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FISCAL POLICY IN EMU: TOWARDS A SUSTAINABILITY AND GROWTH PACT?

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This paper takes stock of the academic and policy discussions on the fiscal institutions of EMU, confronts the framework in place with what is known of the desirable properties of fiscal policy in a monetary union, and discusses possible improvements. We start with a discussion of three requirements for the fiscal framework of a monetary union: it should be conducive to public finance sustainability, leave room for stabilization at the national level, and encourage structural reform. We then examine how the Stability and Growth Pact (SGP) measures up to these requirements and find that it has mostly failed on all three accounts. Whether the 2005 reform of the SGP fixes those deficiencies remains an open issue. To this end, we propose five building blocks towards an effective SGP: a better concept of sustainability; harmonized general government balance sheets; appropriate targets; refined procedures; and better institutions.

I. INTRODUCTION

The European Union has become a playground for experiments on the effectiveness of, and the frameworks for, fiscal policy. There are two reasons for that. First, while fiscal stabilization has almost everywhere taken a secondary role to monetary policy, the European Economic and Monetary Union (EMU) combines a single monetary policy with national, independent fiscal policies that constitute the only macroeconomic instrument available at the country level. Second, the Europeans have put in place in the name of fiscal discipline a quasi-constitutional framework that goes a long way towards constraining the discretionary leeway of national governments.

The whole European discussion since the start of the EMU negotiations in the late 1980s (or even since the 1970 Werner committee report which blazed the trail of the European monetary union) has

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thus been about the right balance between two contradictory aims: to ensure that national governments are not deprived of any significant macroeconomic stabilization instrument to offset asymmetric shocks, and to ensure that they do not take advantage of the single currency to free-ride on collective disciplines and build up mutually harmful, unsustainable fiscal positions.

The European fiscal framework has been in operation since 1999. It was designed in 1991 for inclusion in the Maastricht Treaty,[2] refined in 1997 with the creation of the Stability and Growth Pact (hereafter, 'SGP'), and reformed in 2005. This series of reforms can already be taken as an indication of the difficulty of the task. Furthermore, while the initial SGP consisted of simple, quasi-mechanical rules, the reformed one is more complex and its implementation requires the exercise of more judgement. A numerical, mechanical criterion (the 3 per cent limit for the ratio of general government fiscal balance to GDP) has been replaced by a variety of standards for assessing the appropriate character of a budget balance: the position in the cycle, the nature of expenditure, the level of public debt, and the existence of off-balance-sheet liabilities may all play a role in the evaluation. The new Pact therefore leaves room for both fudge and learning-by-doing.

The goal of this contribution is to take stock of the academic and policy discussions on the fiscal institutions of EMU, to confront the framework in place with what is known of the desirable properties of fiscal policy in a monetary union, and to discuss possible improvements. It is organized as follows. In section II, we discuss the EMU fiscal framework. In section III, we describe EMU fiscal policy since 1999 and we assess the effectiveness of the SGP. In section IV, we outline a 'Sustainability and Growth Pact' with a view to putting flesh on the revised Pact and taking stock of this experience, and we conclude.

II. REQUIREMENTS FOR THE EURO AREA'S FISCAL FRAMEWORK

The key features of EMU are well known (see, for example, Wyplosz (1997) for an introduction). The countries that take part in it are economically diverse—and will become even more diverse as the Eurozone enlarges. They have achieved a high (though not complete) degree of integration of their markets for capital and goods. Their services and, especially, labour markets remain fragmented. They do have a common budget, but a very small one that does not play any macroeconomic role;[3] and fiscal policy remains in the hands of national governments. Those features differ markedly from what economists since Mundell have regarded as optimal conditions for operating a monetary union. However, the choices have been made and any change is bound to be very gradual. If anything, the recent trend in the EU has been towards less, not more federalism, implying that a US-like federal budget is not an option for the foreseeable future. Market integration, including that of labour markets, will develop—but slowly; convergence may happen—but not necessarily; the EU budget may increase—but marginally. A safe assumption is thus to take the set-up as given.

With the above constraints in mind, we emphasize three desirable properties of a fiscal framework for a monetary union. It should be conducive to public finance sustainability; it should leave room for stabilization; it should not discourage, and possibly should encourage, structural reform. We believe those properties are fairly uncontroversial, but as always the devil lies in the detail, and the challenge is to devise a system which delivers all three. Hence, they deserve a short discussion.[4]

(i) Debt Sustainability

The essential rationale for a common fiscal framework rests on the risks that unsustainable national

[2] The Treaty establishing the European Community ('EC Treaty') was signed in Rome in 1957 and amended in Maastricht (1992), Amsterdam (1997), and Nice (2001).

[3] In 2004, the EU budget amounted to €112 billion, less than 1 per cent of the combined gross national income of the 25 member countries. Forty-five per cent of it went to the common agricultural policy and 34 per cent to regional policy.

[4] Buti and Franco (2005) provide an in-depth up-to-date discussion of fiscal policy in EMU, to which the reader may wish to refer.

Table 1
Selected Cross-border Bond Holdings within EMU
(holdings of public and private bonds in percentage of the investing country's GDP, 2003)

		Investor				
		Austria	Belgium	Ireland	Luxembourg	Netherlands
Issuer	Germany	19.6	12.2	38.8	612.5	24.2
	France	4.4	9.4	25.4	278.7	9.8
	Italy	4.3	19.2	37.3	294.3	8.3

Source: IMF, Coordinated Investment Portfolio Survey.

