries except Greece and Luxembourg, for which information was not available. This gives a potential 770 observations. The starting date is determined partly by data availability but mainly by the need to have a single policy regime.

### 2.1 The IS curve

There is very substantial asymmetry in the sense of variation across the member states. The impact of a 1 per cent interest rate increase (allowing for lags) varies from 0.5 to 3.8 per cent of GDP with most estimates falling between 1 and 2.2 per cent MV (2000). Thus, if the problem to be corrected by policy lay in low response countries, other, more responsive, member states would bear a greater proportion of the adjustment under the single monetary policy. The member states also react differently to external influences through the real exchange rate. The ratio of the real interest rate and real exchange rate coefficients ranges from 2 to 8, ignoring outliers.

This asymmetry does not merely occur when trying to aggregate across different economies. It exists within economies as well. MV (2004) show that the range of estimates from highly closed industries like construction to open ones like manufacturing is even greater than the range across countries. Thus it matters for policy, not merely whether shocks are unevenly spread across the member states of the euro area but whether they are spread unevenly across industries. Conversely, the impact of a common shock will vary both by member state and by industry.

There will be systematic departures from the relationship we describe that affect the deepness, steepness and length of the business cycle if important relevant variables have been omitted. MV (2004) shows this by adding house and stock prices to the equation. There are striking differences in the way these wealth measures feed through into activity across the EU countries and indeed striking differences in the movement of house prices over time (real house prices rose by nearly 11 per cent a year in Spain between 1998 and 2002 while they fell in Germany, for example). Other financial variables can be added, including long interest rates, where they have a distinguishable impact.

## 2.2 The Phillips curve

The Phillips curve is the archetypal nonlinear relationship in macroeconomics, confirmed by a large set of empirical analyses. It is immediately clear (MV 2004: Table 3) that with the exception of Spain and Finland, the results conform to the expected asymmetry whichever estimation method is used. In each case the positive output gap shows a clearly positive relationship, while the negative output gap does not appear to exert any significant influence on inflation.

We now have a striking implication for policy. When the output gap is negative this will exert very little downward influence in its own right on inflation. Attempts to run the economy in an over-expansionary manner will, however, have substantial and quite rapid effects on inflation. There is therefore a strong incentive to avoid inflationary pressures taking hold.

From a practical point of view, ignoring asymmetry will only generate significant errors if:

- the shifts along the curves are substantial;
- the nonlinearity is considerable;
- the different countries have very different forcing variables (output gaps) – their cycles are not co-ordinated;
- the individual country relationships are very different from each other.

The problem of asymmetry applies at whatever spatial level we choose to measure activity, as can be illustrated with EU regional data, which help to show the extent of structural change and mismatch in behaviour across sectors and the economy. We test the hypothesis that the greater the range/variance of regional unemployment at any given level of average unemployment the more inflationary will be the impact, as the low unemployment regions are the main driver of inflationary pressure for the EU as a whole. The variance of unemployment is a measure of the mismatch. However, it is the pool of suitably qualified unemployed in the areas of the main demand for labour that are most important in determining inflation. Those with less relevant qualifications or unable to take a job offer quickly will have less impact, thereby generating an asymmetric departure from the simple Phillips curve. The economies that are suffering a negative output gap will be doing less to bring inflation down than the economies with the positive output gaps are providing upward pressure. The more asynchronous the euro area is the tighter monetary policy will need to be compared with any given growth rate for the area as a whole.

## 2.3 The Okun curve

The foregoing discussion dealt both with asymmetry from the labour market and asymmetry from excess demand. The Okun curve helps to distinguish them. The Okun curve has been extensively analysed recently. Harris and

Silverstone (2001) find asymmetry for Australia, Japan, New Zealand, the UK, the US and West Germany over 1978–99.

Our results (MV 2004: Table 6) cover the European Economic Area (EEA) countries over 1961–97. Only for the UK do we find little relation between output and unemployment when using a linear formulation. Most countries produce positive and negative segments with different slopes and show the expected asymmetry very clearly. In twelve of the sixteen cases the coefficients are larger when the growth rate is negative. Thus unemployment rises more when the economy contracts than it falls when the economy expands. This fits with hysteresis. However, the differences are not generally significant.

