# A SIMPLE AND FLEXIBLE ALTERNATIVE TO THE STABILITY AND GROWTH PACT DEFICIT CEILINGS. IS IT AT HAND?

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## Abstract

There have been widespread criticisms of EMU fiscal institutions. We consider a simple alternative to the deficit ceilings envisaged in the Stability and Growth Pact. We advocate the adoption of deficit targets. National governments should retain discretion in setting deviations from targets, but these deviations should then be reversed following a predetermined rule. This ensures fiscal discipline and leaves room for stabilisation policies. For the rule to be credible, only small changes are required to current EMU institutions. Our scheme performs well in comparison with existing reform proposals and is consistent with the golden rule of deficit financing.

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## *1. Introduction*

The Maastricht Treaty and the Stability and Growth Pact (SGP) provide the institutional framework for the conduct of fiscal policies within the European Monetary Union. The Maastricht Treaty specifies that EU fiscal policies are run nationally, following EU-wide objectives defined on a yearly base by the Council of Economic and Finance Ministers (Ecofin) in the Broad Economic Policy Guidelines[1] (BEPGs) and within the limits set by the SGP. The SGP stipulates that countries should aim for public budgets close to balance or in surplus, and sets an upper bound to national deficits as a proportion of GDP (3%), making exception only for large shocks[2]. Countries are required to submit yearly their Stability and Convergence Programmes (SCPs) to the European Council. National fiscal policies are regularly scrutinised to assess their conformity with the BEPGs and with the announced SCPs. Countries failing to comply with the BEPGs or the SCPs are subject to censure by the other EU members. Only unjustified breaches of the 3% ceiling set in the SGP cause the adoption of sanctions towards a country[3].

[1] The BEPGs are actually more comprehensive than the fiscal policy guidelines included in the SGP, as they also consider recommendations in areas such as structural reform and labour market developments.

[2] The SGP was adopted as part of a resolution agreed by the Amsterdam European Council of 17 June 1997. The main aim of the SGP was that of strengthening the Maastricht Treaty provisions on enforcing fiscal discipline. The SGP envisaged that in the absence of the exchange rate instrument in EMU there would be a greater need for automatic fiscal stabilisers at national level and this would make it "*necessary to ensure that national budgetary policies support stability oriented monetary policies*". Hence the key commitment of the SGP is to set the "*... medium-term objective of budgetary positions close to balance or in surplus…"* which *"... will allow all Member States to deal with normal cyclical fluctuations while keeping the government deficit within the reference value of 3% of GDP*". The sanctions for breaking the 3% upper ceiling are specified in the Excessive Deficit Procedure (EDP) which is specified by Council Regulation 1467/97 included in the SGP. The EDP sets out that the Council, on the basis of opinions from the Commission and Ecofin within three months of the reporting deadlines of March 1 and September 1 each year, can declare an excessive deficit unless it is considered to be exceptional and temporary. Excessive and temporary deficits are defined as resulting from: (i) an unusual event outside the control of the Member State concerned and has a major impact on the financial position of the general government; or (ii) from a severe economic downturn (if there is an annual fall of real GDP of at least 2%).

[3] The sanctions come into force at the latest ten months after the Council has identified an excessive deficit if the country concerned does not take effective corrective action. The sanctions take the form of a non-interest-bearing deposit with the Commission equal to 0.2% of GDP plus an amount linked to the size of the deficit, subject to an annual upper limit of 0.5% of GDP. If after two years the Council decides that the excessive deficit has not been corrected, the deposit becomes a fine which can be shared amongst member states not subject to excessive deficits in proportion to their share in total GNP.

In practice the Council has so far shied away from declaring an excessive deficit. This despite the fact that three countries have breached the 3% deficit ceiling: France, Germany, and Portugal.

The rationale for the SGP fiscal arrangements lies in the political distortions that generate excessive debt accumulation and in the externalities that characterise national debt policies within a monetary union[4]. Whilst this has created a general consensus on the need for fiscal discipline, the specific features of the SGP have been widely criticised.

For instance, the adoption of a uniform deficit ceiling, which is a "one size fits all" policy, does not take into account structural differences across countries, such as different stocks of outstanding debt, or the asymmetric effects on demand and output of national fiscal policies. In addition, by focusing on the size of the budget deficits the SGP provides (at best) a limited discipline for national fiscal policies that do not breach the 3% ceiling. This criticism is based on two arguments. The first is that the Pact does not contain adequate incentives for the creation of surpluses during economic expansions (Bean 1998, CESifo 2002, Canzoneri and Diba 2001). One could argue that the risk of being forced to implement a procyclical deficit-reduction policy in the face of a recession should induce governments to adopt symmetric fiscal policies. Unfortunately, distorted political incentives, one of the rationales for the Pact in the first place, are such as to induce national governments to underestimate potential fiscal deficits from prospective future recessions. The second point is that, in the present institutional set-up, the BEPGs should provide guidance to national fiscal policies within the limits imposed by the SGP. Von Hagen and Mundschenk (2001, p. 24) argue that the BEPGs enforcing mechanism is weak as is relies only on moral suasion or reputation-damaging peer pressure. They also point out that there is a loose connection between the typical budgetary cycle and the discussion of national SCPs. As a result, countries like France and Germany have been able to undertake significant tax adjustments without