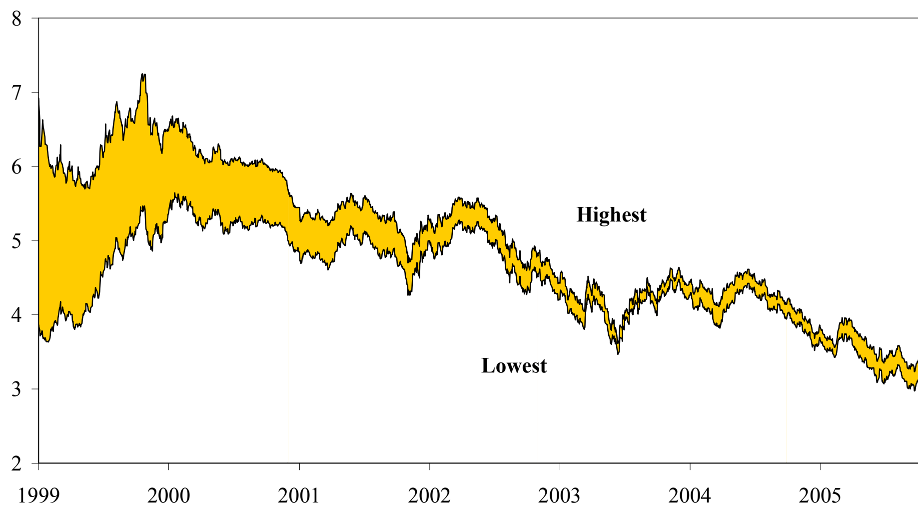
behaviour would represent for the stability of the currency area. The first channel for it, which has in our view lost relevance with free capital mobility, is the well-known 'common pool' problem: high deficits in a member country, or a group of member countries accounting for a significant share of the Eurozone economy, could possibly lead to higher real interest rates and affect potential growth. The second channel is that a budgetary course which is not sustainable in the long run would eventually undermine the ability of the central bank to maintain monetary stability—an argument that dates back to Sargent and Wallace (1981). One does not need to adhere to the fiscal theory of the price level to consider that risk: it is enough to recognize that if confronted with the choice between accommodating the build-up of public debt in a member country and deliberately provoking its default, the central bank might wobble. The third channel—which reinforces the second—is that the financial turmoil triggered by a default on the debt of any member country would have significant cross-border effects (Eichengreen and Wyplosz, 1998). Statistics are imperfect, in particular because they do not distinguish between government and corporate bonds, but Table 1 suggests that even putting aside Luxembourg, the magnitude of those effects could be far from trivial. This is in part due to a home currency bias: as confirmed by Philip Lane (2005), 'EMU member countries disproportionately invest in one another relative to other country pairs.'

When the discussions on the monetary fiscal framework began, economists pointed out that provided bail-out of an insolvent state was credibly prohibited, market discipline would suffice to set the incentives to prudent behaviour right. However, in spite of the explicit 'no bail-out' clause enshrined to this end in the EC Treaty,[5] spreads on 10-year government bonds have converged in the run-up to EMU and have remained infinitesimal ever since, whatever the fiscal and political developments (Figure 1). Investors have certainly taken note of the worsening fiscal conditions in Greece and Italy and the reservations expressed about the debt and deficit figures transmitted by both countries via Eurostat, the EU statistical agency, but they have not been impressed: the increase in the spreads has remained minimal.

This may be taken as an indication that the 'no bail-out' clause is not credible and that financial markets expect that, in the end, some form of financial solidarity will prevail. However, it is not clear what could make it credible—short of an effective default. Institutional schemes have been proposed to stir market surveillance by creating more differentiation among governments bonds. Buiter and Sibert (2005) and others have urged the ECB to impose haircuts on securities issued by excessive deficit countries, when these securities are used as collateral in its tenders. But this has been (rightly, in our view) opposed by the central bank because the ECB should take account of market prices, not try to manipulate them, and because its collateral is already valued at market prices (Papademos, 2005). After all, a central bank is not a fiscal watchdog. In November 2005, the ECB reminded the market that it would restrict its eligible collateral to securities rated at least 'A–' by rating agencies, thereby relying explicitly on the judgement of the market.

[5] Article 103(1) of the EC Treaty.

Figure 1
Yields on Benchmark 10-year Government Bonds in the Eurozone



Note: Luxembourg excluded.
Source: Bloomberg Stabilisation.

Our conclusion is thus that weak market discipline justifies the existence of an institutional device that fosters public finance sustainability throughout the monetary union.

Since Robert Mundell re-opened the discussion on currency areas in the early 1960s, the economic profession has debated whether a currency union could be effective without a fiscal union. Peter Kenen (1969) answered the question in the negative, as did the 1970 Werner report,[6] and the 1977 McDougall report on public finances in European integration. However, the 1989 Delors report and the Maastricht treaty rather emphasized fiscal decentralization. The case for using national budgets for fiscal stabilization in EMU primarily rests on the absence of a federal budget for stabilization purposes and on the inability of the common monetary policy to offset the asymmetric component of demand shocks.

The usual doubts on the effectiveness of discretionary fiscal policy notwithstanding, this requirement has also been recognized early on in the design of EMU (European Commission, 1990)—hence the acceptance of a degree of national fiscal autonomy. There has been a debate in Europe, as elsewhere, on the usefulness of active stabilization policies. The consensus has settled more or less around the notion that member countries should steer away from active fiscal manipulation, and let automatic stabilizers play on the revenue side, while maintaining some restraint on expenditures (Brunila, 2002). We regard this approach as appropriate in most circumstances, but we think governments may adopt a medium-term fiscal stance that departs from it (like the USA in the 1990s or Spain in the 2000s)[7] and that they should keep in hand the option of discretionary fiscal measures in the case of significant shocks. Recent research that points out the potentially detrimental effects of volatility on long-term growth (Ramey and Ramey, 1995; Aghion and Banerjee, 2005) only makes the case for autonomous stabilization stronger.