These aggregate models describe the stylized facts rather than explain why the asymmetry occurs. The problem is persistent. In downturns the increase in unemployment is more than symmetrically large than the increase in upturns and takes longer to fall than it did to rise.

#### 2.4 Monetary policy

One difficulty in measuring the foregoing relationships is that the observations are ‘policy inclusive’. Over the period governments have sought to stabilize the economic cycle with some combination of monetary and fiscal policy, through ‘automatic stabilizers’ and discretionary action. Laxton *et al.* (1993) argue that this reduces our ability to observe the curvature of the relationship. Not only does it inhibit the variance but it reduces the impact of the underlying relation. However, the impact of policy could be even more distorting if policy is itself not symmetric or linear. Economists typically express loss functions in quadratic terms, implying that policy will respond more than proportionately as expected outcomes deviate from their targets. However, they tend to make them symmetric (Taylor 1993). It is perhaps more realistic to consider the ‘opportunistic’ approach to policy (Orphanides and Wilcox 2002) where unexpected ‘favourable’ outcomes, such as more rapid recoveries, are accepted and not offset, whereas less favourable outcomes stimulate further policy responses. We observe the expected result; the weight on inflation is about twice that on the output gap and there is a large element of smoothing in policy.

However, the reaction function is itself asymmetric. The authorities appear to have responded more vigorously when inflation has been above 2 per cent a year than when it is below. This asymmetry also applies to the output gap. However, asymmetry is more complex, with policy reacting more strongly when inflation lies outside an acceptable middle range. If this followed the Eurosystem’s target for price stability of inflation not exceeding 2 per cent over the medium term, we would expect to see disproportionate reactions to inflation above 2 per cent and to deflation. Rather than impose these limits we searched for the maximum likelihood estimates for rounded intervals. It appears that deflation is tackled even more vigorously than inflation above the target range. The lowest weight is for inflation in the range zero to 4 per cent a year. This somewhat wider range for milder action than that implied by the

Eurosystem target is probably because most of the data period is before the European Central Bank (ECB) was set up. The results for the output gap are similar, with larger coefficients outside a corridor 2 per cent either side of zero. However, the coefficients above the corridor were not significant. Trying to include the output gap poses convergence problems.

## 2.5 The joint effect

Taking the results together gives a better insight into the nature and causes of the asymmetry in macroeconomic behaviour. It is clear that the variations across regions in labour markets and across sectors in product markets lead to important deviations in aggregate behaviour. When combined with the different national and sectoral responses to monetary policy, whether through the exchange rate or interest rates, this permits substantial departures from linearity. The asymmetries in the Phillips curve appear to be primarily cyclical in character. The asymmetries in the Okun curve are more complex, reflecting not just cyclical factors but the degree of sectoral and regional mismatch in the operation of the labour market. There is thus not just a nonlinear underlying relationship but asymmetric departures from it. As the average level of unemployment falls so the scope for regional and sectoral disparities also falls as there is a lower bound.

The asymmetries interact. The asymmetric nominal rigidities in the Phillips curve are likely to contribute to the asymmetric labour demand effects in the Okun curve. Downward rigidities in prices and wages would increase the variance of unemployment. The different sectoral responses to monetary policy will reflect this. Asymmetric shocks will interact with the nonlinear responses and asymmetric processes themselves. When combined with the policy reaction this generates a considerable identification problem (Blinder and Solow 1973; Haldane and Quah 1999).

## 3. ASYMMETRY FROM FISCAL POLICY AND THE ROLE OF THE PUBLIC SECTOR

Ideally, all aspects of asymmetry should be treated together but fiscal policy has an annual framework and does not fit readily in our quarterly analysis. However, we can note that the asymmetries revealed thus far make it very clear why fiscal policy needs to be exercised at a disaggregated level in the light of the local variations and the characteristics of the single monetary policy. We can see equally clearly how the asymmetries in inflationary pressures and the development of unemployment place asymmetric pressures on fiscal policy, encouraging relatively strong action in downturns both to head off the heavy re-employment costs of any 'unnecessary' job losses and discouraging the creation of further inflationary pressure when the output gap is positive. A natural reaction to this might be to try to increase the role of the public sector in combating unemployment but to maintain fiscal prudence by raising or at

least not cutting taxes. Such action would encounter the facet of asymmetry we now consider. Since tax systems are progressive, inaction means that the tax share rises as incomes rise, hence there is no need to make overt and politically difficult changes to increase the role of the public sector. Now with low inflation this effect occurs more slowly and some member states use indexation to slow it further. However, the evidence we go on to consider suggests that this drift has reached the point where it has become counterproductive. Far from allowing taxation to rise silently, member states may find that the best outcomes require actual reductions in both public spending and taxation – a politically much more difficult scenario that becomes bound up in the asymmetric operation of the SGP.