[4] For a comprehensive survey, see Beetsma and Debrun (2002).

even mentioning them in their SCPs. The European Commission (2000) remarks that quite often the measures taken or planned within the SCPs are not thoroughly explained, preventing an effective process of peer review within Ecofin. The behaviour of national fiscal policies between 1998 and 2000 supports these criticisms. During this period of transition to EMU, despite a good growth record in Euroland, the progress towards fiscal consolidation was very slow (CESifo 2002). Thus, the SGP's reputation appears tarnished and a number of revisions are repeatedly suggested[5] by both academics and policy-makers. Many commentators point to the need to make the pact more focused on debt sustainability. In fact, it has been recently argued that deficits should be made conditional on past debt levels, thus penalising past profligacy. In the paper, we provide analytical content for such a proposal, showing that a simple deficit reversal rule would achieve a better combination of fiscal flexibility and discipline than the current deficit ceiling.

Building on the work by Jensen (1994), we present a model where it is assumed that political incentives bias the policymaker's preferences against a policy of debt reduction. As a result, the steady state solution of the model is characterised by debt-induced fiscal distortions and inflationary pressures. On one hand, this outcome is consistent with the popular wisdom calling for the adoption of institutional constraints on fiscal policies. On the other hand, it is intuitively obvious that our results confirm standard criticisms of the SGP deficit ceiling. Discretionary fiscal policies consistent with the ceiling still retain the bias towards excessive debt accumulation, while the ceiling itself causes inefficient stabilisation in the face of large and persistent shocks.

As a simple alternative to the deficit ceilings envisaged in the SGP, we advocate the adoption of deficit targets. National governments should retain discretion in setting deviations from targets, but these deviations should then be reversed following a predetermined rule. The proposed rule obtains fiscal discipline when the SGP would allow for excessive discretion and leaves room for stabilisation policies when the SGP ceiling would be binding. Furthermore, it is immune from

the "one size fits all" criticism because countries retain full discretion in the choice of temporary deviations from the announced paths.

The crux of the matter obviously is that our proposal, like any other institutional arrangement, requires an adequate enforcement technology. If the sanctions envisaged in the SGP (or at least the reputational costs attached to a breach of the 3% ceiling) are deemed sufficient to lend credibility to the SGP, similar arrangements should work for the simple rule proposed here. However, stricter supervision of national policies by European institutions is certainly needed. In the paper we sketch out some of the institutional arrangements designed to implement the system of checks and balances sufficient to support the credibility of the proposed rule.

In a nutshell, we argue that:

1. Governments should make binding announcements on the future reversal of temporary deviations from announced deficit targets.
2. The Eurogroup should be given substantive sanctioning powers against non-complying governments.
3. The rule suggested in (1) would apply irrespective of the level of the deficit, thus providing more discipline than the current 3% ceiling. However, we contemplate specific provisions for national decisions to breach the 3% ceiling.

The remainder of the paper is organised as follows. Section 2 presents the model. Section 3 discusses the policy rules and the steady state solutions. Section 4 evaluates the performance of the proposed institutional arrangements. Section 5 discusses the implications for EMU institutional design. Section 6 concludes showing that our scheme fares quite well in comparison with pre-existing reform proposals. Furthermore, it proves robust to standard criticisms of the SGP motivated by the concern for structural policies. In fact the rule can be easily amended to allow governments to

[5] See Buti, Eijffinger and Franco (2003) for a survey of recent proposals.

temporarily increase deficits in order to finance public investment or to implement structural reforms aimed at improving the debt/GDP ratio in the longer run.

### *2. The model*

Consider a monetary union formed by *n* economies[6]. In each of them, the government provides a certain amount of public goods $G_t^i$ financed by means of distortionary taxes[7] $\tau_t^i$ and public debt accumulation $D_t^i$. Hence the government *i*'s budget constraint can be written as:

$$D_t^i = (1+r)D_{t-1}^i + G_t^i - \tau_t^i \qquad (1)$$

where $D_t^i$ denotes the stock of government debt at the end of period *t* and $r$ is the *real* rate of interest[8].

The economy's supply function[9] is given by:

$$y_t^i = -\tau_t^i + \varepsilon_t^i + \pi_t^B - E\left(\pi_t^B\right) \qquad (2)$$

where output deviations from the socially optimal level, $y_t^i$, depend on distortionary taxes, a shock $\varepsilon_t^i$, independently and identically distributed with zero mean and variance $\sigma_\varepsilon^2$, and inflation surprises $\pi_t^B - E\left(\pi_t^B\right)$, where $\pi_t^B$ is the inflation rate set by the union's central bank and $E\left(\pi_t^B\right)$ is expected inflation.

National policymakers set their fiscal policies to minimise the following loss function:

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[6] All variables are in logs. Equation (1) is a logarithmic approximation to the government budget constraint, where all variables are normalised by non-distortionary output, as in Beetsma and Bovenberg (1997).

[7] Following Alesina and Tabellini (1987) we define $\tau$ as a tax rate on the total revenue of firms.