Three more controversial issues are (i) whether monetary union *per se* induces a bias towards fiscal laxity that needs to be corrected; (ii) whether EMU

[6] 'The margins within which the main budget aggregates must be held both for the annual budget and the multi-year projections will be decided at the Community level, taking account of the economic situation and the particular structural features of each economy' (Werner Committee Report, 1970).

[7] For example, after it had been qualified for EMU, Spain adopted and maintained a restrictive fiscal stance. This policy has had the effect of partially offsetting the expansionary effect of the drop in long-term real interest rates.

should be taken as an opportunity to correct existing political bias towards deficits; and (iii) whether discretionary fiscal policy has any role to play at the level of the euro area *as a whole*. Let us take them one by one.

The risk of a deficit bias in EMU—as compared to another exchange-rate regime—results from the disappearance of the traditional closed-economy crowding-out effect of expansionary fiscal policy, and from the removal of the threat of open-economy exchange-rate crises. If governments are short-sighted or politically motivated, or if partisan polarization provides a ground for attrition wars, the relaxation of immediate constraints can result in an addiction to deficits. But monetary union also makes the longer-term constraint tighter by removing the options of debt monetization and of devaluation (for a discussion, see Wyplosz, 2005). How governments react to a change in the exchange-rate regime is an empirical issue on which there is little systematic evidence—as exemplified by the dispersion in post-EMU fiscal behaviours within the euro area. We thus regard this argument as relatively weak.

A related, but distinct argument is that the EMU fiscal framework should be regarded as a substitute for the absence or the inadequacy of national frameworks.[8] Unlike the deficit bias argument, this one is exclusively based on political economy concerns. Its proponents claim that absent budgetary straitjackets, modern democracies are deficit-prone . Monetary union is thus taken as an occasion to give constitutional status at the EU level to fiscal rules that do not feature in national constitutions. What is frequently missing in such reasoning, however, is a proper justification of the EU involvement. In our view, EU constraints on national policy-making can only be justified if they are a way to internalize an externality that is overlooked when decisions are taken at the national level. We do not believe that the EU can simply claim to be a more effective and less deficit-prone governance structure than national authorities—unless this pretence rests on its less democratic character. National political bias ought to be corrected at the national level, not by imposing European constraints.

The third issue is that of aggregate fiscal policy. The current wisdom is that there is not much role for discretionary fiscal policy at the aggregate level. A survey of the US experience by John Taylor (2000) concludes that since monetary policy 'has been doing a good job' of keeping aggregate demand close to potential GDP, 'it seems best to let fiscal policy have its main counter-cyclical impact through the automatic stabilisers'. In EMU, it could be argued that the central bank has been much less activist and has on the whole done less of a good job, in part because the intrinsic diversity of the euro area and the ECB governance structure are obstacles to an activist monetary behaviour, and in part because the ECB statute gives less weight than the Fed's to full employment, even though the actual weight of current economic activity in the ECB decisions is a matter for empirical discussion.[9] Thus, fiscal activism could partially substitute for monetary activism.

However, coordinating decentralized fiscal policies is known to be adventurous, if only because finance ministers are accountable to local, not European voters. As a consequence, fiscal policy coordination can only be relied on in specific circumstances, for example in the case of severe crises, if monetary policy hits the zero bound or if a contra-cyclical behaviour risks undermining its credibility. Those circumstances do arise—as shown by the examples of Sweden in the early 1990s or Japan in the early 2000s. But they are rare. This leads us to conclude that an appropriate fiscal framework should provide an efficient venue for deciding on a discretionary joint action, without forcing governments to coordinate on a daily basis.

(ii) Reforms

While the trade-off between sustainability and stabilization was recognized early on, the relationship between the fiscal framework and structural reform has only gained prominence in recent years, when the disappointing growth performance of most Eurozone economies prompted simultaneous calls for structural reforms and further fiscal adjustment. It is widely recognized that Eurozone countries need to design and implement comprehensive

[8] Calmfors (2005) provides a good summary of the main arguments.
[9] See Gerlach (2005) for a discussion.

economic reforms, both for domestic purposes and because well-functioning goods, labour, and capital markets are needed for the single currency to operate properly.

Governments generally undertake unpopular reforms that pay off in the medium term, but involve short-term economic, budgetary and political costs, in either of two situations. First, they reform when a crisis looms and all possible alternatives have been exhausted; in this type of 'backs against the wall' environment, reforms tend to be comprehensive and frequently involve a budgetary consolidation. Second, reforms can also be undertaken in better times and in a more gradualist fashion; in that case, fiscal support can be necessary to offset the macroeconomic costs, compensate the losers, and avoid building up constituencies against further reforms. This amounts to sharing the cost of reforms with future generations, whom they will supposedly benefit. But reforms that entail an immediate budgetary cost are unlikely to be politically feasible in the presence of short-term budgetary constraints (see Razin and Sadka (2004) for an application to pension reform).

Empirical evidence on the conditions for reforms is mixed: while Boeri (2004) and the European Commission (2005) minimize the link with and the role of the macroeconomic environment, Debrun and Annett (2004) reach opposite conclusions and suggest that the existence of macroeconomic support may be conducive to reform.