### 3.1 Limits to increasing the public sector share in the economy

It is a feature of most modern macro-models that increasing public sector consumption will reduce the overall level of economic activity in the economy, primarily because it will increase the share of lower productivity activity; see the Bank of Finland's EDGE model, for example (Kortelainen and Mayes 2004). This is a contentious finding as both positive and negative effects have been found. (Koskela and Virén (2000) offer a short survey of the literature.) Following Koskela and Virén, we argue that the relationship is asymmetric, with a positive effect of increased public sector employment on overall activity at low levels of public sector employment and a negative effect at high levels. Increased public expenditure on the physical, technical and human capital infrastructure will tend in particular to be of aggregate benefit, as the private sector tends to deliver suboptimal quantities when unaided. The euro area as a whole appears to be in the negative section of the relationship. Hence the policy implication is that a switch to greater public spending may not be a successful route out of current difficulties. Indeed, a cut may be desirable for some member states.

Using annual data for twenty-two OECD countries for 1960–96, it is possible to show that an asymmetric model can represent the relationship between public sector output and overall output and that over the relevant range the relationship is negative. We divide the observations according to whether they are on, above or below a particular threshold for the share of the public sector in GDP. Here we consider government consumption/GDP at current prices, as the threshold variable, although Koskela and Virén also consider labour shares and consumption shares, where the results are similar. It is clear from Table 1 that below the threshold the coefficient is positive except for two cases and in all cases larger than the coefficient above the threshold. That coefficient is negative except for Australia, France, Italy and Norway and in these cases the coefficients are not significant. The threshold value of the public sector (output) size varies between 10 and 30 per cent. The results are tentative owing to the very small sample size for each country. This can be eased by pooling the data and estimating the panel of twenty-two



*Table 1* Threshold model estimation results: share of government consumption in GDP as the threshold variable (only European countries shown)

<i>Country</i>	<i>Below the threshold</i>	<i>Above the threshold</i>	<i>Country</i>	<i>Below the threshold</i>	<i>Above the threshold</i>
Austria	0.580 (1.71)	-0.568 (1.69)	Italy	1.278 (3.28)	0.293 (0.99)
Belgium	0.690 (2.34)	-0.119 (0.48)	Netherlands	0.156 (0.67)	-1.617 (4.37)
Denmark	0.113 (0.80)	-0.700 (2.86)	Norway	0.448 (1.54)	0.159 (1.01)
Finland	0.458 (1.68)	-1.144 (2.25)	Portugal	0.169 (1.37)	-0.153 (1.23)
France	1.417 (3.23)	0.121 (0.25)	Spain	0.186 (1.14)	-0.172 (1.57)
Germany	-0.063 (0.80)	-1.537 (3.64)	Sweden	0.330 (1.90)	-0.123 (0.88)
Greece	0.933 (1.98)	-0.354 (1.39)	Switzerland	0.325 (1.06)	-0.904 (2.05)
Iceland	0.138 (0.61)	-1.021 (1.61)	UK	0.628 (1.74)	-0.131 (1.04)
Ireland	-0.109 (0.44)	-0.941 (1.89)			

Numbers inside parentheses below the coefficient estimates are t-ratios. Coefficients show the percentage effect of a 1 per cent increase in public sector employment on private sector output.

countries together. Koskela and Virén also estimate a multiplicative specification where the public employment effect depends on the size of the government sector. Using this specification we can compute the 'threshold' value of this variable at which public sector employment growth has zero effect on private sector output growth.