[8] To limit the analytical complexity of the model we assume that *r* is constant and government debt is fully indexed, as in Jensen (1994) and Beetsma and Bovenberg (1997). The r.h.s. term of eq. (2) does not include seigniorage revenues. It is well known that in modern economies the limited amount of domestic money holdings relative to GDP severely constrains the possibility of raising anticipated seigniorage revenues. For sake of simplicity we therefore neglect this component of the budget constraint. None of our results would significantly change if we modeled seigniorage revenues. The proof of this claim is available on request.

[9] For sake of simplicity we assume that the union goods market is fully integrated and perfectly competitive.

$$
\begin{aligned}
W_t^i &= \sum_{s=0}^{\infty} \beta^s L_{t+s}^{G_i} \\
L_{t+s}^{G_i} &= \frac{1}{2}\left[\left(y_{t+s}^i\right)^2 + k_1\left(G_{t+s}^i - \tilde{G}\right)^2 + k_2\left(\pi_{t+s}^B - \tilde{\pi}\right)^2 + k_3\left(D_{t+s}^i - \tilde{D}\right)^2\right]
\end{aligned}
\tag{3}
$$

where $\beta$ is the discount factor. The terms $\tilde{\pi}$ , $\tilde{G}$ and $\tilde{D}$ define respectively the policymaker's targets for inflation, public expenditures and debt. For the sake of simplicity, we postulate that policymakers' preferences are symmetric across the countries.

The assumption that the loss function is quadratic in output, expenditures and inflation is standard in the literature since the seminal contribution of Alesina and Tabellini (1987)[10]. The inclusion of a quadratic term in debt is perhaps more controversial and requires some discussion, although it can be found in Tabellini (1986). The argument is better understood discussing what happens when it is postulated that $k_3 = 0$ and the policymaker retains full discretion in the conduct of both fiscal and monetary policy, as in Jensen (1994). In this case re-invested budget surpluses build up a stock of negative debt in steady state, earning the income necessary to entirely finance the desired level of expenditures. As a result, tax distortions and inflation disappear. It is intuitively obvious that Jensen's result cannot hold if the policymaker pursues a non-negative debt target, as in (3). The persistence of excessive debt levels – which cause steady-state tax distortions – has several explanations. It may be seen as the consequence of electoral competition when policymakers disagree about the composition or the level of public expenditures (Alesina and Tabellini, 1989; Persson and Svensson 1989). To account for it, another strand of literature emphasises the role of intergenerational conflict (Cukierman and Meltzer, 1989). A non-distortionary steady-state equilibrium implies that current generations bear the costs of running budget surpluses in order to relieve future generations from the burden of distortionary taxation. This outcome might hold in a world where generations are altruistically linked through bequests, so that the intertemporal

[10] Quadratic formulations of the loss function may look unduly restrictive. However (3) may be viewed as an acceptable approximation to a more general utility function. With this justification, the policymaker's loss functions is assumed to be quadratic even in models that explicitly model the representative agent's preferences (Rotemberg and Woodford, 1997, 1999; Dixit and Lambertini, 2000).

distribution of deficits only responds to efficiency considerations. Yet, fiscal policy may be biased towards excessive debt accumulation if some individuals are bequest constrained – i.e. they would like to borrow from future generations leaving negative bequests. In fact, public debt policy allows bequest-constrained individuals to raise their consumption levels at the expenses of future generations. This happens because deficits are used to subsidise the consumption of bequest-constrained agents, whereas debt will partly substitute capital in the portfolio of non bequest-constrained individuals.

Thus, the loss function (3) may be interpreted as follows: *i)* the target $\tilde{D}$ defines the level of debt which would emerge if non-distortionary taxes were available in a world where bequest-constrained individuals affect politico-economic equilibria; *ii)* $k_3$ represents the political cost of tolerating debt deviations from $\tilde{D}$[11]. Finally, the literature on fiscal policy games has pointed out that political incentives induce governments to postpone fiscal adjustment, causing excessive reliance on debt to finance expenditures. To capture this effect, we assume that the government discount factor is inefficiently low, i.e. $\beta < \beta^*$[12] (Beetsma and Bovenberg, 1997).

Monetary policy is delegated to an independent central bank, who directly controls the inflation rate. The central bank loss function is:

$$W_t^B = \sum_{s=0}^{\infty} \left(\beta^B\right)^s L_{t+s}^B$$
$$L_{t+s}^B = \frac{1}{2}\left[\frac{1}{n}\sum_{i=1}^{n}\left(y_{t+s}^i\right)^2 + \gamma k_2\left(\pi_{t+s}^B - \tilde{\pi}\right)^2\right] \qquad (4)$$

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[11] This is an admittedly rough-and-ready way to incorporate adverse political incentives into the policymaker's behaviour and to obtain the persistence of inefficient tax distortions in steady-state equilibrium. We adopt it because extending the Cuckierman and Meltzer framework to account for distortionary taxation and time–inconsistency in monetary policy would quickly render their model unsuitable for the analysis of monetary regimes. By the same token, explicitly modeling electoral incentives as in Alesina and Tabellini (1988) would unnecessarily complicate the algebra unless one made the additional assumption that central bank policies affect electoral outcomes. Exploring such an hypothesis is beyond the scope of this paper.

