

***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 sequential 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<sup>1</sup> (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<sup>2</sup>. 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<sup>3</sup>.

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

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<sup>1</sup> 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.

<sup>2</sup> 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%).

<sup>3</sup> 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.

monetary union<sup>4</sup>. Whilst this has created a general consensus on the need for fiscal discipline, the specific features of the SGP have been widely criticised.

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 it relies only on moral suasion or reputation-damaging peer pressure. They also point out that there is only 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 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). Recently the SGP failed the test many commentators argued long ago it would not pass: making large countries toe the line. In

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<sup>4</sup> For a comprehensive survey, see Beetsma and Debrun (2004).

November 2003, the European Council refused to endorse the Commission's prescriptions<sup>5</sup> requiring France and Germany, expected to breach the 3% ceiling for the third year in row, to revise downward their budget deficits for 2004. The decision opened a rift between the Council and the Commission. The latter has since appealed to the European Court of Justice to have the Council's decision redressed, maintaining it violates the SGP.

A revision of the Pact appears all the more urgent now that many observers deem it defunct<sup>6</sup>, and both academics and policy-makers have suggested a number of alternatives<sup>7</sup>. Many commentators point to the need to make the pact more focused on debt sustainability. In fact, it has recently been 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, which also takes account of debt levels, 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

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<sup>5</sup> There was no qualified majority at the Council meeting of 25 November 2003 on the Commission recommendations under Articles 104(8) and 104(9) of the Treaty in respect of either France or Germany. Belgium, Greece, Spain, the Netherlands, Austria and Finland voted in favour of the Commission recommendation under article 104(9) with Denmark and Sweden adding their voices to the resolution under Article 104(8), as non-euro members.

<sup>6</sup> See for instance 'Replacing the defunct Stability and Growth Pact', *The Economist*, 27 November 2003; 'Fiscal Felons are Free-Riding', *Financial Times*, 7 April 2004.

<sup>7</sup> See Buti, Eijffinger and Franco (2003) for a survey of recent proposals.

targets, but these deviations should then be reversed following a predetermined rule. The proposed rule ensures 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 member countries retain full discretion in the choice of temporary deviations from the announced paths, and the countries’ debt service position is factored into the rule.

In a nutshell, we argue that:

1. Governments should make binding announcements on the future reversal of temporary deviations from announced deficit targets, i.e. a rule for deficit targets. In the case of output falling below potential (due to negative shocks) governments would be allowed to deviate from announced deficit targets but would have to reverse these deviations according to a pre-announced path. If output turns out to be above expected levels (due to positive shocks) there would be a similar requirement to reformulate the deficit targets plan.
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.

It is important to note that in our proposal, as is the case with the SGP, enforcement of the rules is placed in the hands of the same countries called upon to comply with them. It follows that a majority in favour of sanctioning a non-complying member of the Union will form only if the benefits from censuring the member exceed the costs. Under the SGP, a breach of rules could materialize which would be in the best interest of the Union<sup>8</sup>. Under the rules envisaged in our

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<sup>8</sup> Indeed it could be argued that the qualified majority votes not to censure Germany and France in November 2003 are a case in point. It is interesting that no adverse market reaction preceded or followed the Council decision. Moreover, the concern expressed by the ECB President that the Euro could suffer against other currencies as a consequence of the Council’s decision has proved unwarranted.

proposal, deviations from announced targets may take place. The advantage of our proposal over the SGP is that these deviations will be given or denied approval on their own merit with respect the Union objectives, and on information about the nature of the shocks hitting individual countries and the union, rather than on the relation to some pre-set deficit target. When the link between approved deviations from announced targets and the Union overall objectives is made clear, reputational considerations are more likely to bite.

One potential objection to the contingent rule proposed here is that there might be asymmetric information among member countries. If macroeconomic conditions in member countries were private information to the fiscal policymakers, an incentive would obviously exist to fudge the scheme by distorting information, and delaying adjustment indefinitely. However, we do not regard this as a serious objection. In our view, national data are almost common knowledge among the relevant institutions (the European Commission, the ECB, the European Council). The level of independent scrutiny by independent experts of national fiscal policies is such that there is no informational advantage<sup>9</sup>. However, we do recognise that stricter supervision of national policies by European institutions is 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.