The results with panel data conform with those from individual country data. The linear model shows no relationship, while the threshold model is quite clear. There is a similar relationship using the multiplicative specification. When the size of the public sector increases, the employment effect diminishes and, after some critical value, becomes negative. The implied critical values are quite close to the average threshold values from the threshold model.

### 3.2 How sensitive is the budget balance to cyclical fluctuations in the EU?

Now we turn directly to an aspect of fiscal policy that is subject to constraint under the SGP, namely whether the current rules impose excessive constraints on the running of deficits. If fluctuations around a prudent longer-term policy would exceed the 3 per cent limit without themselves being destabilizing, then *prima facie* the constraint is too tight. To permit such fluctuations in difficult

years a country might have to move quite strongly into surplus in normal years, thereby repaying its debt as a proportion of GDP. For the euro area as a whole that of course is precisely what is required at present. However, this fortunate coincidence between the need to consolidate and the constraints of the excessive deficit procedure does not apply universally.

Views vary as to whether output shocks have substantial effects on the fiscal balance. If 'automatic' stabilizers are important, the balance will move in a strongly counter-cyclical manner (Buti *et al.* 1998). The effects may be particularly strong if buffer funds are used, as exist in Finland (Mayes and Suvanto 2002) or are suggested in Sweden (Johansson *et al.* 2002). However, discretionary behaviour by governments may attenuate the effects (Melitz 1997). When revenues rise, governments may be tempted to be somewhat laxer in their fight against rising expenditures or may cut taxes. The process may not be symmetric, as cutting expenditures or raising taxes in downturns is not attractive electorally.

There is considerable debate over how to measure the appropriate balances and Virén (2000) computes the results for many definitions and for the expenditure and revenue components separately. We use three definitions in a common specification, where the measure of the deficit depends on the growth rate of GDP, the debt to GDP ratio and the nominal interest rate MV (2002). The impact varies according to whether the growth rate is below or above the threshold (normally zero). Using data for 1960–99 from the EUROSTAT databank for the fourteen EU countries (excluding Luxembourg) the country-specific estimates are shown in Table 2. The three deficit measures are net lending, net lending less interest payments and the cyclically adjusted deficit according to the Commission.

The main implications are:

- 1 Fiscal policy is quite responsive to business cycles. If the rate of growth increases by 1 per cent the deficit decreases by 0.2–0.3 per cent for a one-year horizon (clearly larger than in Melitz (1997)).
- 2 There is strong evidence of asymmetric cyclical behaviour in government deficits. The output effects on deficits differ according to the phase of the business cycle: they appear much stronger in depressions than in booms. The hypothesis of equal coefficients for these regimes is rejected.
- 3 Asymmetries mainly relate to the structural deficit. The cyclical component of the deficit seems to behave more or less symmetrically in terms of output fluctuations. This means that when output decreases structural deficits increase but when output increases structural deficits also tend to increase (surpluses decrease). The problem thus lies with discretionary behaviour rather than with automatic stabilization. In good times discretionary policy appears to have been perverse.
- 4 The different cyclical effects show up in both revenues and expenditures. Revenues are more sensitive to output growth in depressions than in booms. When output grows, the revenue/trend output ratio remains largely constant,

Table 2 Selected country-specific estimates of impact of GDP growth on various measures of the fiscal stance using the threshold model