The institutional framework of EMU can be regarded as reducing the incentive to reform in both cases. The provision of a stable macroeconomic environment may eliminate the sense of urgency and the ensuing need for immediate action—in short, ministers do not anxiously watch their Reuters screen any more, except maybe to check the oil price. At the same time, monetary support to reform cannot be forthcoming as the ECB only responds to the situation in the euro area as a whole, and fiscal support may be hindered by institutional constraints that weaken the incentive to gradual reform. At worst, the lack of reform undermines the responsiveness of macroeconomic policy, which in turn discourages reform—a sort of rigidity trap (Debrun, 2005). There is an increasing sense that the Eurozone is currently caught in such a trap. Moving out of it is not easy: even supposing political will to engineer reforms, the central bank and private agents must be convinced that those reforms are relevant and will increase potential growth.

The absence of clear empirical evidence of this mechanism is not an excuse for inaction: the political economy of structural reform is too complex an issue for cross-country regressions to deliver unambiguous results. Our view is that the need for reforms is too pressing for Europe to afford to ignore the risk that the framework it has put in place contributes to discouraging them. We therefore regard the incentives or disincentives to reform embedded in the fiscal framework as an important issue.

(iii) Conclusions

Summing up, the fiscal framework should strike a delicate balance between different goals. It should avoid constraining national fiscal behaviour excessively while redressing possible incentives towards deficits. It should make joint action possible without forcing coordination. And it should avoid discouraging reforms. At the same time, the literature on fiscal rules (Kopits and Symansky, 1998) emphasizes transparency, simplicity, and enforceability as preconditions for effectiveness. Any judgement on the fiscal framework and its possible reforms must be based on these criteria.

With these conclusions in mind, we turn to the assessment of the achievements so far.

III. A RECAP ON FISCAL POLICY IN EMU

In this section, we survey fiscal policy in EMU since 1999 and assess the effectiveness of the Stability and Growth Pact. We then summarize the main proposals for reforming it, and the reform package agreed upon in March 2005 by the European Council (a more detailed discussion can be found in Pisani-Ferry, 2005).

(i) The Failure of SGP1

The Stability and Growth Pact as designed and agreed on in 1997 (hereafter, SGP1) consisted in a medium-term target of 'close to balance or in surplus' public finances in each member country

and a binding 3 per cent limit for the general government deficit-to-GDP ratio (there was also a 60 per cent limit for the gross debt-to-GDP ratio, which was not considered binding). The originality of the Pact was in the monitoring process, which combined *ex ante* surveillance—through the discussion of multi-year fiscal plans, the so-called 'stability programmes', and *ex post* constraints based on a quasi-automatic warning mechanism for 'excessive deficit' countries and on a strict timetable for the issuance of public recommendations and, eventually, financial sanctions.

We assess SGP1 against three metrics: fiscal discipline, macro stabilization, and support to long-term growth. It is not excessive to state that it has failed all three.[10]

Whether the first two are attainable jointly obviously depends on the initial fiscal position and on the position in the cycle. Having failed to take advantage of the 1998–2001 upswing to improve their structural fiscal positions (Figure 2), EMU countries soon found fiscal discipline and macro stabilization to be contradictory. Faced with the post-2001 slowdown, they had to choose between pursuing fiscal consolidation and supporting economic activity: like Buridan's ass, they decided to do neither.

SGP1 thus failed to correct the deficit bias of EMU. While member countries had committed to bringing their public finances 'back to balance or in surplus', the cyclically adjusted aggregate public deficit of the Eurozone actually increased from 1.6 per cent in 1999 to 2.6 per cent in 2004, and aggregate public debt only marginally decreased, from 72.7 per cent to 70.8 per cent. Stability programmes were not anchors but moving targets.[11]

Germany, France, and Italy bear most of the responsibility. Buti and Pench (2004) have identified four reasons why: proactive fiscal policies are thought to be more efficient in larger, relatively less open economies; potential growth is lower in these countries, making fiscal adjustment more difficult; peer pressure does not impress larger countries very much; and all three delegate fiscal responsibility to their finance minister rather than building consensus at a cabinet level, making fiscal adjustment more difficult to enforce.

It has also been noted that many member countries have used loopholes in the European system of accounts to reduce the deficit reported to Eurostat, rather than actually decrease spending, using 'innovative' one-off transactions such as securitization, financial derivatives, one-off payments by state-related entities, etc. We return to this issue later.

The Pact eventually became dysfunctional when it appeared that the Council would not impose sanctions on excessive deficit countries. Given this dismal track record, it is hard to understand why some have warned against reforming the Pact on the grounds that this would impair its credibility.

SGP1 also failed to contribute to macroeconomic stability. True, Gali and Perrotti (2003) have shown that fiscal policy has been less pro-cyclical in the Eurozone since the introduction of the euro than before, leading to a more stable macro environment. The SGP has limited the scope for the kind of destabilizing discretionary impulses which dominated the 1980s and 1990s in Europe.[12] It was therefore an improvement. But Figure 2 illustrates that fiscal policy remained far from appropriate.[13] The fiscal stance was generally mildly pro-cyclical in the Eurozone in the period 1997–2005. It responded much less to the slow-down than in the UK or the USA: between 2000 and 2003, the cyclically adjusted primary surplus declined by 4.9 per cent of GDP in the UK against 1.1 per cent of GDP in the Eurozone.[14]

[10] For a discussion of the SGP and of the reasons why it was adopted in 1997, see the contributions collected in Brunila *et al.* (2001).

