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Reconciling Stability and Growth: Smart Pacts and Structural Reforms

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This paper analyzes the decision by a government facing electoral uncertainty to implement structural reforms in the presence of fiscal restraints similar to the Stability and Growth Pact. To the extent that the reform package entails budgetary costs, the model shows that a fiscal pact erodes incentives to carry out structural reforms, sacrificing future growth for present stability. Although the pact effectively addresses the deficit bias resulting from electoral uncertainty, the induced reduction in reforms implies ambiguous welfare effects. We conclude that a "smart" (i.e., welfare-improving) pact should take into account the budgetary effects of structural reforms. Our conclusions are consistent with the actual principles guiding the implementation of the Stability and Growth Pact. [JEL E42, E61, F33]

Since the 1989 Delors Report set out the blueprint for European monetary unification, the imposition of institutional constraints on national fiscal policies has been a highly contentious issue. Following initial objections to the economic rationale for the excessive deficit procedure and the Stability and Growth Pact (SGP),[1] the debate has now shifted to the implementation of those arrangements

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[1]See, for instance, Artis and Winkler (1998); Eichengreen and Wyplosz (1998); Beetsma and Uhlig (1999); Brunila, Buti, and Franco (2001); and Debrun (2000).

and, in particular, the "flexibility" with which the SGP's sanctions should apply to member states failing to meet the agreed standards of fiscal discipline.

A first line of arguments calls for making the deficit cap explicitly contingent on business cycle developments to avoid forcing member states to run procyclical fiscal policies in bad times. A second line of arguments supporting amendments to the SGP concerns the failure to account for the overall "quality" of fiscal policy. (See Peletier, Dur, and Swank, 1999; Blanchard and Giavazzi, 2003; and Buti, Eijffinger, and Franco, 2003.) Currently, the SGP's provisions apply to deficits and debts without regard to the underlying policies.

In the wake of the problems experienced by some countries in adhering to the SGP, the pact's fixed numerical ceilings came under heavy attack from various quarters, resulting soon afterwards in the adoption of more flexible implementation principles.[2] The flexibility seeks to address the two arguments presented above and includes a greater emphasis on cyclically adjusted deficits and long-term fiscal sustainability. Moreover, recognizing that present fiscal imbalances may reflect progrowth policies (such as research and development expenditure, productive public investment, and the fiscal impact of structural reforms), countries with a sound budgetary position and a clear progrowth agenda would now be allowed to temporarily deviate from the "close-to-balance or in surplus" requirement.

This paper proposes a normative theory of fiscal restraints using a simple political-economy model of fiscal policy. We investigate the case for explicit authorizations to deviate from given deficit ceilings in case progrowth policies give rise to temporary fiscal deficits. This concerns a potentially wide array of structural measures such as tax reforms, welfare reforms, public investment projects, and labor and product market reforms. As the descriptive evidence gathered in Section I suggests, many desirable reforms could require temporarily higher structural deficits and therefore conflict with the core requirement of the SGP.[3] In that context, we show that a temporary relaxation of the deficit cap, conditional on reform efforts, would help lessen the resulting conflict between stability and growth.

The model describes the behavior of policymakers facing electoral uncertainty in a simple two-period framework. Electoral uncertainty leads the government to discount future economic outcomes at a greater rate than the public. As a result, too many current resources are spent on public good provision, leading to a deficit bias. Correspondingly, too little is spent on measures expected to increase future revenues, including structural reforms, productive investment, and higher education.[4]

To strengthen fiscal discipline, a "stability pact" penalizing deficits in excess of a certain threshold is implemented. However, the induced fiscal discipline comes at the cost of even lower structural reforms, because governments spread spending cuts over public goods as well as the outlays associated with structural reforms.

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[2]See, for instance, the European Commission's original proposal as described in press release IP/02/1742, "Commission calls for stronger budgetary policy coordination," available on the Internet at *http://europa.eu.int/rapid/start/cgi/guesten.ksh.*

[3]Similar concerns are expressed by Saint-Paul (2002b).

[4]As illustrated in Section I, this consideration goes well beyond the mere composition of public spending (i.e., the usual split between current and capital expenditure). For instance, in our view, a temporary increase in the coverage of the unemployment benefit system to compensate the public for a significant reduction in employment protection is qualitatively similar to an investment, because it indirectly contributes to the implementation of an important labor market reform.

Such fiscal pacts thus imply a trade-off between lower deficits and the exacerbation of the underreform bias, making their overall welfare effect ambiguous. It follows that the design of those pacts (or at least their implementation) could be improved by recognizing the budgetary implications of policies aimed at increasing future income.[5] Although absent from the present legal framework, more qualitative assessment of budgetary situations seems consistent with the new implementation principles adopted by the Council of Ministers of Finance and Economic Affairs of the European Union (ECOFIN). For example, in its November 2003 assessment of Germany's budgetary position, the ECOFIN invoked the "government proposals for structural reforms"[6] among the motives to suspend the implementation of the Excessive Deficit Procedure.

Section I of this paper presents descriptive evidence motivating the analysis. Section II describes the model, and Section III discusses its solution. In Section IV, we compare the solution under a government facing electoral uncertainty with the social planner's solution, after which we characterize the impact of a stability pact on the deficit and on structural reforms. The design of welfare-improving pacts is analyzed in Section V, and Section VI concludes.[7]

I. Budgets, Reforms, and Fiscal Pacts

This section motivates our conjecture that fiscal and structural policies are tightly linked and, in particular, that structural reforms may require temporary fiscal expansions.

Fiscal Implications of Structural Reforms

As is true for other economic policy choices, structural measures reflect cost-benefit analyses that blend economic arguments, distributive concerns, and political considerations. However, unlike other policies, the diversity of instruments—from employment protection regulations to the design of tax codes—and the complexity of the transmission channels to potential output make ex ante appraisals difficult.

To the extent that governments can affect the distribution of the costs and benefits of reforms—for example, through taxes and transfers—an interesting question is how structural policies may influence the budget. *Direct* linkages between structural and fiscal policies are easy to identify and often contribute to improving the fiscal balance. On the revenue side, obvious effects include the one-off proceeds from privatization, the permanent increase in tax revenues expected from higher potential output, and the impact of tax reforms. On the expenditure side, deregulation allows

[5]Blanchard and Giavazzi (2003) consider public investment.

[6]European Commission, press release C/03/320, "2546th Council meeting—Economic and Financial Affairs—Brussels, 25 November 2003."

[7]The details of the derivations and the proofs are contained in Appendix A, which is available from the authors upon request or from the following website: *http://www1.fee.uva.nl/toe/content/people/beetsma.shtm.* Also available upon request or from the same website are Appendix B (two examples), Appendix C (extensions), and a Data Appendix.

saving on monitoring and enforcement costs, while reforms themselves may involve cuts in distortionary subsidies and transfers such as overly generous unemployment benefits.

A more difficult task, however, is to evaluate the *indirect* fiscal implications of structural reforms, that is, those associated with the endogenous adjustment of optimal fiscal policy to shifts in structural policy. Here, two "intertemporal" arguments suggest that a greater structural deficit should accompany significant reforms.[8] First, when the gains from reforms materialize only in the future but the costs are felt immediately, compensating the losers should in principle be financed through future taxes on the expected winners, which in practice means through an immediate but temporary (assuming reforms deliver the expected gains) public debt accumulation. (See also Saint-Paul, 2002a, and Grüner, 2002.) Second, the expected increase in future tax revenues relaxes the short-term pressure of the solvency constraint, allowing for a looser fiscal stance without jeopardizing long-term sustainability. Hence, by bringing forward the gains from reforms, temporary fiscal deficits help make difficult reforms more easily acceptable to the public, without threatening the government's solvency.

As reforms put pressure on the budget balance, a conflict emerges between the member states' obligations under the SGP and the implementation of difficult but desirable reforms. In the European Commission's (2002) own words, one way to escape trading off lower deficits against fewer reforms is to allow for a "small temporary deterioration in the underlying budget position . . . , if it derives from the introduction of large structural reforms, like for example tax reform or a long term public investment programme. . . ."[9] The rest of this section further elaborates on the fiscal-structural policy mix.