[12] A policy maker's discount factor may vary over time. In particular it may be closer to the social optimum at the beginning rather than at the end of her term in office. As electoral cycles differ across countries, it may well be the case that in each period policymakers from different countries exhibit a different discount factor . Still, allowing for this possibility would not alter the conclusions of the model.

where the parameter $\gamma > 0$ accounts for idiosyncratic central bank aversion to inflation without necessarily implying weight-conservatism.

### *3. The policy game*

The policymakers and the central bank minimise (3) and (4) respectively. We assume that the fiscal and monetary authorities act non co-operatively. We then focus on a Nash-Markov equilibrium characterised by a combination of $\tau_t^i, \pi_t^B, D_t^i$ for $i = 1.....n$ such that[13]:

i) $\tau_t^i$, $D_t^i$ minimise (3) taking as given $\pi_t^B$ and $\tau_t^j, D_t^j$ for any $j \neq i$; and

ii) $\pi_t$ minimises (4) taking as given $\tau_t^i$, $D_t^i$ for $i = 1.....n$.

Let us start with the analysis of monetary policy. By taking the national debt stocks as given, the central bank ignores the intertemporal effects of monetary policy actions. Therefore the first order condition for monetary policy is static:

$$\frac{1}{n}\sum_{i=1}^{n} y_t^i + \gamma k_2\left(\pi_t^B - \tilde{\pi}\right) = 0 \qquad (5)$$

Condition (5) equates the marginal costs of inflation to the perceived benefits in terms of output expansion following a monetary surprise.

As for fiscal policy, observe that in each country taxes will be set to equate the marginal benefits of a tax-financed increase in expenditures to the marginal costs of higher taxes, i.e. the ensuing output distortions:

$$-y_t^i + k_1 g_t^i = 0 \qquad (6)$$

where $g_t^i = \left(G_t^i - \tilde{G}\right)$.

From (5) and (6), the open-loop rules for taxes and inflation are as follows:

$$\tau_t^i = -k_1 g_t^i + \varepsilon_t^i + \pi_t^B - E\left(\pi_t^B\right) \qquad (7)$$

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[13] This characterisation is identical to Beetsma and Bovenberg (1997).

$$\pi_t^B = \tilde{\pi} - \frac{k_1}{\gamma k_2}\frac{1}{n}\sum_{i=1}^{n} g_t^i \qquad (8)$$

The analysis of debt policy requires a careful discussion. Beetsma and Bovenberg (1997) point out that delegation to an independent central bank induces strategic use of the debt policy, in order to influence next period expected inflation while current inflation is taken as given. If expected future inflation is deemed excessively high by the fiscal authority, the latter cuts down the amount of debt-financed expenditures. This policy reduces future tax distortions and inflation expectations, but increases current levels of taxes and inflation[14]. For any $i = 1.....n$, the first order condition for debt policy in period *t* is:

$$k_1 g_t^i + k_3\left(D_t^i - \tilde{D}\right) + \beta\frac{\partial E_t L_{t+1}^{G_i}}{\partial D_t^i} = 0 \qquad (9)$$

where

$$\frac{\partial E_t\left(L_{t+1}^{G_i}\right)}{\partial D_t^i} = -k_1(1+r)\rho E_t\left(g_{t+1}^i\right) \qquad (10)$$

The term $\rho = \left(1 + \frac{k_1}{n^2\gamma^2 k_2(1+k_1)}\right)$ captures the *perceived* effect of a change in current debt policy on inflation expectations. As shown in Beetsma and Bovenberg (1997), it is decreasing in *n* because governments do not internalise the effects of other fiscal policymakers actions on inflation expectations. Thus, incentives to accumulate debt increase when national policymakers act non-cooperatively.

Making use of (1), (2), (5), (6) (9) and (10), the solutions[15] for debt, expenditures and inflation are as follows:

$$\hat{d}_t = \frac{(1+r)}{\hat{\Theta}}\hat{d}_{t-1} - \frac{(1+\hat{\mu})}{\hat{\Theta}}\varepsilon_t \qquad (11)$$

---

[14] Equations (7) and (8) confirm that a fall in expenditures is matched by an increase in taxes.

[15] As the equilibrium is symmetric, we omit the country suffix.

$$\hat{g}_t = E(\hat{g}_t) + \frac{\hat{\Theta}-1}{\hat{\Theta}}\frac{(1+\hat{\mu})}{(1+k_1)}\varepsilon_t \tag{12}$$

$$E(\hat{g}_t) = \hat{g}_{ss} - \frac{\hat{\Theta}-1}{\hat{\Theta}(1+k_1)}(1+r)\hat{d}_{t-1} \tag{13}$$

$$\hat{D}_{ss} = \left\{\tilde{D}\frac{k_3}{k_1} - \frac{\tilde{G}}{r}\left[(1+r)^2\beta\rho - (1+r)\right]\right\}\left[\hat{\Theta} - (1+r)\right]^{-1} \tag{14}$$

$$\hat{g}_{ss} = -\frac{k_3}{k_1}\frac{\left(\tilde{D}r + \tilde{G}\right)}{\left[\hat{\Theta} - (1+r)\right]} \tag{15}$$

$$\hat{\pi}_t = E(\hat{\pi}_t) + \hat{\mu}\varepsilon_t \tag{16}$$

$$E(\hat{\pi}_t) = \tilde{\pi} - \frac{k_1}{\gamma k_2}E(\hat{g}_t) \tag{17}$$

where:

$d_t = (D_t - D_{ss})$

$$\hat{\Theta} = (1+r)^2\beta\left[1 + \frac{k_1}{n^2\gamma^2 k_2(1+k_1)}\right] - \frac{k_1}{n^2\gamma^2 k_2(1+k_1)} + \frac{k_3}{k_1}(1+k_1)$$

$$\hat{\mu} = -\frac{k_1}{n\gamma k_2\left[(1+k_1)\frac{\hat{\Theta}}{\hat{\Theta}-1} + \frac{k_1}{\gamma k_2}\right]}$$

Equation (11) defines debt dynamics, which are stable if $\hat{\Theta} > (1+r)$. We assume this to be the case. Equations (14) and (15) identify the steady-state levels of debt and expenditures, $\hat{D}_{ss}$ and $\hat{g}_{ss}$ respectively. It is easy to see that a negative expenditure gap and tax distortions persist in steady state unless $\tilde{D} = -\tilde{G}/r$.

Turning to the analysis of deviations from the steady state, observe that $\hat{\Theta}$ is increasing in $\beta$ and decreasing in $n$[16]. Thus, the more short-sighted are the governments relative to a social

[16] This is true for $(1+r)^2\beta > 1$, which we assume to hold. In fact, Tirelli (2000) shows that failing this condition the intertemporal budget constraint is satisfied only under a balanced budget rule.

planner ($\beta < \beta^*$) or the larger is the union, the stronger is the persistence of debt deviations from steady state (equation 11). Therefore, for any *n*, the debt dynamics are inefficient as long as $\beta < \beta^*$. The sensitivity of expenditures to the current debt burden (equation 12) may be interpreted instead as follows. A change in $(1+r)E(d_{t-1})$ must be matched by a symmetric adjustment in the present value of current and expected primary surpluses, which is measured by $\left\{-(1+k_1)\left(\frac{\hat{\Theta}-1}{\hat{\Theta}}\right)^{-1}E(g_t)\right\}$. The term $\frac{\hat{\Theta}-1}{\hat{\Theta}}$ defines the proportion of the total adjustment[17] implemented immediately. Such a proportion falls with the discount factor and the size of the union. It is easy to see that for $n=1$ we get the solution for the case of fiscal cooperation (Beetsma and Bovenberg, 1997). Taxes and expenditures become more sensitive to shocks, and steady state debt falls as a result.

### *4. The working of a deficit reversal rule*

So far we have characterised an equilibrium which is inefficient due to *i)* an excessive debt target; *ii)* a downward biased discount factor. Let us assume that a commitment technology exists such that a debt target may be imposed on the fiscal policymaker and that any discretionary choice of financing current expenditures by means of debt must be reversed in the future at the rate $\alpha$. In this case, the intertemporal first order condition for debt becomes:

$$k_1 g_t + k_3\left(D_t^i - \tilde{D}^T\right) - \beta k_1 E_t\left(g_{t+s}^i\right)\rho\alpha(1+r) = 0 \qquad (18)$$

It is straightforward to show that by setting $\tilde{D}^T = -\tilde{G}/r$ and $\alpha = \beta^*/\beta$, we obtain:

$$\bar{d}_t = \frac{(1+r)}{\bar{\Theta}}\bar{d}_{t-1} - \frac{(1+\bar{\mu})}{\bar{\Theta}}\varepsilon_t \qquad (19)$$

---

[17] Observe that $(\hat{\Theta}-1)/\hat{\Theta} > 0$ is a necessary condition for stability. It is interesting to observe that the stability condition $\hat{\Theta} > (1+r)$ can be reinterpreted as a ceiling to the proportion of adjustment shifted onto the future.

$$\bar{g}_t = E(\bar{g}_t) + \frac{\bar{\Theta} - 1}{\bar{\Theta}} \frac{(1+\bar{\mu})}{(1+k_1)} \varepsilon_t \tag{20}$$

$$E(\bar{g}_t) = \bar{g}_{ss} - \frac{\bar{\Theta} - 1}{\bar{\Theta}(1+k_1)} (1+r) \bar{d}_{t-1} \tag{21}$$

$$\bar{D}_{ss} = \left\{ \tilde{D}^T \frac{k_3}{k_1} - \frac{\tilde{G}}{r} [(1+r)\alpha\beta\rho - (1+r)] \right\} [\bar{\Theta} - (1+r)]^{-1} \tag{22}$$

$$\bar{g}_{ss} = 0 \tag{23}$$

$$\bar{\pi}_t = E(\bar{\pi}_t) + \bar{\mu}\varepsilon_t \tag{24}$$

$$E(\bar{\pi}_t) = \tilde{\pi} \tag{25}$$

where:

$$\bar{\Theta} = (1+r)\beta * \left[ 1 + \frac{k_1}{n^2 \gamma^2 k_2 (1+k_1)} \right] - \frac{k_1}{n^2 \gamma^2 k_2 (1+k_1)} + \frac{k_3}{k_1} (1+k_1)$$

$$\bar{\mu} = -\frac{k_1}{n\gamma k_2 \left[ (1+k_1) \frac{\bar{\Theta}}{\bar{\Theta} - 1} + \frac{k_1}{n\gamma k_2} \right]}$$