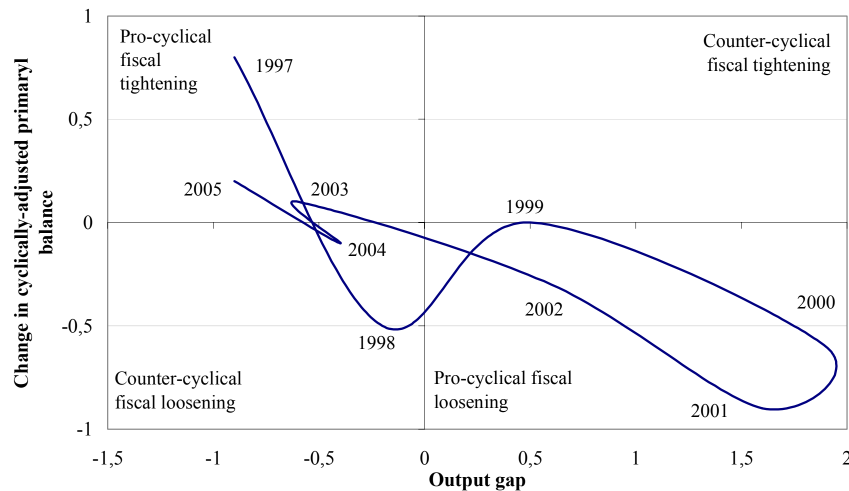
[11] Another failure is the resurgence of the electoral budget cycle, as evidenced by Buti and van den Noord (2004).

[12] Debrun and Masson (2004) have found that fiscal policies have been less pro-cyclical after 1999 in the Eurozone thanks to a change of behaviour in the lowest phase of the cycle. Ironically, the SGP has helped governments not to fight deficits too much when they are larger for cyclical reasons.

[13] Figure 2 should be taken with a grain of salt: a better measure of the discretionary impulse would correct for the 'one-off' measures mentioned above, and 2001 and 2002 are less clearly pro-cyclical than 2000 since the output gap was already decreasing.

[14] It decreased from 3.1 per cent to –1.8 per cent of GDP in the UK, and from 1.9 per cent to 0.8 per cent of GDP in the Eurozone (European Commission figures).

Figure 2
The Fiscal Stance of the Eurozone



Source: European Commission, AMECO database.

Finally, the SGP did not help Eurozone countries increase their long-term growth rate, in accordance with the goals of the Lisbon Summit of 2000. By treating all expenditures the same way, the Pact may have created a bias against public investment at a time where Europe should have increased its capital–labour ratio to catch up with the USA. It can be argued, however, that there is no clear evidence that Europe lacks public (as opposed to private) investment,[15] and that the choice between current spending and investment is not changed by the Pact. Less directly, but perhaps more importantly, by constraining fiscal policy in the short term, it has contributed to reinforcing the governments' myopia and has added to the difficulty of structural reforms as these reforms tend to imply short-term macroeconomic and budgetary costs.

(ii) Ownership and Incentives

Why has SGP1 failed? Part of the explanation is certainly that it was poorly designed. Critics (Pisani-Ferry, 1996; Eichengreen and Wyplosz, 1998) pointed out early on the risks of a Pact focused on headline rather than structural deficits, of the neglect of debts, or of the rough definition of the 'extraordinary circumstances' (i.e. recessions) which could exempt excessive-deficit countries from financial sanctions. All that proved to be true. But a more fundamental flaw proved to be the lack of incentives to comply with the spirit of the Pact and the lack of ownership of it in the main Eurozone countries. In France, Germany, and Italy, the Pact has not really been appropriated as a key feature of the fiscal policy framework. To the extent it has, it was more with reference to the 3 per cent threshold than through the commitment to the 'close to balance or in surplus' target. At the peak of the cycle, the 3 per cent limit gave rise to perverse incentives as a deficit of 1.5 per cent of GDP was considered safe and virtuous enough.

Furthermore, the very existence of the Pact may have discouraged the adoption of national fiscal frameworks, such as the British 'Code for Fiscal Stability' adopted in 1998. The focus of the discussion on the potentially harmful effects of fiscal laxity on a country's neighbours has distracted the policy-makers' attention from generally more important issues, such as the intergenerational redistribution involved in fiscal deficits or the composition of fiscal stabilization. For example, in 2005 French Finance Minister, Thierry Breton, could present the level and sustainability of public debt to the public as entirely novel issues.

[15] As Jakob von Weiszäcker has pointed out to us, the lack of public investment in Germany has probably more to do with rising social expenditures than with any European constraint.

(iii) The Importance of Government Balance Sheets

A less well-known feature of the Pact has been its focus on partial criteria, such as deficit and debt, rather than on the full government balance sheet. Two topics deserve discussion here.

The first one is the notion of public finance sustainability. This raises issues of measurement. The literature on sustainability focuses on the balance between *net* government debt (i.e. financial debt less the value of financial and non-financial assets) and the sequence of future primary cash flows. Any notion of sustainability should, therefore, make reference to the structure of today's balance sheet and to future revenues or liabilities (for an in-depth analysis of these issues, see Buiter and Grafe (2002)). However, SGP1 focused on the current deficit, overlooking sustainability. Furthermore, to the extent balance-sheet items were taken into account, they were exclusively limited to gross financial liabilities.