Status Quo Bias and the Fiscal Implications of Reforms

Many euro area member states arguably suffer from pervasive structural inefficiencies, constraining their growth potential, fueling high unemployment, and impairing their economies' resilience in the face of shocks. Despite some progress over the last 20 years, labor and product markets remain insufficiently competitive, contributing to high labor costs and firms' pricing power. A simple comparison of structural indicators over time and across countries provides a broad idea of what has been achieved so far and what could be done in the least market-friendly economies.

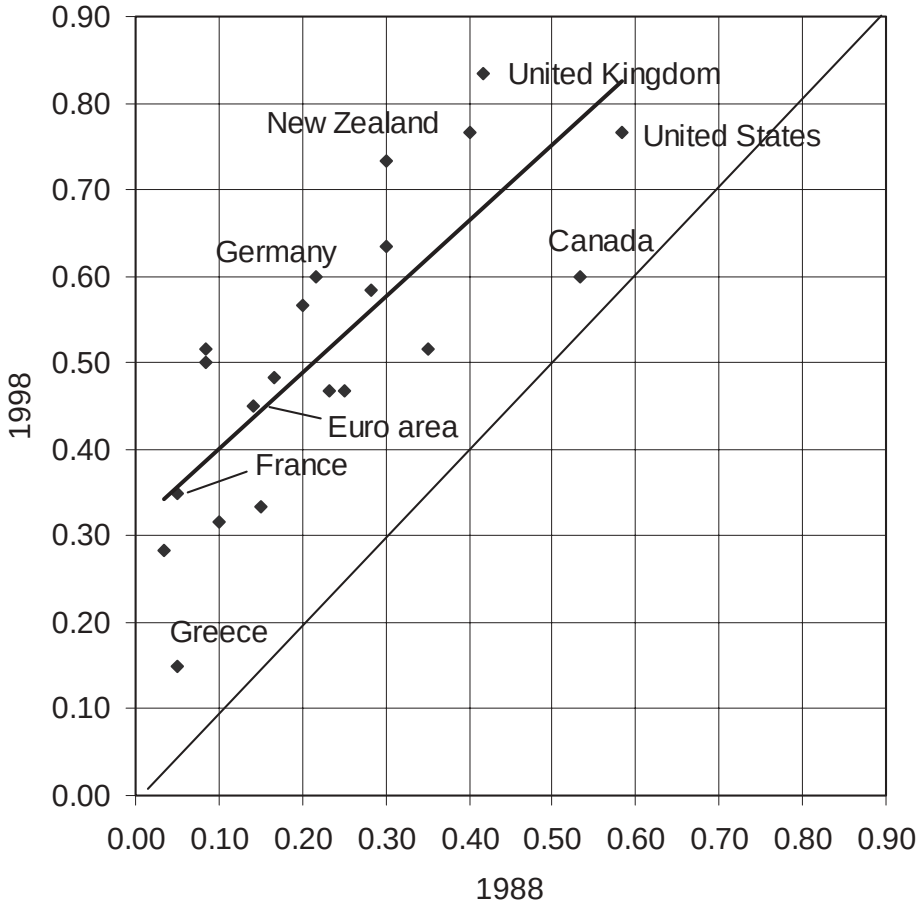
Figure 1a plots an index of product market regulation[10] in 1988 against its value in 1998 (latest available data) for 20 countries in the Organization for Economic Cooperation and Development (OECD) and the euro area. All the points are located above the 45-degree line, which indicates that notable progress was achieved in product market deregulation over the decade. However, as illustrated by the linear trend line that parallels the 45-degree line, economies in continental Europe contin-

[8] Saint-Paul (2002b) also argues that a short-run fiscal expansion should accompany structural reforms to prevent the deflationary pressures stemming from the negative output gap created by the increase in potential growth.

[9] Press release IP/02/1742, November 2002.

[10] See OECD (2002, p. 293). The original index has been rescaled so that 0 means no flexibility (maximum regulation) and 1 means full flexibility (minimum regulation). See the Data Appendix for details.

Figure 1. Structural Reforms in the OECD (1988–1998)
a. Product Market Flexibility



Source: OECD (2002), Nickell and Nunziata (2001).

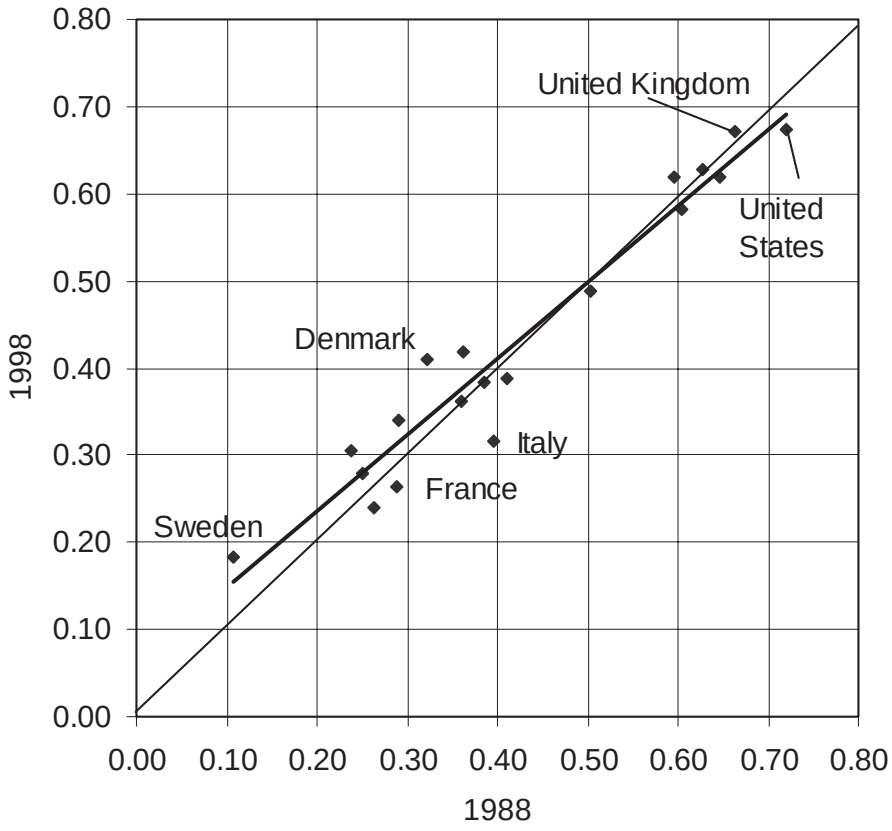
Note: Both the product market regulation and the labor market flexibility indices are on a scale from 0 to 1 and increasing in the degree of flexibility. The former index is calculated from OECD (2002). The labor market flexibility index is the simple average of 0–1 indices of employment protection, the benefit replacement ratio, and the tax wedge. All the original labor market variables are taken from Nickell and Nunziata (2001), with the 1998 values extrapolated using OECD data. The benefit replacement ratio is the average first-year unemployment benefit as a percentage of average earnings before tax; and the tax wedge is the sum of the employment tax rate, the direct tax rate, and the indirect tax rate, as calculated by Nickell and Nunziata (2001). See the Data Appendix for further details.

ued to lag behind the United States and the United Kingdom despite greater initial regulatory distortions, suggesting a status quo bias in reforms.

Figure 1b replicates the exercise with an aggregate index of labor market flexibility.[11] The figure shows either very slow progress in labor market reforms or even

[11] See the Data Appendix for details.

Figure 1. (*continued*)
b. Labor Market Flexibility



a slight worsening of labor market distortions, owing mainly to a rise in the tax burden affecting labor. Since a significant fall in unemployment is much more visible[12] and, therefore, politically more rewarding than a reduction in price markups (whose visibility is hindered by inflation and ongoing relative price movements), such developments may seem puzzling, especially in countries where unemployment remains stubbornly high. One plausible explanation lies in the short-run fiscal impact of labor market reforms, including the direct cost of a labor tax reform and the indirect costs incurred to enhance their political acceptability.