Fiscal distortions are completely eliminated, the expenditure gap is nil in steady state and the excessive persistence of debt dynamics disappears. Note that the framework can be generalised to one where the shocks are persistent rather than white noise, and that this will imply an optimal path for expenditure which will remove the fiscal distortions.

### *5. Implications for EMU*

For practical purposes, the above proposal is easily modified to make it compatible with current EMU institutional arrangements. In fact, for any given level of debt inherited at the inception of the scheme, the debt target can be translated into a sequence of deficit targets. Then, EMU institutions should force each country to reverse past deviations from the announced deficit target at a predetermined rate. In particular, an unexpected deficit increase at time *t* should be reversed by an

adequate correction of subsequent deficits, such that the autoregressive pattern of debt deviation from steady state is given by $(1+r)/\overline{\Theta}$, as in equation (22).

The crux of the matter is obviously whether the enforcement technology would be effective in ensuring that a sequence of deficit targets following a shock (a one-off or persistent shock) is adhered to by each country. Two points can be made about this. First, if the enforcement mechanism envisaged for the SGP through the EDP (i.e. monetary sanctions and reputational costs attached to a breach of the 3% ceiling) is already considered to be effective, similar arrangements could be put in place for the simple rule proposed here. Countries deviating from a planned sequence of deficit targets could incur fines. Second, if the shock $\varepsilon_t$ were private information to the fiscal policymakers, an incentive would obviously exist to fudge the scheme by distorting information, and delaying adjustment indefinitely. In our view, national data are almost common knowledge among the relevant institutions (the European Commission, the ECB, the European Council). By initiative of the European Commission, further progress in this direction is already under way[18]. Once national shocks are *de facto* common knowledge, as it is the case in EMU, a system of checks and balances is what is required to induce national governments to adopt adequate stabilisation policies. In the following, we present an arrangement that achieves this goal introducing limited adjustments in the EMU institutional set-up.

**Binding announcements.** The centrepiece of our proposal is that each government is required to announce a multi-year sequence of deficit targets. These targets constitute a precommitment on the part of the fiscal authorities, and are *ex post* to assess their actual behaviour. For these targets to be credible an institutional set-up is needed that ensures that deviations from target are not systematically disregarded. The literature on the optimal trade-off between credibility and flexibility suggests that ex-post deviations of actual policies from announced targets should be made "costly" (Lohmann 1992). This is essentially the spirit of the SGP and we agree with it. Still,

[18] See European Commission (2001a).

deviations from announced targets can be made costly without giving up flexibility. A country willing to exceed the announced deficit targets should obtain the approval of the other Union members. Moreover, the required policy change should be accompanied by a specification of the subsequent correction in future deficit and expenditure levels consistent with the policy rules (19)-(21). These will become the new benchmarks for future policy assessments.

**Enforcement powers.** What the SGP and current EMU institutions arguably do not provide is adequate enforcement powers. The existing SGP ceilings will be breached in 2003 by France and Germany, having been breached in the past by Portugal, and Germany seems unlikely given its taxation reform plans to bring its deficit back below the ceiling even in 2004. The fact that the existing SGP has become discredited is not the only reason for the lack of enforcement. The one important lesson from central bank independence is that it has worked best where the central bank (or the members of its policy committee) are individually accountable to a higher authority[19]. The problem in the case of EMU is that there is no obvious higher authority. One alternative would be to constitute an independent body of experts who would judge whether deviations from planned deficit targets constitute a breach of the target (see e.g. Wyplosz, 2002). However, there is a strong feeling amongst EU countries that delegating these powers to a non-political body would be seen as undue interference by an unelected body in the fiscal affairs of the individual countries. This suggests that the enforcement has to continue to rely on peer review.

The Euro12-group could be called upon to express a binding opinion about (proposed) deviations from announced targets. Such an opinion will be based on EMU-wide macroeconomic implications of the new policy course. Should a country disregard the Euro12-group opinion, it would be subject to pecuniary sanctions. In contrast with the current arrangement (Artis and

[19] In the case of the Bank of England, the members of the Monetary Policy Committee are individually accountable to the UK Parliament.

Winkler 1998; Casella 1999), the implementation of sanctions should not be at the discretion, but automatic.

To avoid the pre-eminence of specific national interests within the Euro12-group, we propose that any decision should respect an equal treatment principle, i.e. countries experiencing similar cyclical conditions should be allowed a symmetric adjustment of their fiscal stances if they wish so. Decisions should be based on publicly disclosed motivations concerning the Union-wide effects of national policies and should take into account the ECB's opinion[20] about the inflationary consequences of the policy change. Finally, the European Commission should be appointed as agenda setter for the Euro12-group meetings[21].