The other one is the increasing use by European governments of one-off revenue measures or of vehicles which allow spending without impacting the recorded deficit, leading to an increasing discrepancy between cumulated deficits and debt. The possibility had been pointed out at an early stage by Buiter *et al*. (1993) and reality has exceeded expectations. Koen and Van Den Noord (2005) and Von Hagen and Wolff (2004) have provided evidence that one-off measures have been used more frequently since the inception of EMU and have proven that their probability has been correlated with the magnitude of the deficit. There have been outright disposals of public assets with the aim of lowering the gross debt (but without any improvement in the underlying net wealth). There have been more devious operations aimed at substituting on-balance debt for off-balance liabilities. Some countries have cashed in an immediate revenue in exchange either for additional pension liabilities (France Télécom and EDF transfers in France; postal pensions securitization in Germany), or for lower future revenues (Italian, Portuguese, and Greek securitizations). The former are mere balance sheet restructuring and (given the disposal price is right) they do not impact the true economic value of the public sector, but the incentive is for the government to overlook the long-term price while focusing on the short-term benefits. The latter turn on-balance into off-balance liabilities. Hence the need for a comprehensive view of government balance sheets.

The most elaborate attempt to investigate empirically the dynamics of EU governments' valuations was undertaken by Milesi-Ferretti and Moriyama (2004). In the absence of a harmonized set of balance-sheet accounts for governments, they had to use yearly flows and to produce their own valuation of non-financial assets. They tracked the yearly changes in financial liabilities on the one hand, financial and non-financial assets on the other hand, and corrected for valuation effects. They uncovered a sharp contrast between the periods 1992–7 and 1997–2002. In the first period, increases in general government liabilities were matched by changes in assets and the net value of governments was relatively stable. This was not the case in the second period (Figure 3): the SGP involved a perverse incentive to contain the rise in the gross public debt through asset sales, and EU governments were poorer in 2002 than in 1997.

When properly assessed, the effect of the SGP on the sustainability of public finances has thus been less positive than commonly believed, and the reliance on partial targets has had the usual effect of giving incentives to window-dressing.

(iv) Reform Proposals

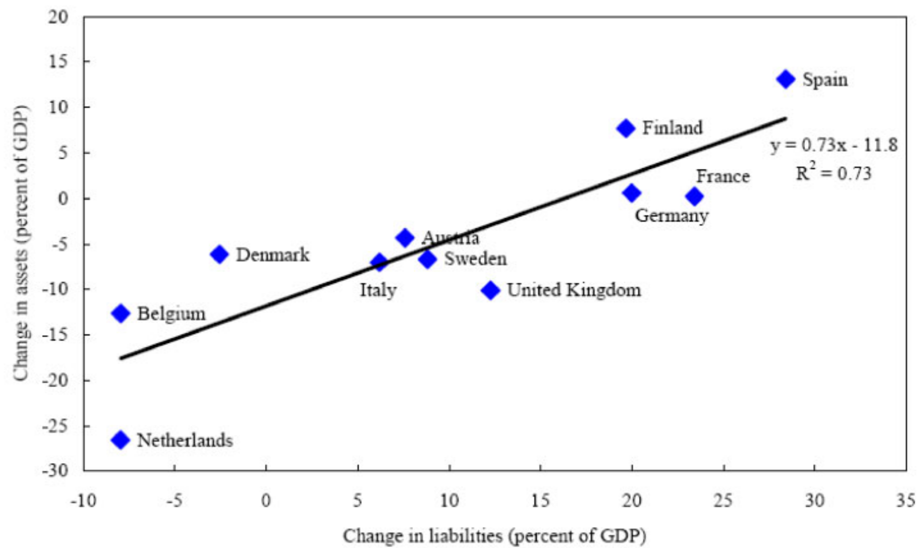
Many proposals have been made to reform the SGP, that can be grouped in five, mutually non-exclusive options aiming at:

(i) improving the cyclical properties of the Pact by introducing more discipline at the peak of the cycle and more flexibility at the trough (Sapir *et al*., 2004);

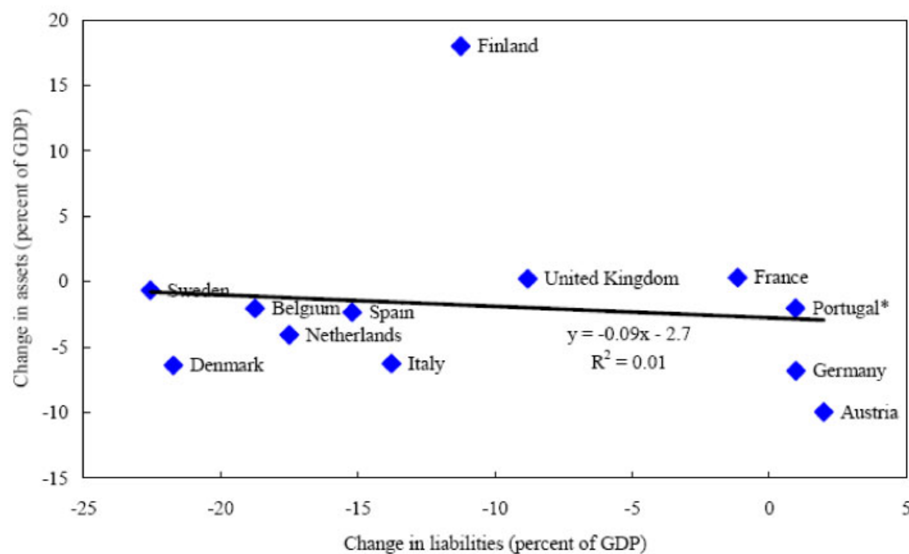
(ii) shifting the emphasis away from the deficit and towards public finance sustainability; this can be done by conditioning the deficit limit to the debt level (Calmfors and Corsetti, 2003), or, more accurately, by assessing sustainability using some projections of future public finance paths (Coeuré and Pisani-Ferry, 2005);

Figure 3
Changes in Government Assets and Liabilities

(*a*) 1992–7



(*b*) 1997–2002



Source: Milesi-Ferretti and Moriyama (2004).