The remainder of the paper is organised as follows. Section 2 presents a model which we use to characterise the proposed policy rule. It embodies a number of the characteristics of standard political economy model, highlighting the distortions which policymakers face in deciding on fiscal policy. Section 3 solves the model for the case where there is a single central bank and several fiscal authorities acting non-co-operatively, and discusses the policy rules and the steady state solutions. This highlights the inefficiencies due to the distortions faced by the fiscal authorities. Section 4 shows how one could design a deficit rule that overcomes these inefficiencies. Section 5

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<sup>9</sup> Indeed, the Council's decision not to enforce the SGP in November 2003 had nothing to do with informational asymmetries between France and Germany and the other countries.

discusses how the deficit rule that is implied by the model could operate in practice, and discusses the implications for EMU institutional design. Section 6 concludes showing that our scheme fares quite well in comparison with other proposals for reforming the SGP. We also show that the framework can be easily amended to allow governments to 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<sup>10</sup>. In each of them, the government provides a certain amount of public goods  $G_t^i$  financed by means of distortionary taxes<sup>11</sup>  $\tau_t^i$  and public debt accumulation  $D_t^i$ . Hence government  $i$ 's budget constraint can be written as:

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

where  $D_t^i$  denotes the stock of government debt at the end of period  $t$  and  $r$  is the *real* rate of interest<sup>12</sup>.

The economy's supply function<sup>13</sup> is given by:

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

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<sup>10</sup> 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).

<sup>11</sup> Following Alesina and Tabellini (1987) we define  $\tau$  as a tax rate on the total revenue of firms.

<sup>12</sup> To limit analytical complexity, we assume that  $r$  is constant and government debt is fully indexed, as in Jensen (1994) and Beetsma and Bovenberg (1997). Relaxing this assumption by allowing non-indexed debt would not lead to different conclusions, but would create a further source of inflation bias, further complicate the dynamics of the model and might create the possibility of multiple equilibria in the model. The r.h.s. term of eq. (1) does not include seigniorage revenues. 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 modelled seigniorage revenues. The proof of this claim is available on request.

<sup>13</sup> For sake of simplicity we assume that the monetary union goods market is fully integrated and perfectly competitive.

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  $\pi_t^B - E(\pi_t^B)$ , where  $\pi_t^B$  is the inflation rate set by the union's central bank and  $E(\pi_t^B)$  is expected inflation.

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

$$W_t^i = \sum_{s=0}^{\infty} \beta^s L_{t+s}^{G_i} \quad (3)$$

$$L_{t+s}^{G_i} = \frac{1}{2} \left[ (y_{t+s}^i)^2 + k_1 (G_{t+s}^i - \tilde{G})^2 + k_2 (\pi_{t+s}^B - \tilde{\pi})^2 + k_3 (D_{t+s}^i - \tilde{D})^2 \right]$$

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)<sup>14</sup>. The inclusion of a quadratic term in debt is perhaps more controversial and requires some discussion, although it can be found in Tabellini (1986). To clarify the argument in favour of a quadratic term in debt, suppose 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

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<sup>14</sup> 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).

explanations<sup>15</sup>. 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 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  $\tilde{D}$ <sup>16</sup>. Finally, the literature on fiscal policy games has pointed out that political incentives induce governments to postpone fiscal adjustment, causing excessive

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<sup>15</sup> For a survey see Alesina and Perotti (1995).

<sup>16</sup> 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 Cukierman 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 modelling electoral incentives as in Alesina and Tabellini (1989) would unnecessarily complicate the algebra.

reliance on debt to finance expenditures. To capture this effect, we assume that the government discount factor is inefficiently low, i.e.  $\beta < \beta^*$ <sup>17</sup> (Beetsma and Bovenberg, 1997).

Monetary policy is delegated to an independent central bank, who directly controls the inflation rate. Thus,  $\pi_t^i = \pi_t^B$  and  $E(\pi_t^i) = E(\pi_t^B)$  for any  $i$ . The central bank loss function is:

$$W_t^B = \sum_{s=0}^{\infty} (\beta^B)^s L_{t+s}^B$$

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

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  $\tau_t^i, \pi_t^i, D_t^i$  for  $i = 1, \dots, n$  such that<sup>18</sup>:

- i)  $\tau_t^i, D_t^i$  minimise (3) taking as given  $\pi_t$  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  $i = 1, \dots, n$ .

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:

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<sup>17</sup> 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.

<sup>18</sup> This characterisation is identical to Beetsma and Bovenberg (1999).

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

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:

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

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

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

$$\tau_t^i = -k_1 g_t^i + \varepsilon_t^i + \pi_t^B - E(\pi_{t+1}^B) \quad (7)$$

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

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 the debt-financed expenditures. This policy reduces future tax distortions and inflation expectations, but increases current levels of taxes and inflation<sup>19</sup>. For any  $i = 1, \dots, n$ , the first order condition for debt policy in period  $t$  is:

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

where

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

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<sup>19</sup> Equations (7) and (8) confirm that a fall in expenditures below target is matched by an increase in taxes.