**Surveillance procedure.** The Amsterdam Treaty (art. 99) assigns the European Commission with the task of monitoring economic developments and policies in member states. Given our emphasis on a broader set of policy targets, the Commission surveillance tasks should be extended accordingly. The European Commission (2001a) itself has recently put forward some practical suggestions aimed at improving EU budgetary surveillance. We favour the outright adoption of such proposals.

**Should the deficit ceiling be discarded altogether?**

One might argue that the arrangements proposed here could effectively restrain individual governments, but would provide little discipline in case of a multilateral decision to deviate from the rule[22]. This is the main weakness of peer review as opposed to the appointment of an independent commission to scrutinise fiscal targets. In this regard, the 3% deficit ceiling would

[20] At the present, the ECB plays a role in the policy coordination process via the Economic and Financial Committee (EFC). The latter consists of representatives of national administrations and central banks, of the European Commission and the ECB itself. The EFC has an advisory and preparatory role for the European Council meetings. Our proposal strengthens the ECB's role in the policymaking process, extending the accountability mechanism and favouring co-ordination between monetary and fiscal policy.

[21] At present, the Euro12-group meetings are chaired by one of the finance ministers of EMU members.

[22] In our model the effects of fiscal collusion are ambiguous. On the one hand, incentives to rely on debt financed expenditures fall because national governments correctly internalise the inflationary consequences of their actions. On the other hand, they might agree to postpone the deficit reversal scheme.

prove more difficult to elude, providing a simple, clear-cut rule that the public opinion can easily understand. This point cannot be easily dismissed. In our view, a country (a group of countries) should be allowed to increase its deficit beyond that ceiling if: *i)* the same country commits to a subsequent reversal along the lines spelled out above; *ii)* the remaining Euro12-group members agree to implement policies such that the Union-wide deficit does not exceed the 3% limit. This rests on the important argument that EMU price stability depends on the global fiscal stance (Von Hagen and Mundshenk 2001; Casella 2000b). As for decisions entailing a breach of the 3% deficit rule at the Union level, Onorante (2002) shows that empowering the ECB with the right to choose the excess deficit would entirely remove any spending bias and leave room for enough fiscal flexibility. This solution may not be feasible, as it would cause undue political pressures on the ECB. A viable alternative is to require that the Euro12-group and the ECB issue a public statement arguing the case for their preferred policy stances, leaving the final decision to a qualified majority within the Euro12-group.

***Conclusions***

Recent contributions emphasise that fiscal rules should be transparent, simple, flexible, enforceable, adequate for the final goal (Kopits and Symansky, 1998). Judged by these criteria, our proposal passes the test. Compared to the SGP, it leaves room for flexibility in bad times (when the SGP may prove unduly restrictive) and imposes discipline in good times (when the SGP cannot bite because it is asymmetric). Just like the SGP, our proposal leaves enforcement powers in the hands of the collective will of national governments. Thus the credibility of the scheme ultimately rests on the reputational damage that would derive from the breach of a rule which is widely understood.

Our scheme performs quite well also when compared to other reform proposals. Wyplosz (2002) argues that the task of setting budget deficits and achieving long term sustainability of the debt/GDP ratio should be delegated to an independent body, made accountable to the national

parliaments. As we point out in the paper, obtaining fiscal discipline need not require such a drastic reduction in the political control over the budgetary process, which may be unpalatable to national governments. Furthermore, our proposal entails a minimal adjustment in the institutional arrangements designed to supervise and regulate the conduct of EMU fiscal policies. By contrast, Wyplosz's scheme is inconsistent with the current EMU status quo, where the Council of Economic and Finance Ministers defines the Broad Economic Policy Guidelines (BEPGs).

Buiter and Grafe (2003), in the context of enlargement, point out that the Pact needs to be re-oriented towards fiscal sustainability. They suggest a 'permanent balance rule' for taxation which ensures government solvency, which can be augmented to target a particular debt-GDP ratio. Whilst this proposal is simple, in contrast to the analysis presented here, this simplicity is deceptive. It does not confront the problem of political distortions in fiscal policy-making, except through the implicit assumptions made by policymakers on the future paths of government spending and its components. Announcing a sequence of deficit targets, whilst apparently more complex, forces the fiscal authorities and the Euro-12 group to confront the underlying assumptions about macroeconomic shocks (and their persistence) and can accommodate the possibility of both short, sharp recessions, which will require large deficits which are quickly reversed, and shallow periods of stagnation with output below potential for a number of years, which require a more gradual adjustment. It combines flexibility with commitment.

The need to preserve the so-called golden rule of deficit financing motivates an alternative proposal. This proposal entails a dual budget scheme, where borrowing is allowed to finance public investment. Supporters of the SGP argue that implementing the golden rule would leave room to fudge the balanced budget rule for adopted for current expenditures and would probably bias public investment towards physical capital (Buti, Eijffinger and Franco, 2003). To escape such a criticism, Blanchard and Giavazzi (2003) suggest that a fraction of the national budgets devoted to developing infrastructure be assigned to an independent body operating at the EMU level.