(iii) correcting the anti-investment bias with a golden rule of some sort, or by introducing capital budgeting for governments (Blanchard and Giavazzi, 2004);

(iv) fixing the institutions rather than the rules, by delegating some aspects of fiscal policy (say, limits to the aggregate budget position) to independent expert committees (Von Hagen and Harden, 1994; Calmfors, 2005; Wyplosz, 2005);

(v) allocating deficit rights at the Eurozone level, so as to solve the 'common pool' problem. This includes the monitoring of the aggregate Eurozone deficit proposed by French Finance Minister, Dominique Strauss-Kahn, at the Ecofin Council of Dresden in April 1999, and the

Box 1: The Revised Stability and Growth Pact

The Stability and Growth Pact was revised in June 2005 (see the legal provisions in EU Council (2005*a*,*b*) and Buti *et al*. (2005) or Calmfors (2005) for a detailed presentation). The revision does not affect the 1992 Maastricht Treaty, in particular the definition and numerical value of the deficit and debt-to-GDP ceilings, but it replaces the 1997 regulation establishing the Stability and Growth Pact, which addresses both prevention and sanction.

As before, member countries submit medium-term targets and adjustment paths (the so-called 'stability programmes') for their general government deficit. Medium-term targets are now defined on a cyclically adjusted basis and can differ from one country to another, depending on potential growth rates and debt levels. It is envisaged that, at some point in the future, off-balance liabilities, such as pension rights, will also be taken into account. Deviation from the target and/or adjustment path (but not deficits in excess of 3 per cent of GDP) can be authorized as a consequence of structural reforms with short-term budgetary costs but long-term benefits.

The definition of 'exceptional circumstances', under which member countries may breach the deficit ceiling without being sanctioned, was also changed. They now correspond to a negative GDP growth rate or a protracted period of low growth relative to the potential growth rate, in effect giving member countries an extended deadline to correct their excessive deficits. When the deficit is marginally above 3 per cent, the Commission will also take into account what is called in the treaty 'other relevant factors', a modest term for a host of possible exemptions, such as R&D expenditures, development aid, or else the financing of European (read: German) unification.

The Council also emphasized the need to associate national parliaments more closely, and to improve the reliability and timeliness of budgetary forecasts and statistics. The Commission's initial proposals to build stability programmes based on Commission forecasts and to establish independent monitoring bodies were rejected.

'tradable deficit permits' proposal of Casella (1999), inspired by the schemes put in place to control greenhouse emissions.

As pointed out by Buti *et al*. (2005), each of these proposals addresses a specific problem of SGP1, but none of them solves all of the problems.

(v) The Revised Stability and Growth Pact

After the November 2003 decision of EU Finance Ministers (the so-called Ecofin Council) to suspend the application of the excessive deficit procedure to France and Germany, the need for a reform became evident. In the debate that ensued, the European Commission (2004) and the Ecofin Council substantially acknowledged the criticisms addressed to the SGP and took them partially on board in devising a revised Pact, which was approved in Spring 2005. Of the five options listed above, the Council took up the first two (improve the cyclical properties, acknowledge sustainability), excluded the third (carve out public investment) in spite of the repeated pressures of member countries such as Britain, Italy, and France, and concluded from the fourth that national institutions should be better involved in the budgetary surveillance process.[16] As to the fifth, it has surfaced in the discussions on coordination within the Eurogroup, but remains off the SGP agenda.

The main features of SGP2 are the new emphasis on public finance sustainability, and the added flexibility given to member countries in economic slowdowns (see Box 1). The most important change may be in the governance of the Pact. First, a consensus has emerged to give the Commission the right to bark, i.e. to send an early warning to a member country. The right to bite continues to rest with the Council.[17] This is a welcome step towards distin-

[16] See Deroose and Langedijk (2005) for a presentation of the Commission view.

[17] Although the corresponding legal provision has been a victim of the rejection by French and Dutch voters of the draft constitution, the Commission has taken a step forward by making public its reports on stability programmes before the Ecofin discussions.

guishing assessment from decision. Second, with SGP2, the Eurozone has moved away from its initial emphasis on governance by fixed rules and has reintroduced discretion. However, it has neither put in place intellectual foundations for a renewed system of governance nor addressed the issue of enforcement. How the new provisions will be interpreted and implemented therefore remains to be seen. The risk of undisciplined case-by-case decisions guided by political pressure and horse-trading is significant.

It is, however, unlikely that member countries will return to the drawing board before having experimented with the effects of the recent reform. What is now needed is a clear doctrine that would preserve discretion but constrain choices and ensure they remain consistent over time and across countries. Otherwise, the very legitimacy of a common discipline would be undermined. Whether or not the Council will be able to adopt this constrained-discretion mode of governance depends on the (now fixed) presidency of the Eurogroup and on the (still rotating) presidency of the Ecofin Council.