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 (1999), 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<sup>20</sup> for debt, expenditures and inflation are as follows:

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

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

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

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

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

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

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

where:

$$\hat{d}_t = (\hat{D}_t - \hat{D}_{ss})$$

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

<sup>20</sup> As the equilibrium is symmetric, we omit the country suffix.

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

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  $n^{21}$ . Thus, the more short-sighted are the governments relative to a social planner ( $\beta < \beta^*$ ) or the larger is the union, the stronger is the persistence of debt deviations from steady state (equation 11). Still, 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<sup>22</sup> implemented immediately. Such a proportion falls with the discount factor and the size of the monetary union. It is easy to see that for  $n=1$  we get the solution that would prevail in a regime of fiscal cooperation (Beetsma and Bovenberg, 1997). In this case, taxes and expenditures become more sensitive to shocks, and steady state debt falls as a result.

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<sup>21</sup> 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.

<sup>22</sup> 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.

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

The equilibrium solution to the model outlined in Section 3 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:

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

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

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

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

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

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

$$\bar{g}_{ss} = 0 \quad (23)$$

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

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

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 this framework can be generalised so as to deal with persistent rather than white noise shocks. In this case one can also derive an optimal path for expenditure which remove the fiscal distortions.

## **5. Implications for EMU**

The fiscal rule described in Section 4 (equations 19-21) is a contingent and inter-temporal rule, which sets out a sequence of deficit targets for the country in question which are dependent on the shocks,  $\varepsilon_t$ . The rules are not uniform for each country and one gets away from the ‘one size fits all’ property of the SGP: 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.

We now consider how a pact based on deficit rules could be implemented in practice, and made compatible with current EMU institutional arrangements. Then, EMU institutions should force each country to correct 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  $(1+r)/\bar{\Theta}$ , as in equation (22). Similarly, if a country experiences an unexpected positive shock, this should lead to a downward revision of the deficit targets, and an adjustment towards the previously announced targets at a pre-determined rate. Thus, the proposed rule overcomes a second problem with the SGP: that of asymmetry. Finally, the intertemporal nature of the rule stresses that any proposal to reform the SGP cannot be based on simple deficit targets (whether unadjusted or cyclically adjusted): it needs to recognise the fact that the profile and serial correlation of shocks can vary over time, and that a credible commitment to a fiscal framework requires governments to announce *a sequence of deficit targets* as opposed to some inflexible target.

### *5.1 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 binding announcement (a pre-commitment) on the part of the fiscal authorities, and they would have to be relied upon to assess their actual behaviour *ex post*. For these targets to be credible, an institutional set-up is needed to ensure 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). Whilst this is essentially in the same spirit as the SGP, deviations from announced targets can be made costly without giving up flexibility. Indeed, a rigid or inflexible rule such as that embodied in the current SGP in itself undermines the credibility of the Pact by creating a ‘credibility blemish’. In the deficit reversal rule proposed here, a country willing to exceed the announced deficit targets would need to obtain the approval of the other Union members. Moreover, the required policy change should be accompanied by a detailed specification of the subsequent correction in future deficit and expenditure levels, consistent with the policy reversal rules in (19)-(21). These will become the new benchmarks for future policy assessments.

In the introduction we noted that some observers have argued that a serious hindrance to any reform of the pact is asymmetric information among member countries. If the shocks  $\varepsilon_t$  were private information to the individual fiscal policymakers, an incentive would obviously exist to fudge the scheme by distorting information, and delaying adjustment indefinitely. However, we do not regard this problem as significant. National data are almost common knowledge among the relevant institutions (the European Commission, the ECB, the European Council), and different interpretations of the data were not at the heart of the decision not to enforce the SGP in 2003. By

initiative of the European Commission, further progress in this direction is already under way<sup>23</sup>.

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. Any decisions taken by Ecofin under the enforcement procedures (see below) could be made on the basis of an agreed source of information on national data.

Another important issue is how announcements of deficit targets would operate after changes in national governments. It is important to realise that the rule is designed as to eliminate fiscal distortions. Hence newly-elected governments could not be allowed to renege on past commitments on deficit targets, although of course they might want to engage in deficit-neutral taxation and expenditure policy changes. In order to ensure that the rule operates smoothly across national elections the enforcement mechanism described below would need to ignore changes of government. Indeed, the increased publicity which pre-commitments on deficit rules would generate might well enforce discipline around elections and reduce fiscal distortions due to partisan cycles.

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<sup>23</sup> See European Commission (2001).