Our hypothesis of reform-induced fiscal expansions reflects the design and implementation of an "average" reform package in "normal" times. It is obviously less appropriate for situations in which political deadlocks over large reform packages exist. In such cases, governments might prefer delaying the reforms until the costs of status quo are sufficiently large to create a broad consensus (e.g., acute

[12]Numerous studies have shown that labor reforms would indeed result in lower unemployment; see, for instance, Nickell and Layard (1999), Belot and van Ours (2000), Blanchard and Wolfers (2000), Nickell and others (2002), OECD (2002), European Commission (2002), and International Monetary Fund (2003).

crisis or prolonged stagnation), with little need for the government to absorb adjustment costs. Also, there might only be a small number of losers—by analogy with the "non-Keynesian" (or wealth) effects of large fiscal contractions—as upbeat expectations might give an instant boost to investment and consumption. Yet, minimizing the conflict between reforms and fiscal probity could still reduce the probability of such crisis scenarios.

Up-Front Costs, Long-Term Benefits, and Fiscal Policy: Some Illustrations

The discussion in the previous section suggests that it should be harder to achieve costly structural reforms when the budget constraint is tight. To confront that proposition with the data, we looked at the relationship between reforms (standardized changes in the structural indices for product market regulation and labor market flexibility—see the Data Appendix for details) and an indicator of fiscal adjustment based on the change in the cyclically adjusted primary balance, both calculated over the period 1988 to 1998. Positive values mean either above-average reforms or above-average increases in the cyclically adjusted primary surplus. Figure 2a depicts the unconditional correlation between fiscal adjustment and labor market reforms. In line with our hypothesis, it appears that stronger fiscal adjustments (indicating tighter budget constraints) are associated with less ambitious labor reforms. The relationship is particularly strong when labor tax reform is considered (Figure 2b), indicating that fiscal adjustments were partly achieved at the cost of increasing the labor tax wedge (i.e., the difference between the consumption wage and the real product wage). Not surprisingly, tax policy may thus be the most significant area of conflict between fiscal probity and labor reforms. A negative correlation, albeit weaker, was also found between product market reforms and fiscal adjustment.

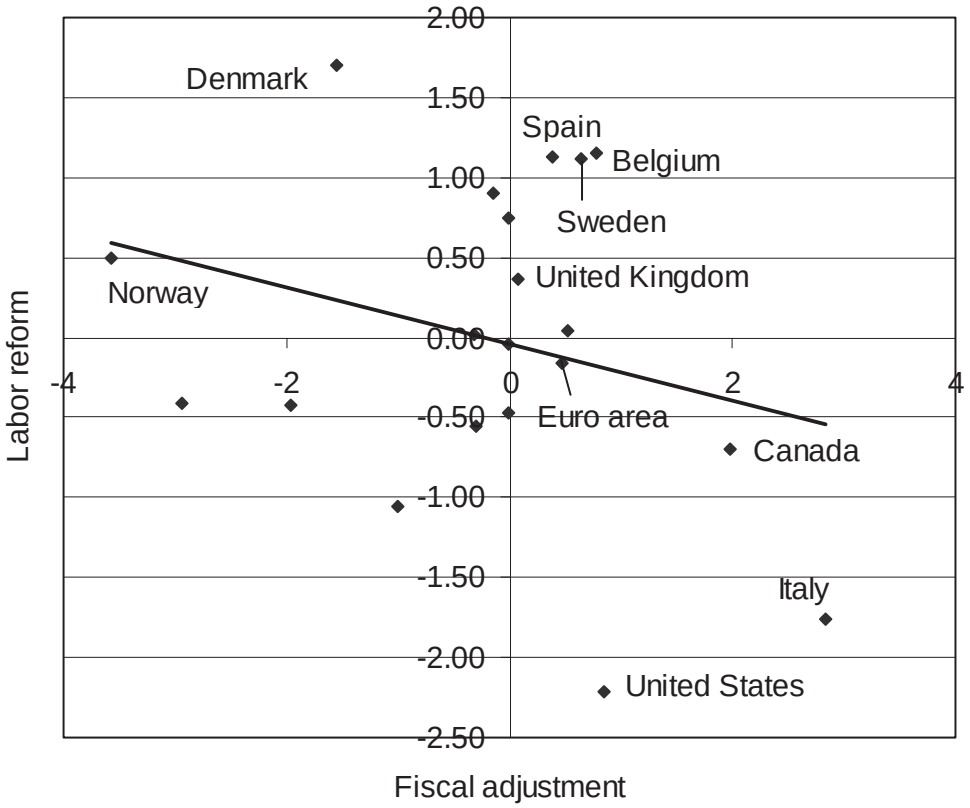
Turning to more anecdotal evidence, one interesting illustration of the fiscal-structural nexus is the so-called "job-rich" growth episode in France (1997–2000), for which detailed background information can be found in IMF (2002). The accelerated pace of job creation during that period was the result of wage moderation combined with targeted cuts in social security contributions and increased flexibility in working time. On the revenue side, these developments led to a boost in fiscal revenues. On the expenditure side, however, a series of new spending programs suggest an attempt by the government to broaden the public's support for a policy package that included wage moderation and greater flexibility in working schedules, two relatively unpopular measures.

First, discretionary spending on poverty and long-term unemployment transfers increased significantly. This explains why, despite strong employment growth, total spending on unemployment and poverty fell only by 0.2 of a percentage point of GDP[13] between 1997 (a peak in unemployment) and 2000. The rapid improvement in labor market conditions would have led one to expect a more significant reduction. Second, other initiatives aimed at directly boosting short-term job cre-

[13]From 4.3 percent of GDP to 4.1 percent.

Figure 2. Fiscal Adjustment and Labor Market Reforms in the OECD (1988–1998)

a. Labor Market Flexibility



Source: OECD *Economic Outlook.*

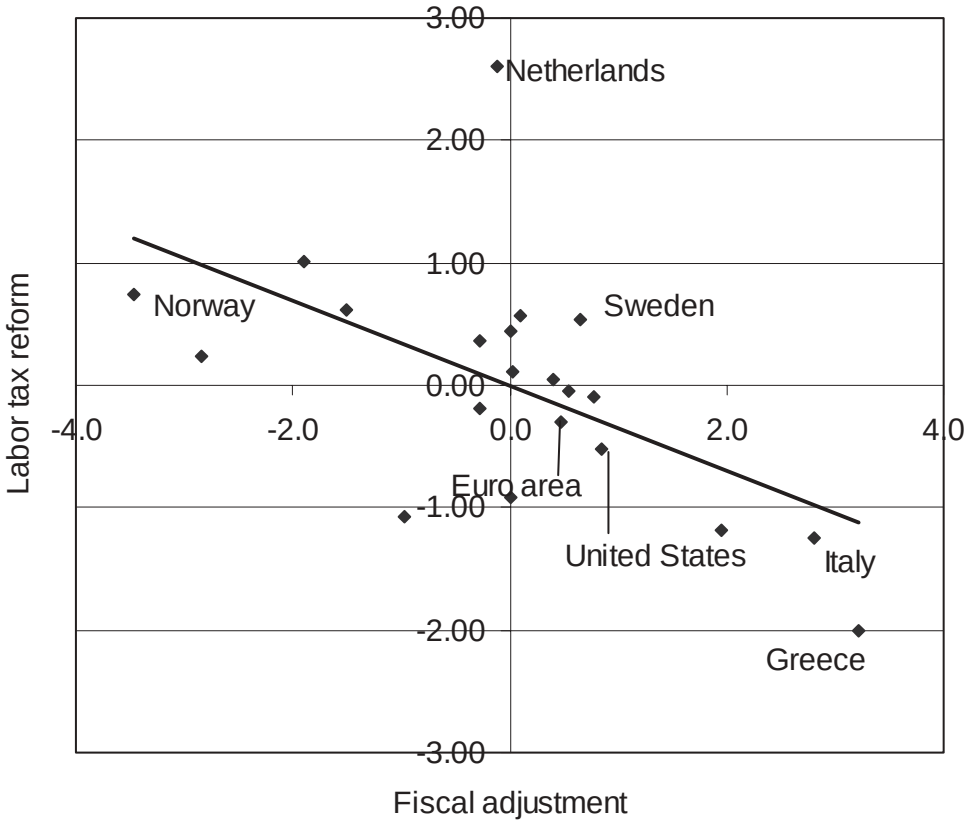
Note: Fiscal adjustment is measured as the change in the standardized value of the cyclically adjusted primary surplus (in percent of potential GDP) between 1988 and 1998. A larger value corresponds to greater adjustment. Reform is measured as the (standardized) change in the structural indicator divided by the initial distance from perfect market flexibility. A higher value corresponds to more reform. For more details, see the note to Figure 1 and the Data Appendix.

ation (again making the reforms more easily acceptable) were implemented. For example, conditional cuts in social security contributions for low-skilled workers[14] resulted in additional spending equivalent to 0.8 percent of GDP in 2000. In the same vein, active labor market policies were reinforced, further increasing outlays.