	<i>Below</i>	<i>Above</i>	<i>Below</i>	<i>Above</i>	<i>Below</i>	<i>Above</i>
Austria	2.115 (1.04)	0.140 (1.21)	1.166 (0.60)	0.279 (3.10)	0.864 (0.40)	-0.032 (0.33)
Belgium	1.115 (2.34)	0.212 (1.78)	0.816 (1.79)	0.090 (0.98)	-0.238 (0.47)	-0.105 (1.01)
Denmark	2.084 (2.01)	0.381 (2.51)	2.006 (1.78)	0.494 (2.92)	1.726 (1.79)	-0.229 (1.56)
Finland	1.158 (6.01)	0.168 (1.55)	0.897 (5.66)	0.177 (2.33)	0.554 (3.17)	-0.359 (4.31)
France	1.092 (2.17)	0.368 (3.62)	1.329 (3.07)	0.246 (2.97)	0.628 (1.33)	-0.060 (0.62)
Germany	—	—	1.344 (1.86)	0.106 (1.05)	1.168 (1.52)	-0.321 (3.02)
Greece	0.021 (0.09)	0.306 (2.51)	0.168 (0.79)	0.145 (1.90)	-0.338 (1.47)	0.061 (0.75)
Ireland	-8.362 (1.44)	0.048 (0.54)	-7.130 (1.26)	0.041 (0.49)	-7.086 (0.96)	-0.155 (1.33)
Italy	0.718 (1.82)	0.149 (1.69)	0.861 (1.80)	-0.051 (0.41)	0.258 (0.66)	-0.179 (1.75)
Netherlands	0.134 (0.15)	0.241 (1.54)	0.404 (0.48)	0.187 (1.38)	-0.293 (0.32)	-0.301 (2.05)
Portugal	0.155 (0.43)	0.298 (2.39)	0.510 (1.59)	0.210 (2.12)	-0.143 (0.41)	0.079 (0.75)
Spain	1.757 (2.67)	0.182 (2.67)	1.217 (1.94)	0.206 (3.12)	1.013 (1.45)	-0.216 (2.88)
Sweden	3.112 (5.36)	0.128 (0.49)	2.852 (4.74)	0.059 (0.22)	2.314 (3.84)	-0.634 (2.29)
UK	—	—	-0.424 (0.93)	0.309 (2.10)	-0.615 (1.44)	-0.269 (1.96)
Data	nl 1972-99	nl 1972-99	nlx 1961-99	nlx 1961-99	sdef 1961-99	sdef 1961-99

'Above' and 'below' relate to growth above/below the threshold. nl denotes net lending; nlx denotes net lending excluding interest expenses; sdef denotes the structural deficit. All these are related to trend GDP. SUR estimates. Thus the coefficients show the percentage effect on the deficit measure of a 1 per cent change in the growth rate. — indicates that no threshold could be identified.

while in depressions it decreases quite markedly. Expenditures increase in depressions and decrease in booms. This probably reflects changes in government transfers (e.g. unemployment benefits).

- 5 The direct effect of interest rates on deficits is clear. It is particularly strong for net lending but it also shows in primary deficits. An increase in interest rates leads to some loosening of fiscal policy, and vice versa. For net lending

this obviously reflects the direct expenditure impact of interest expenses but the primary deficit effect is harder to explain.

- 6 The effect of government debt is both significant and of 'correct' sign and magnitude. Larger debt leads to some correction in the form of lower deficits.

We have to be cautious in interpreting these results, as the reverse impact of the fiscal balance on output has been omitted in estimation on the grounds that it occurs with a lag (while the effect of growth on the deficit is contemporaneous).

The fact that deficits in EU countries appear quite sensitive to cyclical fluctuations is good news in that it may help to solve problems caused by country-specific output shocks. The lack of a federal budget may not be such a serious problem. The output growth effects on deficits seem more important in depressions than in 'normal times'. Policies appear to be quite different in these two regimes. The cyclically adjusted deficits reveal policy to be counter-cyclical in bad times but that the opposite holds in good times. Thus, output growth leads to smaller surplus/GDP ratios. This could be through tax cuts or discretionary increases in expenditures in boom periods. The explanation appears to lie on the revenue side as cyclically adjusted revenues (in relation to trend GDP) seem to decrease when output increases. The expenditure side estimates point in the same direction (to a procyclical output growth effect). In depressions, cyclically adjusted expenditures behave counter-cyclically, while the revenue side is passive. Thus in bad times fiscal policy operates mainly via increases in expenditure and in good times discretionary action mainly takes the form of tax cuts.

The main problem is behaviour in 'good times'. Although automatic stabilizers operate, discretionary action does not help to smooth the output growth path. Expenditures are not cut but instead taxes are lowered rather than increased. Thus in many respects the SGP is quite well adjusted to the natural inclinations of the member states in setting fiscal policy. It needs to push them towards using discretionary policy in a more symmetric and sustainable manner. The current emphasis on trying to operate in surplus or near balance would provide both countervailing pressure and not inhibit the operation of normal automatic stabilizers.