Although we focussed on stabilisation policies, our proposal is robust to the introduction of deficit-financed investment. In fact, deficit targets could be easily revised to finance a temporary surge of public investment. Moreover, national debt and deficit targets could be designed taking into account the specific needs of lower-income countries, such as the accession countries, who may require faster accumulation of public capital. By the same token, our proposal can be amended also to meet the requirement that a budget rule should not hamper structural reforms (Razin and Sadka, 2002). In fact a specific provision should be made for governments that increase short-term deficits to implement reforms that are bound to improve the debt/GDP ratio in the longer run, such as pension reforms.

To conclude, the key message of the paper is quite simple. Instead of limiting fiscal discretion at the time when a policy change may be necessary, EMU institutions should bind later on, forcing national governments to stick to their promises. To achieve fiscal discipline, this probably is all that matters.

***References***


Alesina, A. and G. Tabellini (1987), Rules and Discretion with Noncoordinated Monetary and Fiscal Policies, *Economic Inquiry*, 619-30.

Alesina, A. and G. Tabellini (1989), A Positive Theory of Fiscal Deficits and Government Debt, *Review of Economic Studies, 57,* 403-414.

Bean, C. (1998), The Stability Pact: More than a Minor Nuisance? Discussion, Economic Policy, vol. 0, n.26, p. 64-67.

Beetsma, R. and A. L. Bovenberg (1997), Central Bank Independence and Public Debt Policy, *Journal of Economic Dynamics and Control*, 21, 873-894.

Beetsma; R. and Debrun, X. (2002), The Interaction between Monetary and Fiscal Policies in a Monetary Union: a Review of Recent Literature, in Beetsma R., Favero C., Missale A., Muscatelli V.A., Natale P. and Tirelli P. (eds.), *Fiscal Policies, Monetary Policies and Labour Markets. Key Aspects of European Macroeconomic Policies after Monetary Unification*, Cambridge University Press, forthcoming.

Blanchard, O. and Giavazzi, F. (2003) Improving the SGP through a Proper Accounting of Public Investment mimeo

Buiter, W. and Grafe, C. (2003) Patching up the Pact, mimeo. EBRD, London.

Buti, M., Eijffinger S. and Franco, D. (2003) Revisiting the Stability and Growth Pact: Grand Design or Internal Adjustment? European Commission, *Economic Paper* No 180, January.

Canzoneri, M. and Diba, B. T. (2001), *The SGP: delicate balance or albatross?*, in Brunila, A., Buti, M. and Franco, D. (eds.), *The Stability and Growth Pact: The Architecture of Fiscal Policy in EMU*, The Palgrave.

CESifo (2002), Special Report On The European Economy, downloadable from http://www.cesifo.de/

Cukierman, A., and A. Meltzer (1989), A Political Theory of Government Debt and Deficits in a Neo-Ricardian Framework, *American Economic Review*, 79, 713-748.

Dixit, A. and L. Lambertini (2000), Fiscal Discretion Destroys Monetary Commitment, WP http://econweb.sscnet.ucla.edu/lambertini/papers/eea2000.pdf.

European Commission (2000), Public Finances in EMU, *European Economy, n.3*.

European Commission (2001a), Public Finances in EMU, *European Economy, n.3*.

Jensen, H. (1994), Loss of Monetary Discretion in a Simple Dynamic Policy Game, *Journal of Economic Dynamics and Control*, 18, 763-779.

Koptis, G. and S. Symansky (1998), Fiscal Rules: Useful Policy Framework or Unnecessary Ornamement?, in *Fiscal Rules,* Banca d'Italia.

Persson, T. and L. Svensson (1989), Why a Stubborn Conservative Would Run a Deficit: Policy with Time Inconsistent Preferences, *Quartely Journal of Economics*, vol. 104, n. 2, p. 325-345.

Razin, A., and E. Sadka (2002), "The Stability and Growth Pact as an Impediment to Privatizing Social Security" *CEPR Discussion Paper3621*

Rotemberg, J. and M. Woodford (1997), An Optimization-based Econometric Framework for the Evaluation of Monetary Policy, *NBER Macroeconomic Annual*, 12, 297-346.

Rotemberg, J. and M. Woodford (1999), Interest-Rate Rules in an Estimated Sticky-Price Model, in J. Taylor, (ed.) Monetary Policy Rules, Chicago: University of Chicago Press.

Tabellini, G. (1986), Money, Debt and Deficits in a Dynamic Game. *Journal of Economic Dynamics & Control*. Vol. 10 (4), p 427-42.

Tirelli, P. (2000) Debt and Inflation Models Revisited. Should Fiscal Flexibility and Conservative Central Bankers Go Together? mimeo

Von Hagen, J. and S. Mundschenk (2001), The Functioning of Economic Policy Coordination, paper presented at the European Commission's workshop The Functioning of EMU: Challanges of the Early Years, 21 March 2001, ZEI WP B08-2001 downloadable from http://www.zei.de/.

Wyplosz, C. (2002), Fiscal Policy: Rules or Institutions?, paper prepared for the Group of Economic Analysis of the European Commission, April.

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