Other labor market reforms may have a less direct, but nevertheless significant, impact on the budget. For instance, a relaxation of employment protection legislation—for example, through the promotion of fixed-term contracts or a

[14]The condition to benefit from the contribution cut was that employers switched to the 35-hour workweek and committed to create new jobs.

Figure 2. (*continued*)
b. Labor Tax Wedge



reduction in severance costs—has often been advocated as a key proemployment measure. What might be the budgetary implications of such a measure? In the short term, expenditures might increase as a result of a temporary rise in unemployment because firms would find it less costly to reduce overmanning. In addition, demands for more generous unemployment insurance would probably increase as workers perceive a greater unemployment risk.

Labor market data indeed suggest a trade-off between employment protection and the generosity of unemployment insurance among industrial countries (Blanchard, 2002). Table 1 provides an indicative quantification of that trade-off based on a sample of 20 OECD countries between 1960 and 1998 (see the Data Appendix). In a simple linear model explaining the unemployment benefit replacement ratio, the estimated coefficient for employment protection is negative and highly significant. On the basis of these estimates, we find that a reduction in the index of employment protection by one standard deviation (calculated over the entire panel) would raise the ratio of unemployment benefits over past earnings by more than 11 percentage points. In the case of France, for instance, that would

Table 1. Trade-Off Employment Protection vs. Unemployment Benefit Ratios
(Dependent variable: unemployment benefit replacement ratio)

Explanatory Variables	Coefficients	Robust *t*-statistics
Employment protection (EP)	–18.76	–5.19
Union density (UD)	–1.25	–16.34
Index of bargaining coordination (BC)	30.96	16.91
BC squared	–8.51	–13.14
Tax wedge (TW)	–0.40	–5.94
Adjusted R-squared (unweighted)	0.74	
Number of observations	745	

Notes: (1) Unbalanced panel estimates using Generalized Least Squares. The model follows for fixed effects and interaction variables (not reported here) to capture as much as possible the heterogeneity among the various institutional frameworks. (2) Standard errors have been corrected for heteroscedasticity. (3) For a description of the tax wedge and the employment protection index, see the Data Appendix. Union density is measured as the ratio between total union members and wage and salaried employees, while the index of bargaining coordination, constructed on the basis of OECD data, increases in the degree of coordination on the side of both employers and unions. These two indices were compiled by Nickell and Nunziata (2001) until 1995 and extrapolated from recent OECD data.

mean an average increase in unemployment transfers by 20 percent and a likely budgetary impact of about 0.25 percent of GDP.[15]

Reconciling Stability and Growth

The stylized facts presented above match our presumption of significant linkages between fiscal and structural policy choices and point to the desirability of fiscal flexibility in case substantial reform packages need to be implemented. In line with these findings, we argue that inflexible numerical ceilings on deficits might unduly constrain the design and implementation of structural reforms needed to boost potential growth in the euro area, especially in the labor market.

The fiscal-structural nexus appears to be even more critical for properly assessing the budgetary situation in the accession countries of Central and Eastern Europe, where considerable structural adjustment is still under way. More generally, due attention to the fiscal impact of well-designed structural reforms should be an important ingredient in the *implementation* of the SGP. This could be the key to ensure the consistency between the two stated objectives of the SGP, namely, the promotion of growth and stability. The next section proposes a theoretical model rationalizing that argument.

II. The Model

We consider a simple two-period model in which the budget constraints capture both the short-run and the long-run effects of structural reforms. The model describes in the simplest possible way the potential tension between the imposi-

[15]That estimate does not factor in the short-term effect on unemployment. In 2000, French outlays for unemployment insurance amounted to 1.2 percent of GDP (IMF, 2002).

tion of fiscal restraints analogous to the SGP and the incentives of a government to carry out structural reforms leading to a significant fiscal expansion in the short term.

The analysis presents the case of a country participating in a monetary union along with a large number of perfectly identical neighbors. A stability pact is designed and enforced by an unelected supranational authority. To avoid needless analytical complications, we ignore cross-border spillovers from fiscal discipline, so that the stability pact serves only as an external device for tying the hands of national governments. While there is substantial disagreement among economists about the importance of these spillovers, they could in principle be introduced in the same fashion as in Beetsma and Uhlig (1999). Also, we strictly focus on the relationship between the fiscal regime and the incentives to carry out reforms so that our assumption about the monetary regime (a monetary union) plays no role here.[16]

Finally, to better focus on the effects of a stability pact on equilibrium policies, we abstract from explicitly modeling the conflicts among social groups that may motivate the fiscal expansion accompanying reforms. We therefore adopt the representative-agent assumption, taking as given the expansionary effect of reforms on public expenditure. Because the gains from reforms only materialize in the longer run, present compensations for losers are financed through debt accumulation.

Private Agents

Let 1 and 2 denote the two periods of the model. Each country is populated by a mass of size unity of identical individuals. The representative private agent's utility depends on the consumption of both a private and a public good and is separable over time and types of good. At the start of the game, the expected utility of the agent is given by

$$E_0[u(c_1) + v(q_1) + u(c_2) + v(q_2)], \tag{1}$$

where c_1 and q_1 are the amounts of the private and public good, respectively, consumed in period t; $E_0[.]$ is the expectation conditional on information available at the start of the game. For convenience, the discount factor is set equal to unity. Utility functions u and v satisfy standard properties.[17]

The agent maximizes utility under the following first- and second-period budget constraints, respectively:

$$c_1 = (1 - \tau)y_1 - I\gamma + h\gamma + b,$$

$$c_2 = (1 - \tau)[y_2 + \alpha\Gamma(\gamma)] - b, \alpha \geq 0.$$

[16]Sibert and Sutherland (2000), Calmfors (2001), and Hughes Hallett and Jensen (2001) explore the link between monetary unification and the incentives for structural reforms.

[17]They are twice-continuously differentiable, with $u(0) = 0$, $u' > 0$, and $u'' < 0$; $v(0) = 0$, $v' > 0$, and $v'' < 0$. Moreover, we assume that $v'(0) \to \infty$, while $v'(\infty) \to 0$.

In the first period, agents earn an exogenous and uncertain income, y_1, which is taxed at a given (and constant) rate, τ. To keep the analysis as simple as possible, we assume that $y_1 = y_L > 0$ with probability 1/2 and $y_1 = y_H > y_L$ with probability 1/2. Agents have free access to capital markets and borrow an amount b (or lend, if b is negative) in the first period, to be fully repaid in the second period. For convenience, and without consequences for the results, the real interest rate is zero.[18]

A structural reforms package is characterized by its "size," $\gamma \geq 0$. Private agents perceive a constant marginal cost of reforms in terms of private goods equal to I. As argued above in Section I, private costs of reforms may take various forms, such as forgone rents, typically because the sector in which the individual is working is opened up to competition, leading to a fall in the sectoral wage premium; a reallocation of resources across sectors, leading to temporary unemployment; or a relaxation of firing restrictions, which increases the risk of unemployment. The latter two imply direct job search costs.

To offset the adverse consequences of reforms (and implicitly boost voters' support and prevent social conflicts), we suppose that governments are willing to grant a partial compensation for those costs in the form of a transfer proportional to the size of the reform package. (See the next-to-final term in the first-period private budget equation, where h denotes a given proportionality parameter beyond the control of the government.)[19] The compensation scheme, $h\gamma$, can therefore be viewed as an inevitable political sunk cost of reforms. In practice (see Section I), compensation may range from direct monetary transfers (like an extension in unemployment benefits) to more indirect forms, such as active labor market policies designed to enhance the employability of the individual and ease the matching between unemployed individuals and available vacancies.