#### 4. IMPLICATIONS FOR THE SGP

One of the best known 'biases' in macroeconomic policy is that governments (and voters) tend to wish to achieve higher real growth rates than are actually attainable. As a result, this can impart an 'inflation bias' to the setting of policy. The theory of the political business cycle offers another explanation in exploring how far governments try to gain electoral advantage from exploiting the fact that in the short run extra growth can be observed before the inflationary consequences of any excess become apparent. As soon as people

believe that governments may succumb to these temptations, this belief will be built into their expectations of inflation and the costs of monetary policy to achieve price stability will be greater. Modern governance structures recognize this problem by implementing regimes that assign to central banks the achievement of society's objective of price stability in a framework where governments cannot easily override that achievement in the short run when opportunities for engineering a political cycle or exercising undue optimism occur, as exemplified in the ECB statutes.

The same sorts of ideas can be applied to fiscal policy, as in New Zealand's 1994 Fiscal Responsibility Act. This requires that public accounting be sufficiently transparent that governments can plausibly show that their fiscal policy is prudent in the long run and the short-run path is consistent with achieving that long-run prudence. Long-run prudence is a requirement for solvency or the ability to demonstrate that future tax revenues are likely to be sufficient to meet future expenditure requirements including any existing debt. The drawback is that this depends on a set of assumptions about the future that are not verifiable at the time they are made. Setting aside that governments cannot fully bind their successors, the prudence of current settings depends on assumptions about sustainable economic growth rates, population structures and possible natural or human-induced shocks. It is difficult to set the bounds of plausibility. Financial markets give their opinion on the pricing of sovereign debt, as do rating agencies and the International Monetary Fund (IMF). This market approach to measuring the prudence of the current setting of fiscal policy and the framework in which the decisions are embedded gives one of the clearer assessments. It is obscured in the euro area, where the pricing of individual member state debt reflects the default risk of the whole area, not just that of the particular state. The SGP thus needs to replace some of the 'market discipline' that previously existed. Then imprudent policy would impose interest rate and exchange rate penalties on a government.

It is not clear how far governance structures for fiscal policy can impose *ex ante* plausible constraints as they have for monetary policy. One such route is to establish some technical assessment of policy setting. The Johansson Commission (2002) in Sweden suggested that this would be possible for establishing the plausible longer-term growth rate and the economy's current deviation from it. This would help to overcome the innate optimism of hoping that when growth rates pick up, this is a sign that the underlying sustainable rate has risen, but that when growth falls, this is merely a short-run deviation from the previous sustainable trend.

Current European governance structures for fiscal policy also recognize the problem and offer some solution. The SGP offers no opportunity to re-litigate the plausible growth rate in good times, short of renegotiating the pact as a whole, and, through the Commission, offers an independent technical assessment of how the current fiscal stance compares with simple rules on prudence. There are well-known drawbacks to this simplicity. Focusing more directly on

sustainable growth and the current position relative to it might help but our interest is in asymmetry in the system. There are two related asymmetries:

- The SGP imposes penalties and constraints on excessive deficits and seeks to reduce excess debt. It does not offer matching 'rewards' for very prudent behaviour nor consider whether surpluses may also be destabilizing.
- It does not differentiate in assessing excessive deficits according to whether the member state already has problems over sustainable debt.

The sources of asymmetry within the euro economy and the asymmetry of monetary policy set clear challenges for fiscal policy. Policy needs to be asymmetric itself. Downward pressures on the economy create greater problems for unemployment and participation rates than subsequent upturns of the same size unwind. The limited impact of negative output gaps on inflation, while the positive gaps can have substantial effects, encourages the monetary authority to make sure that inflation does not take off, thereby imposing a limiting factor on the upside. Downside threats, however, permit and require much stronger policy reactions and here the asymmetry in the behaviour of the monetary authorities suggests that their actions will be very much in tune with the fiscal authorities in that phase of the cycle. It is also here that the SGP bites, as the extent of deficits is limited. This does not appear to be a problem for automatic stabilization but with discretionary actions. In good times taxes are cut more than symmetrically but not raised when there is budgetary pressure. Correspondingly, governments do not cut back on expenditure in good times well enough to balance out the tax cuts and are rather too ready to raise expenditure in the downturn compared to their reluctance to raise taxes. There is therefore a deficit bias across the cycle, a feature that the SGP helps to counter. The emphasis of the SGP and wider EU-level macroeconomic policy on reducing the general level of debt also seems appropriate, as member states appear to have reached the point where the share of public spending is sufficiently great that it may impair the overall growth rate of the economy. There may therefore be tension between policies designed to offset the impact of downturns and those aimed at faster growth. Matching them would require a different balance to the pattern of tax cutting and expenditure increases over the cycle. The SGP pushes in that direction in the down phase but some other pressure is needed to increase the pressure/incentives in the up phase.