## *5.2 Enforcement powers.*

What the SGP and current EMU institutions arguably do not provide is adequate enforcement powers. As noted above, the existing SGP ceilings have been breached in 2003 by France and Germany, having been breached in previous years by Portugal, but the Commission's recommendations have not been endorsed by the Council when they were significant<sup>24</sup>. 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<sup>25</sup>. 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 (a 'fiscal council' or 'sustainability council') who would judge whether deviations from planned deficit targets constitute a breach of the target (see e.g. Wyplosz, 2002, Fatas et al., 2003). 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, even where (Fatas et al., 2003) the council of experts only relies on the pressure of informed public opinion. This suggests that the enforcement has to continue to rely on peer review. We would not exclude the possibility that individual countries might choose to appoint their own national fiscal or sustainability councils to provide public pronouncements on their national policies and on governments' adherence to their public commitments to deficit targets. That is a matter for individual countries, and in some instances a public scrutiny of this type might be beneficial. However a supra-national body of

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<sup>24</sup> In February 2002 the Council received the Commission's recommendation that the early-warning procedure be initiated in the case of Portugal, but did not endorse the Commission's proposal. In November 2002 the Council did endorse the Commission's proposal that an excessive deficit be established in the case of Portugal, leading to the presentation of an alternative stability programme. The Council also made recommendations to Germany and France under the early warning system in January 2003, leading to public recommendations to both countries during 2003. However, as noted above none of the Commission's recommendations pursuant to Articles 104(8) and 104(9) of the EC Treaty were endorsed by the Council: these had asked Council to conclude that France and Germany had not complied with the recommendations of January 2003 and requiring particular corrective measures according to a detailed timetable.

experts would run into problems of political legitimacy and might lead to considerable resentment at national level.

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 (Casella 1999), the implementation of sanctions should not be at the discretion of the group, 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<sup>26</sup>. 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<sup>27</sup> about the inflationary consequences of the policy change. Finally, the European Commission should be appointed as agenda setter for the Euro12-group meetings<sup>28</sup>.

As noted earlier although our proposal, as it is the case with the SGP, places enforcement of the rules in the hands of national governments through Ecofin, the emphasis in our proposal is on a more detailed analysis of deficit targets and on corrections of these in the light of cyclical conditions. In contrast with the SGP, our proposal implies that deviations of policy from announced targets will be given or denied approval on their own merit with respect the Union objectives rather than on the relation they bear with a pre-set target deficit. When the link between approved

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<sup>25</sup> In the case of the Bank of England, the members of the Monetary Policy Committee are individually accountable to the UK Parliament.

<sup>26</sup> In the longer run one could also contemplate a move away from qualified majority voting towards simple majority voting to ensure an equal treatment principle, although we recognise that this would involve a major reform of the Treaties.

<sup>27</sup> 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 role in the policymaking process, extending the accountability mechanism and favouring co-ordination between monetary and fiscal policy.

<sup>28</sup> At present, the Euro12-group meetings are chaired by one of the finance ministers of EMU members.

deviations from announced targets and the Union overall objectives is made clear, reputational considerations are more likely to be important.

### *5.3 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 (2001) itself has recently put forward some practical suggestions aimed at improving EU budgetary surveillance. We favour the outright adoption of such proposals.

### *5.4 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<sup>29</sup>. 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 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 2000). As for decisions entailing a breach of the 3% deficit rule at the Union level, Onorante (2004) shows that empowering the ECB with the right to choose

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<sup>29</sup> 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.

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.

## **6. Conclusions**

Recent contributions emphasise that fiscal rules should be transparent, simple, flexible, enforceable, adequate for the final goal (Koptis 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. It is important to stress that the resulting rule is an intertemporal rule for deficit targets and for changes in deficit targets following a positive or negative shock. Given the intertemporal nature of the problem it would be undesirable to reform the SGP in such a way that it led to governments targeting fixed reference values for the deficit: in a sense we are asking governments to behave flexibly but more transparently and openly with respect to their fiscal policies, in a similar way that one might expect a well-designed central bank to act vis-à-vis inflation targets.

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. Similarly, Fatas et al. (2003) argue for a non-executive ‘sustainability council’ to act as judge over national public finances in EMU. 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, or establishing more supra-national authorities, which may lack political legitimacy and would 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, maintaining Ecofin at the centre of the macroeconomic decision-making stage.

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 ensuring government solvency and which can be augmented to target a particular debt-GDP ratio. Whilst this proposal is simple, in contrast to the arrangement presented here, its very 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, requiring large deficits to be quickly reversed, and shallow periods of stagnation with output below potential for a number of years, which require a more gradual adjustment. In fact, 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 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 have focused 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, which 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, Beetsma and Debrun, 2004). 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.

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