As is evident from the second-period budget constraint, structural reforms pay off, boosting the given private income component, y_2, by an additional amount, $\alpha\Gamma(\gamma)$, where $\Gamma(0) = 0$, $\Gamma'(\gamma) > 0$, and $\Gamma''(\gamma) \leq 0$. We thus exclude counterproductive reform packages and assume constant or decreasing returns to scale of reforms. The latter is an intuitively plausible assumption. For example, in the case of inefficient labor markets, the amount of new jobs that can be created through additional reforms is limited by the size of the wage premium over the competitive wage.

The Government

To focus on the issues at stake, we assume a very simple political structure similar to Alesina and Tabellini (1990), with two political parties, F and G, and given electoral uncertainty. This uncertainty induces the party in government to discount the future at a higher rate than is socially desirable and thus produce a deficit bias. This, in turn, creates a possible rationale for the introduction of fiscal rules.

While both parties produce the same public good, only the party in power obtains utility for providing the public good (e.g., under the form of political

[18]The real interest rate is exogenous and can be assumed to be determined in the world market (which is large, relative to the union), reflecting perfect capital mobility.

[19]Grüner (2002) analyzes the role of compensations in a political model of labor market reforms. The same article provides additional references to the relevant literature.

credit). Further, both parties share the representative agent's preferences regarding private consumption. Denoting by f_t (g_t) the amount of public good provided by party F (G) in period t, the utility of party F (similar for G) is

$$E_0[u(c_1) + v(f_1) + u(c_2) + v(f_2)]. \tag{2}$$

Without loss of generality, we assume that party F is in power in period 1. The incumbent is reelected in period 2 with a given probability $0 < p < 1$. Electoral uncertainty may stem from several sources, such as uncertainty about the voter turnout, which affects the two parties differently; uncertainty about the appeal of the party's leadership to the voters; the occurrence of scandals; and so on.

The first- and second-period government budget constraints are written as

$$q_1 = \tau_1 y_1 - h\gamma + d + R, \text{ if } d \leq \bar{d},$$

$$q_1 = \tau y_1 - h\gamma + d - k(d - \bar{d}) + R, \text{ if } d > \bar{d},$$

$$q_2 = \tau y_2 + (\tau\alpha + \beta)\Gamma(\gamma) - d, \beta \geq 0,$$

where $q_t = f_t + g_t$ is the total supply of the public good in period t. On the right-hand side of the first-period budget constraint, we find the tax revenue, τy_1, and the compensation paid to private agents, $h\gamma$. The government borrows on the international capital market to finance a (first-period) deficit, d. In the absence of inherited debt and valuation effects, d is also equal to the public debt at the end of period 1 (to be repaid in period 2). For convenience, we assume that the real interest rate on government debt is zero.

The government is subject to a binding fiscal arrangement (a "stability pact") reminiscent of the euro area's Stability and Growth Pact. An excessive deficit arises if d exceeds some threshold, $\bar{d} > 0$. In that case, the government is subject to a pecuniary sanction of size $k(d - \bar{d})$, where $0 \leq k \leq 1$. A nonexcessive deficit or a surplus implies neither sanctions nor rewards. The direct proportionality between sanctions and the magnitude of the excessive deficit parallels the SGP's provisions, even though, for obvious tractability reasons, we ignore the cap on sanctions (0.5 percent of GDP). Our specification of the stability pact is quite similar to that in Beetsma and Uhlig (1999) and Beetsma and Jensen (2003).

The sanction mechanism is administered by an unelected, supranational authority (such as the European Commission in the case of the European Monetary Union). Fines collected from countries with excessive deficits are redistributed equally among all member states as a rebate, R. Since each country was assumed to be small with respect to the rest of the union, individual governments view the size of the rebate as given. Due to the uncertainty about first-period income, tax revenues and, thereby, the deficit are uncertain. We assume that the variance of the first-period income is large enough to ensure that the government optimally sets $d > \bar{d}$ when income is low, and $d < \bar{d}$ when income is high.

The right-hand side of the period 2 budget constraint includes tax revenue τy_2, repayment of the public debt, and the fiscal payoff of the structural reforms carried out in period 1. Those benefits materialize only in period 2 to reflect the

potentially long lags with which structural measures affect the economy. In line with the discussion in Section I, the fiscal payoff includes lower expenditure (e.g., saving on administrative costs, unemployment benefits, social programs, and active labor market policies) captured by the term $\beta\,\Gamma(\gamma)$, and higher tax revenues represented by $\tau\alpha\Gamma(\gamma)$. The total effect on the budget therefore amounts to $(\tau\alpha + \beta)\Gamma(\gamma)$. Given the properties of $\Gamma(\gamma)$ (described above), the marginal budgetary impact of reforms (weakly) decreases with γ, the size of the reform package. The assumption that both the expenditure and revenue effects of reforms are governed by the same function, $\Gamma(\gamma)$, greatly contributes to the tractability of the formal analysis. For the same reason, we assume that α, β, and y_2 are constant, rather than stochastic. Relaxing those assumptions is straightforward but does not add much insight to the analysis.

Two practical observations can be made at this stage. First, the actual implementation of the SGP in the euro area suggests a great deal of *uncertainty* regarding the enforcement of pecuniary sanctions. In particular, each step leading to sanctions requires a qualified majority vote by the ECOFIN, opening the door to political bargaining and the formation of blocking minorities.[20] To save space and simplify the notation, the present analysis ignores the effects of uncertainty. Appendix C shows that exogenous uncertainty about sanctions yields qualitatively identical results, the key difference being that the effectiveness of sanctions decreases with the probability that they will not be enforced.

A second issue ignored here is the lag between the activation of the excessive deficit procedure and the imposition of sanctions. Indeed, the procedure is long, leaving ample time for profligate countries to adopt corrective measures before sanctions eventually kick in. Here instead, fines have to be paid in period 1, as soon as an excessive deficit occurs. Again, that assumption allows economizing on the number of cases we need to consider and is qualitatively unimportant, as Appendix C shows. (The main difference is that the effectiveness of second-period sanctions is reduced proportionally to the probability of reelection of the incumbent government.)

III. Solution of the Model

The timing of events is as follows. In stage 1, the government of a representative country implements a structural reform of size γ. In stage 2, y_1 realizes, after which (stage 3) the government and the private individual, respectively, select d and b. Sanctions are imposed when d exceeds $\bar{d}$. At the beginning of period 2, elections take place (stage 4). Finally, in stage 5, all debts are repaid.[21]

[20] Strauch and von Hagen (2001) provide a detailed analysis of the SGP in light of effectiveness criteria of fiscal rules.

[21] As mentioned earlier, the tax rate τ is assumed to be given, rather than optimally selected by the government. In principle, we could allow for the government to select τ as well, in addition to γ and d. However, this would substantially complicate the algebra. The additional complexity is unwarranted, given that τ is the instrument that determines the overall size of the public sector. The focus of the SGP is not the overall size of the public sector and, consequently, the latter is also not addressed in the ensuing analysis.

To keep algebraic expressions readable, we derive all the solutions under the assumption of perfectly correlated business cycles, so that either $y_1 = y_L$ or $y_1 = y_H$ for all countries. That assumption, consistent with the case in which the monetary union would be an optimum currency area, implies that fines and rebates are either 0 (good shock) or cancel out in equilibrium (bad shock). This prevents second-order effects on the marginal utility of the public good—unlikely to be large in practice.

Box 1 presents closed-form solutions of the model, assuming explicit functional forms for $u(.)$, $v(.)$, and $\Gamma(.)$. In the main text we characterize general solutions of the model, focusing more on the intuition of the results. To ensure time consistency, the model is solved backwards.[22] Reflecting our assumptions about the discount rate and the interest rate, the representative consumer picks a debt level that ensures a flat consumption profile over time:

$$c_1 = c_2 = (1/2)[(1 - \tau)(y_1 + y_2 + \alpha\Gamma(\gamma)) + (h - I)\gamma]. \tag{3}$$

Since a government values only its own provision of the public good, future utility is discounted by the probability of reelection. The first-order condition equalizes the marginal benefit of a fiscal expansion (additional public good in period 1) with the perceived marginal cost (forgone public good in period 2). The optimal deficit is increasing in the size of the negative income shock. As the variance of the income shock is such that $d < \bar{d}$ when income is high and $d > \bar{d}$ when income is low, we obtain two first-order conditions for the deficit, each corresponding to one possible realization of the shock (see Appendix A.1):

$$v'(\tau y_L - h\gamma + d)(1 - k) = pv'(\tau y_2 + (\tau\alpha + \beta)\Gamma(\gamma) - d), \tag{4}$$

$$v'(\tau y_H - h\gamma + d) = pv'(\tau y_2 + (\tau\alpha + \beta)\Gamma(\gamma) - d). \tag{5}$$

Given that the pact is only binding when income is low, the punishment parameter, k, only features in equation (4), where the argument of the first-period marginal utility takes into account the fact that fines and rebates cancel out in equilibrium. By differentiating equations (4) and (5)—see also Appendix A.2—we obtain the following lemma, which will be of help for the ensuing analysis:

LEMMA 1: More ambitious structural reforms (that is, higher γ) increase deficits in good as well as bad states of the economy.