This leads naturally to one issue that remains – the appropriateness of the penalty. Imposing financial penalties on those in difficulty makes their short-run position even worse. Excessive deficits will normally materialize when a country is in a downswing. Thus avoiding them would involve a fiscal tightening exactly when the inclination would if anything be to do the exact opposite. The economy would be pushed into more of a difficulty than it would otherwise. This problem is a good incentive structure for the time consistency problem. If the member state organizes itself prudently under normal times then the chance of it being faced by unfortunate pressure to

tighten in a downturn will be small. It is thus well motivated not to get into that position. The problem comes if a country has deliberately or through bad luck reached the point where it will have to apply unfortunate policy or face the fine. The temptation then must be to defy the rules.

Thus if anything the problem is that the SGP does not threaten effective enough 'sanctions', especially if the Council of Ministers shies away from harsh implementation of the Pact once important member states get into difficulty. Some minor softening in the short run would be credible if member states had shown more willingness in the past to adjust without the sanctions and if they could be implemented without major measurement problems. In the longer term, however, when there is no particular call for consolidation, one might very well want to move a system that had a rather more sophisticated way of judging whether policy was prudent. Some greater incentives to avoid getting into the unfavourable range might help rather than just penalties once the event occurs.

It is necessary to decide how to handle member states that are already well within the debt criterion. There is a second issue of stability here. If all the member states were simultaneously to switch to a much more expansionary stance, this would have a big effect on overall policy and the interaction with monetary policy. Monetary policy reacts much more vigorously to substantial threats to price stability than to small ones. In part this will be in reaction to the observed behaviour of the fiscal authorities, but there will always be the incentive for some member states to try to free-ride and run slacker fiscal policy when monetary policy is based on the aggregate euro area fiscal position. If the individual member states are out of phase or there are asymmetric shocks, big swings in fiscal policy stance by individual governments will have little impact on the overall balance. It is correlated actions that cause the difficulty. Clearly, the SGP would become much more complex if its rules for each individual country were to be contingent on the general position of the EU. Since all countries could be trying to improve their own relative position, this would result in a very complex game to determine the overall outcome, which could include some sort of 'deficit trading' analogous to trading emission permits. It would be understandable for the EU to stick with rules that apply to each individual country contingent purely on that country's actions and prospects. The more opaque or complex the rule and the more it is open to discussion before it is applied, the more contentious the political debate on each occasion. Simple, hard and fast (but fair) rules seem a more likely prospect.

One anomaly remains. In the euro area, each member state's debt faces similar prices. It is not clear that the risks are so similar. In the United States no such similarity in the pricing of state and other regional debt exists. States, cities and counties can and do default. There is thus much less pressure in the euro area on member states with weak financial positions and consequentially less benefit for states with strong positions to perform even better. There are several ways this might be handled. The ECB could differentiate among the

member states' debt in its collateral policy. The Fed. only deals with federal not state debt. One could create a similar debt category, not by issuing European-level debt but by issuing mutual guarantees on some debt, say up to 30 per cent of GDP. States would be on their own above that. The ECB could limit the collateral it will take from any one state, thereby increasing the interest rate on the excluded debt. This would be an incentive to remain within the acceptable limits to avoid the extra cost.

It would also help to have at least some incentives for better prudence right across the board and not just for those countries in difficulty. That would act as a greater encouragement to stay out of the danger zone. There is a tendency to focus on rules for constraining behaviour. Just letting market pressures and 'market discipline' operate a bit more effectively might also have much to recommend it.

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## NOTES

- 1 We thank the referees and conference participants for their comments. The usual disclaimer applies.
- 2 The full version of the paper, presented at a conference at the University of London on 25 April 2003, contained the detail of the model and the associated estimates. A version of that material is now available in Mayes and Virén (2004).

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