In other words, all else being equal, more ambitious structural reforms lead to larger deficits. The reason is that reforms subtract resources from the provision of a public good in the first period to increase the resources available in the second period. By running a higher deficit, the government can offset that intertemporal effect of reforms and restore its preferred profile of public good provision.

[22]In any of the ensuing optimizations, the objective functions are strictly concave, thus guaranteeing that the second-order conditions for an optimum hold.

Box 1. Some Explicit Closed-Form Solutions

This box proposes two simple examples of closed-form solutions, assuming particular functional forms for u, v, and Γ. (For more details, see Appendix B.) Let us first assume the following:

$$u(x) = v(x) = -(\xi - 1)x^2/2 + \xi x, \xi > 1, \tag{7}$$

$$\Gamma(\gamma) = \gamma. \tag{8}$$

Under those assumptions, $\Gamma' = 1$, and positive marginal utilities require that $x < \xi/(\xi - 1)$. This imposes the following restrictions on equilibrium public spending:

$$-(\xi - 1)(\tau y_1 - h\gamma + d) + \xi > 0, y_1 = y_L, Y_H, \tag{9}$$

$$-(\xi - 1)(\tau y_2 + (\tau\alpha + \beta)\gamma - d) + \xi > 0, \tag{10}$$

where the restrictions have been expressed in terms of the parameters and policy instruments. Recall also that, in equilibrium, fines and rebates cancel out.

Solving equations (4) and (5) in the main text yields, respectively,

$$d_L = \left(\frac{\xi}{\xi - 1}\right)\frac{1 - p - k}{1 + p - k} + \frac{\tau[py_2 - (1 - k)y_L] + [p(\tau\alpha + \beta) + (1 - k)h]\gamma}{1 + p - k}, \tag{11}$$

$$d_H = \left(\frac{\xi}{\xi - 1}\right)\frac{1 - p}{1 + p} + \frac{\tau[py_2 - y_H] + [p(\tau\alpha + \beta) + h]\gamma}{1 + p}. \tag{12}$$

Clearly, more ambitious reforms (greater γ) imply an increase in the deficit, both when income is low and when income is high (Lemma 1). Further, using equations (9) and (10), it is straightforward to show that d_L is decreasing in k (Lemma 3).

Using equations (7) and (8), we rewrite the first-order condition for γ (equation (6)) as

$$\begin{aligned}[\xi - (1/2)(\xi - 1)[(1 - \tau)(\tilde{y}_1 + y_2) - \varepsilon\gamma]](-\varepsilon) &= h\left[\xi - (\xi - 1)\left(\tau\tilde{y}_1 - h\gamma + \tilde{d}\right)\right] \\ -p(\tau\alpha + \beta)\left[\xi - (\xi - 1)\left(\tau y_2 + (\tau\alpha + \beta)\gamma - \tilde{d}\right)\right],\end{aligned} \tag{13}$$

where $\varepsilon \equiv I - [h + (1 - \tau)\alpha] > 0$, $\tilde{y}_1 \equiv (y_L + y_H)/2$, and $\tilde{d} \equiv (d_L + d_H)/2$. We have used equation (3) in the main text to work out the left-hand side of text equation (6). We can now rewrite equation (13) as

$$\gamma = 2\frac{\xi}{\xi - 1}\frac{p(\tau\alpha + \beta) - (h + \varepsilon)}{\varepsilon^2 + 2p(\tau\alpha + \beta)^2 + 2h^2} + \frac{\varepsilon(1 - \tau)(\tilde{y}_1 + y_2) + 2h\tau\tilde{y}_1 - 2p(\tau\alpha + \beta)\tau\gamma_2 + 2[h + p(\tau\alpha + \beta)]\tilde{d}}{\varepsilon^2 + 2p(\tau\alpha + \beta)^2 + 2h^2}.$$

(*continued*)

Box 1. (*continued*)

The coefficient of $\tilde{d}$ is positive, which implies that any stability pact that reduces $\tilde{d}$ also reduces γ (Lemma 4).

Using equations (11) and (12) to obtain $\tilde{d}$ as a function of γ (and k) and substituting the result into equation (13), we can solve for the final solution of γ as a function of k. Substituting this solution back into equations (11) and (12) yields the final solutions for d_L and d_H as functions of k. When evaluated at $k = 0$, the derivatives $\gamma'(k)$, $d_L'(k)$, and $d_H'(k)$ of these final solutions are negative (Proposition 2). The full expressions for γ, d_L, and d_H are rather long and, for the sake of brevity, we refer to numerical solutions (programs available upon request). For example, setting $y_L = 0.75$, $y_H = 1.25$, $y_2 = 1$, $\tau = 0.5$, $h = 1$, $\alpha = \beta = 0.75$, $p = 0.5$, $e = 0.02$, and $\xi = 3$, we obtain $d_L = 12.61$, $d_H = 12.45$, and $\gamma = 11.71$ at $k = 0$. For a social planner ($p = 1$, $k = 0$), the outcomes are $d_L = 13.99$, $d_H = 13.86$, and $\gamma = 13.10$. Hence, reforms exceed those under a partisan government (Proposition 1). A check on the marginal utilities from public and private consumption shows that these are all positive. Further, the conditions stated in footnote 23 are fulfilled.

Finally, for $p < 1$, equation (14) in the text reduces to

$$\left[1 + 2p - p(\tau\alpha + \beta) - \frac{1 + p}{(\tau\alpha + \beta) - 1}\varepsilon^2\right]v'(f_{1L}) + [1 + p(\tau\alpha + \beta)]v'(f_{1H}) < 0,$$

where $v'(f_{1L})$ and $v'(f_{1H})$ are given by the left-hand side of equation (9). For the parameter constellation set out above, this condition is not fulfilled, so that the marginal social welfare effect from the introduction of a pact is negative in this case.

As a second example, we assume that $\Gamma(\gamma) = \gamma^{0.5}$ and retain equation (7). For $h = 1.1$ and $q = 0.5$ and keeping the other parameter values as above, we find $d_L = 0.690$, $d_H = 0.523$, and $\gamma = 0.247$ when $k = 0$. In that case, it can be checked that the marginal welfare effect of introducing a pact in this case is positive, whereas all regularity conditions are fulfilled.

The optimal reform package γ selected in stage 1 is determined by the first-order condition (see Appendix A.3):

$$E_0\{u'(c_1)[h + (1 - \tau)\alpha\Gamma'(\gamma) - I]\} = (1/2)h[v'(f_{1L}) + v'(f_{1H})], \\ -(1/2)p(\tau\alpha + \beta)\Gamma'(\gamma)\,[v'(f_{2L}) + v'(f_{2H})], \tag{6}$$

where f_{1L} and f_{1H} are first-period public consumption when y_1 is low and high, respectively, and where f_{2L} and f_{2H} are likewise defined for period 2. For $k > 0$ not too large, the optimal reform package is uniquely determined by equation (6) if two plausible conditions jointly hold. First, the total (budgetary) benefit of structural reforms must be sufficiently large; and second, the individual short-term costs of reforms must also be sufficiently large.[23] Taken together,

[23]The conditions are, respectively, $(\tau\alpha + \beta)\Gamma'(\gamma) > h$ and $I > h + (1 - \tau)\alpha\Gamma'(\gamma)$. See Appendixes A.4 and A.5.

these assumptions simply mean that there is a sufficient "stock" of structural inefficiencies in the economy and that removing them is not a free lunch. Technically, that guarantees an interior solution such that it is always optimal for the government to choose some reform, but that it is never optimal to pick radical plans.

IV. Implications of a Pact for Deficits and Reforms

In this section, we explore the implications of a pact for deficits and structural reforms. However, before doing so, we compare the optimal policies chosen by a partisan government subject to a stability pact (k, $\bar{d}$) with the socially optimal policies determined by a hypothetical social planner who shares the representative individual's preferences.

Comparison with a Social Planner

The social planner shares the representative agent's preferences and faces no electoral uncertainty. Hence, there is no distortion and thus no justification for imposing a stability pact or any other institutional restriction on a social planner. Formally, the solution to the planner's problem corresponds to that of a government that is certain to be reelected (i.e., $p = 1$) and not exposed to any sanction (i.e., $k = 0$).

We first compare the optimal fiscal policies for a given level of structural reforms (see Appendix A.6):

LEMMA 2: If k is not too large, then for a given level of structural reforms the deficit under a partisan government is always larger than the socially optimal level.

In other words, the possibility that the partisan government may not be reelected leads to a *deficit bias.*

We summarize the comparison of the optimal structural policies with the following proposition (see Appendix A.7):

PROPOSITION 1: If the stability pact is not too tight (i.e., k is not too large), then a partisan government provides a suboptimally low amount of structural reform compared to the social optimum.

Electoral uncertainty pushes a partisan government to discount the future state of the economy more than it should, resulting in policies that transfer resources away from the future to the benefit of current public consumption. Lemma 1 showed earlier that, for a given amount of structural reforms, such transfers can be organized directly through additional public debt accumulation. As Proposition 1 demonstrates, these intertemporal transfers also take place indirectly through reduced structural reforms, leading to a *status quo bias* in reforms.

The Impact of Tighter Sanctions

Having shown that electoral uncertainty leads a partisan government to create an excessive deficit (for a given level of reform), we now turn to the question of how

(tighter) sanctions under a stability pact influence the deficit. It is easy to show that (see Appendix A.8)

LEMMA 3: For a given amount of structural reforms, tighter sanctions (i.e., a higher k) reduce the optimal deficit after an adverse resource shock ($y_1 = y_L$), that is, $(\partial d_L/\partial k) < 0$. Trivially, d_H is not affected by k.

Tighter sanctions discourage borrowing in the event of a bad shock, because they artificially raise the cost of borrowing.

While Lemma 3 establishes the "direct" implications of tighter sanctions on the deficit, there is also an indirect effect, as sanctions have an impact on structural reforms, which in turn affect the deficit (Lemma 1). In fact, Appendix A.9 shows that

LEMMA 4: If a stability pact is effective at reducing the deficit, it also leads to less ambitious structural reforms.

The underlying intuition is straightforward. As established in Lemma 1, more reforms optimally trigger a fiscal expansion, indicating that, in equilibrium, partisan governments face a trade-off between reducing one distortion (too little reform) at the cost of aggravating another (a greater excessive deficit). Hence, if our stability pact represents an effective tool of fiscal restraint, the bias toward insufficient reforms will worsen. By characterizing the effect of a stability pact on the equilibrium mix of fiscal and structural policies, we demonstrate in Appendix A.10 that

PROPOSITION 2: Assuming that the pact is not too tight to start with, a further tightening of the pact (i.e., a higher k) in equilibrium leads to a lower deficit as well as less structural reform.

V. Welfare-Improving Fiscal Rules

Turning to the welfare implications of fiscal restraints, this section shows that stability pacts may be counterproductive. Therefore, we discuss alternative arrangements, dubbed "smart" stability pacts, that are not subject to that problem.

Does a Stability Pact Raise Welfare?

The existence of an expansionary fiscal bias and the costs of addressing it with a stability pact naturally raise the issue of the desirability of the latter in terms of welfare. To see how the introduction of a stability pact affects welfare, we compute the marginal welfare effect of a change in k, evaluated at $k = 0$. Appendix A.11 demonstrates that introducing a pact is welfare-improving if

$$(1/2)\left(\frac{1-p}{p}\right)\left[\begin{array}{l}(\tau\alpha+\beta)\Gamma'(\gamma)\left[v'(f_{1L})+v'(f_{1H})\right]\dfrac{\partial\gamma}{\partial k}- \\ v'(f_{1L})\dfrac{\partial d_L}{\partial k}-v'(f_{1H})\dfrac{\partial d_H}{\partial k}\end{array}\right]>0. \tag{14}$$

On the one hand, the pact entails welfare gains by discouraging the excessive deficits (Lemma 2) resulting from electoral uncertainty ($p < 1$). But on the other hand, it aggravates the status quo bias in reforms (Propositions 1 and 2), making the total welfare effect ambiguous.

The following proposition summarizes three lessons regarding the welfare effect of a stability pact in this model.

PROPOSITION 3: (i) Electoral uncertainty is the only motivation for a stability pact. Indeed, if a government is sure to be reelected ($p = 1$), the introduction of a pact has no first-order welfare effect. (ii) The net welfare effect resulting from a stability pact depends upon its relative effectiveness at reducing the deficit compared to the induced reduction in structural reforms. (iii) Hence, other things being equal, a stability pact is more likely to improve welfare when the marginal budgetary effect of reform, $(\tau\alpha + \beta)\Gamma'(\gamma)$, is smaller.

Considering our previous results, the underlying intuition should be clear. First, when it is certain to be reelected and there is no stability pact ($k = 0$), a partisan government behaves as a social planner, delivering socially optimal structural reforms and deficit. Hence, a marginal increase in the tightness of the pact at this point can have no first-order welfare effect. Second, the optimal design of the stability pact faces a trade-off between a reduction in the excessive deficit bias and an increase in the status quo bias in reforms. As a consequence, if the pact is highly effective at reducing the deficit bias, but leads to only a minor worsening of structural reform decisions, then its introduction will improve welfare. Finally, if the marginal budgetary benefit from reforms in the second period is relatively small, then the adverse effect of the pact on structural reform leads to only a small reduction in the amount of resources available for public consumption in period 2.

By differentiating equations (4), (5), and (6), we can solve for the marginal effect of the pact's tightness on reforms and the deficit under low and high first-period income. If we combine these solutions with equation (14), we arrive at a condition that expresses the desirability of introducing a pact as a function of the parameters and first- and second-order derivatives of the utility functions. Depending on the parameter values, the welfare effect of introducing a pact may go both ways (see Box 1).

A Smarter Pact: Flexible Implementation of a Simple Rule

The pact analyzed above sacrifices future growth for present stability because it ignores the collateral damage on the front of structural reforms. Can we refine our fiscal discipline arrangement and devise a "smart" pact that would still be effective at reducing excessive deficits but with only limited or no adverse repercussions on reforms? In its November 2002 proposal (later endorsed by ECOFIN) to implement the SGP more flexibly, the European Commission suggested allowing (temporary) deviations from the SGP's core requirement ("close-to-balance-or-in-surplus") in the case where member states carry out large structural reforms. (See the discussion in Section I.) In our setup, this amounts to the supranational enforcer refraining

from sanctioning a fiscal stance that would otherwise be deemed inconsistent with the discipline requirements. Accordingly, we now assume that

$$\bar{d} = \bar{d}^{c} + \delta\gamma, \delta > 0, \tag{15}$$

so that the actual deficit threshold leading to sanctions ($\bar{d}$) may be higher than the formal reference value ($\bar{d}^{c}$), depending on the size γ of the reforms package.[24] The parameter δ captures the extent to which the supranational authority tolerates looser discipline standards in case it observes γ. Hence, the first-order condition for the optimal reform package becomes

$$\begin{aligned} &E_0\{u'(c_1)[h + (1-\tau)\alpha\Gamma'(\gamma) - I]\} = (1/2)h[v'(f_{1L}) + v'(f_{1H})] \\ &-(1/2)p(\tau\alpha + \beta)\Gamma'(\gamma)\,[v'(f_{2L}) + v'(f_{2H})] - (1/2)\delta k v'(f_{1L}). \end{aligned} \tag{16}$$

When $k > 0$ is not too large, equation (16) yields at most one solution for reform effort. As Appendix A.12.1 shows, the solution exceeds the amount of reform effort in the absence of any flexibility in the pact's implementation ($\delta = 0$).

How does equation (15) affect the desirability of a pact? Again, we compute the marginal welfare effect of a change in k, evaluated at $k = 0$. The smart pact simply reduces the adverse effect a greater k has on reforms (see Appendix A.12.2) without diminishing the disincentive to run excessive deficits. This results in Proposition 4 (demonstrated in Appendix A.12.3):

PROPOSITION 4: (i) The introduction of a stability pact is more likely to enhance social welfare (i.e., the set of parameter combinations for which a pact raises social welfare is larger) when the supranational enforcer tolerates higher deficits in view of the structural reforms implemented by member states. (ii) There always exists a degree of tolerance δ for reform-driven deficits such that the introduction of a pact is beneficial.

Discussion: Smart Pacts in Practice

The smart stability pact described above rests on the notion of a qualitative assessment of the deficit by an independent and nonpoliticized supranational enforcer. In the complete and perfect information setup of the model, that is qualitatively equivalent to a perfectly contingent arrangement. In practice, however, the distinction between the flexible implementation of simple rules (as implicitly assumed here) and a strict enforcement of contingent rules is important, and we believe the former should be preferred to the latter. Indeed, contingent rules—especially when contingency refers to the underlying quality of fiscal policy, rather than simple and

[24]While this arrangement is based on relaxing the deficit threshold rather than the "underlying budgetary position" (that is, budget figures corrected for cyclical effects), both arrangements should have similar effects on the incentives for structural reforms, because they reduce the adverse consequences (such as public rebukes or financial penalties) of a deterioration of the public budget in the short run. Recall also that the costs of the structural reforms were one of the formal reasons invoked by ECOFIN in November 2003 not to impose financial penalties for France and Germany's excessive deficits.

transparent quantitative adjustments—are subject to design flaws and implementation failures undermining their credibility.[25]

Even if the flexible implementation of a simple arrangement by an independent enforcer escapes many caveats of explicitly contingent rules, the imperfect observability of the budgetary effects of reforms remains a problem. To the extent that governments have superior information regarding the true fiscal implications of reforms, flexible implementation provides them with opportunities to outsmart the smart rules. For example, governments may find ways to overstate the reforms they conduct or the compensations required to make them acceptable, only to justify increased public consumption unrelated to structural reforms. It thus seems inevitable that, for the sake of their effectiveness at tackling excessive deficits, smart pacts should be paired with enhanced monitoring/surveillance of national budgets and stronger (i.e., more automatic) enforcement procedures.

Prolonging the above argument, some have argued that official calls for smarter pacts partly reflect a willingness to escape any type of binding external constraint on fiscal discretion. Perhaps some European governments feel a "delegation fatigue," making them eager to regain discretion wherever possible. However, one should not lose sight of the fact that the SGP was officially presented as a symbol of the member states' continued commitment to macroeconomic stability after they gained access to the euro area. Several theoretical analyses have emphasized the credibility gains arising from the SGP (e.g., Beetsma and Uhlig, 1999; or Debrun, 2000); and even though those gains are not explicitly considered here, they should certainly be part of the broader debate.

Before concluding, it is worth emphasizing the specific contribution of our analysis with respect to the related literature, especially the formal analyses of Peletier, Dur, and Swank (1999) and Blanchard and Giavazzi (2003), as well as other papers looking informally or empirically at the linkage between the design of fiscal rules and the overall "quality" of fiscal policy (such as von Hagen, Hughes Hallet, and Strauch, 2002, and the references therein; and Buti, Eijffinger, and Franco, 2003).

First, our paper provides an explicit model of the type of incentives produced by the SGP in an environment where the quality of fiscal policy is critical and defined in general terms. This allows highlighting concrete amendments to the actual arrangement, such as a flexible interpretation of the punishment threshold by a politically independent institution. Second, our model provides a fairly general welfare analysis of fiscal institutions analogous to the SGP. Third, the analysis implicitly warns against a narrow definition of the quality of fiscal policy. Specifically, we argue that "good" fiscal policies may involve a wide range of expenditure categories (such as transfers) not necessarily related to the traditional distinction between "productive" and "unproductive" outlays. As a result, the reconciliation of stability and growth may well have to rely on nonpoliticized *judg-*

[25]The credibility of rules and institutions, and in particular the relationship between the credibility of a discipline device and its degree of contingency, is an issue in itself. One might conjecture an inverted-U relationship in which excessively rigid rules (politically easier to renege on) and overly contingent ones (technically hard to implement and easier to evade) may be equally ineffective at chasing excessive deficits.

ment based on the existing *simple* rules (as assumed in our formal analysis and proposed by the European Commission), rather than refined rules based on arbitrary accounting principles prone to politically motivated creative accounting.

VI. Concluding Remarks

This paper has explored the incentives of a partisan government facing electoral uncertainty to undertake structural reforms when its fiscal decisions are constrained by a discipline-enhancing device similar to the euro area's Stability and Growth Pact. This is a critical issue in an economic area whose growth potential is arguably constrained by significant rigidities, especially in product and labor markets. Anecdotal evidence suggests that greater fiscal flexibility might be desirable for countries in need of substantial structural reforms. Rigid fiscal rules might consequently reduce incentives to implement reforms. The European Commission and the ECOFIN have recently recognized that potential conflict between the pact's stated objectives, namely, growth and stability, and now explicitly account for member states' structural policies when assessing their budgetary position.

Our model features a status quo bias in reforms and a deficit bias. The latter justifies the introduction of an institutional device that, like the SGP, provides governments with external incentives to maintain fiscal discipline. However, as reforms imply a short-run fiscal expansion, the pact further lessens the government's incentives to address structural problems, sacrificing future growth for the sake of present stability. The resulting trade-off between short-term stability and future growth has clear welfare implications, making an apparently desirable fiscal-discipline device potentially counterproductive.

A stability pact is more likely to be welfare-improving if its effect on reforms is relatively small compared to its effect on deficits. Consequently, the social desirability of a pact can be improved if its implementation exhibits some tolerance for deficits, justified by proven efforts in terms of structural reforms. Specifically, we showed the positive welfare effect of a more flexible interpretation of the deficit threshold based on an assessment of the fiscal effects of reforms by a politically independent institution.

Our analysis relies on a number of assumptions calling for extensions of practical relevance. First, as in most existing analyses of the SGP, the excessive-deficit procedure, including the imposition of pecuniary sanctions, was assumed to be perfectly credible. Although our results remain qualitatively unchanged when we assume uncertain sanctions, it would be desirable to have a model that explicitly acknowledges the political dimension of the SGP's design and, above all, implementation. To put it simply, if politics matters for policy choices, it should also matter for the design and implementation of the SGP, and that certainly needs to be modeled in view of recent history.

Second, we assumed away a number of operational difficulties in the implementation of the pact. One of these difficulties is the imperfect observability of structural reforms and of their true budgetary effects. In particular, we argued that compensation schemes such as transfers should be part of those costs. But how do we objectively assess the compensation measures? It seems inevitable that a

flexible implementation of a fiscal pact will result in additional loopholes and manipulation opportunities, which, as discussed in Strauch and von Hagen (2001), might harm the effectiveness of fiscal restraints. This is another reason why we believe the implementation of a socially desirable stability pact should rest in the hands of an independent institution protected from short-term political pressure and with the expertise to judge the overall quality of fiscal policy (see also Buiter, 2003).

Third, distributive politics should obviously play a role in further analysis. For tractability reasons, we have used a representative-agent model. In reality, distributional consequences do matter, not the least through their effect on the probability of reelection. In that context, it would be interesting to study how opportunistic (instead of partisan) governments would behave. In particular, the presence of a pact may reduce the scope for compensations and weaken the incentive for reform if the government fears that reform affects its reelection chances too adversely (see also Beetsma and Jensen, 2003).

Finally, it would be useful to investigate further the optimal design of fiscal pacts. In principle, rules could both prohibit governments from producing excessive deficits and give them greater incentives to pursue adequate structural reforms. Rules or restrictions on (certain categories of) public spending may be one possibility (Milesi-Ferretti, 2004). Such rules would allow governments to compensate specific groups that are particularly hurt by the reform, but would preclude overspending elsewhere. Hence, despite some analytical and practical challenges, we believe fiscal rules can be made smarter—particularly through a flexible implementation—and that the inherent limitations of simple arrangements are no serious reason for scrapping them altogether.

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