IV. TOWARDS A SUSTAINABILITY AND GROWTH PACT

What should a sensible *modus operandi* of SGP2 look like? In our view, it should (*a*) reconcile long-term sustainability and short-term stabilization, (*b*) approach sustainability in a way which is economically sound and does not give too much leeway to political discretion, and (*c*) foster, or at least avoid discouraging, growth-enhancing economic reforms. While fulfilling these requirements, it should also be instrumental in helping the Eurozone face its current priorities.

In the remainder of this paper, we elaborate on our previous work (Coeuré and Pisani-Ferry, 2005) to make the case for a Sustainability and Growth Pact which would meet these requirements, and we sketch out its main building blocks.

(i) Present Priorities

The Eurozone faces three priority challenges: aging populations; enlargement; and the need for growth-enhancing reforms. An SGP should help on all three fronts.

Aging

According to the UN, the share of working-age population in total population will fall from 66 per cent in 2005 to 56 per cent in 2050 in the four big European countries, while it will only decline from 67 per cent to 62 per cent in the USA. The additional burden of pensions, health, and long-term care will be only partially offset by lower education costs and, possibly, reduced unemployment benefits. This will have immense consequences on Europe's economic performance and public finances.

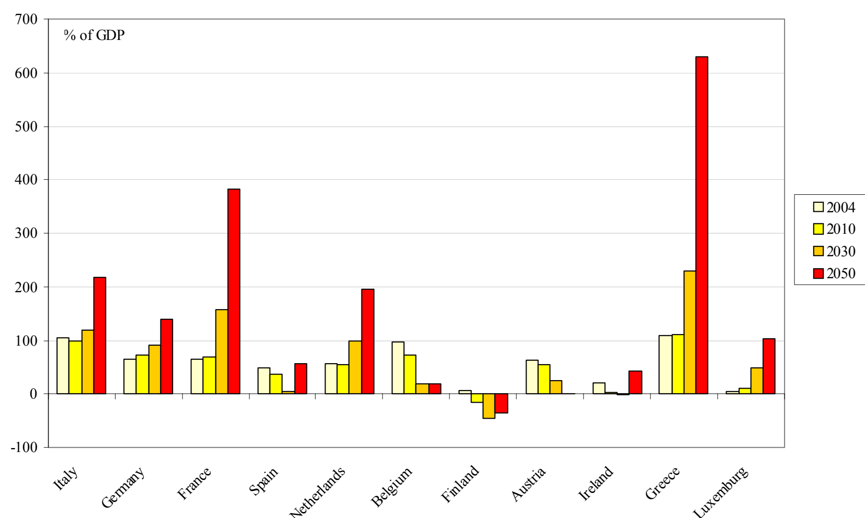
The best source so far for assessing the magnitude of the problem is the report by the Economic Policy Committee working group on aging (Economic Policy Committee, 2003, hereafter 'AWG').[18] According to the AWG group, public spending will increase by 3–7 per cent of GDP in most member states by 2050 if no corrective action is taken.[19] The AWG has also extrapolated budget balances and debt levels up to 2050 and reckoned a 'tax gap' *à la* Blanchard (1990), i.e. the adjustment needed in the tax rate, either to ensure inter-temporal balance or to reach a given debt level in 2050 (40 per cent of GDP in the AWG projections). Projections showed that, depending on the target, the 'tax gap' amounted to 4–7 per cent of GDP in France and Germany—a frightening height for countries with already high levels of government receipts. An alternative approach is to project the debt ratio.[20] Figure 4 shows the Commission projections, based on the work of the AWG, assuming the underlying primary balance remains the same as in 2004 and no stock-flow operations take place. Debt-to-GDP ratios would approach or exceed 200 per cent in France, Italy, the Netherlands, and Greece in 2050. Standard and Poor's has produced qualitatively similar results (Kraemer, 2005).

[18] This report is a first attempt at providing a comprehensive and consistent picture and is not without defects; a new report is expected for 2006. But the numbers are already scary (Economic Policy Committee, 2003).

[19] Note that the AWG figures we refer to at this point were published in 2003, prior to substantial pension reforms in France and Germany. The updated 2006 figures are used later in this paper.

[20] This is technically equivalent to adding to current public debt implicit age-related liabilities.

Figure 4
General Government Debt Trajectories Absent Fiscal Consolidation, 2004–50



Note: Extrapolation of general government gross debt assuming the underlying primary balance remains the same as the 2004 level and no stock-flow operations take place. Data unavailable for Portugal.
Source: European Commission (2005).

Enlargement
Ten new members joined the EU in 2004, several of which are expected to join EMU soon. Romania, Bulgaria, and other Balkan countries will follow. However, the debt/deficit dynamics is not the same for a high-growth, high-inflation 'New Europe' country and for a low-growth, low-inflation 'Old Europe' country. Between 1999 and 2004, nominal GDP growth averaged 8.1 per cent per year in the 10 new EU members against 5.4 per cent in the Eurozone. This implies that the debt-stabilizing primary surplus is on average lower for the new members. In Figure 5, we have sorted Eurozone and new member countries according to the primary balance which would have stabilized their debt-to-GDP ratio in 2004 (based on their average 1999–2004 nominal growth). Among the new members, only Slovenia and Malta needed a fiscal surplus to stabilize their debt ratio, while this was the case for six Eurozone countries. Nominal GDP growth rates will not converge in the foreseeable future as price levels and GDP per capita will still need to catch up with those of the Eurozone. Deficit targets should therefore not be uniform.

Economic reform
Reform seems to have slowed rather than accelerated since the creation of EMU (Elmeskøv and Duval, 2005). Five years after the Lisbon Council set overly ambitious goals, the lack of political incentives has created a deadlock.

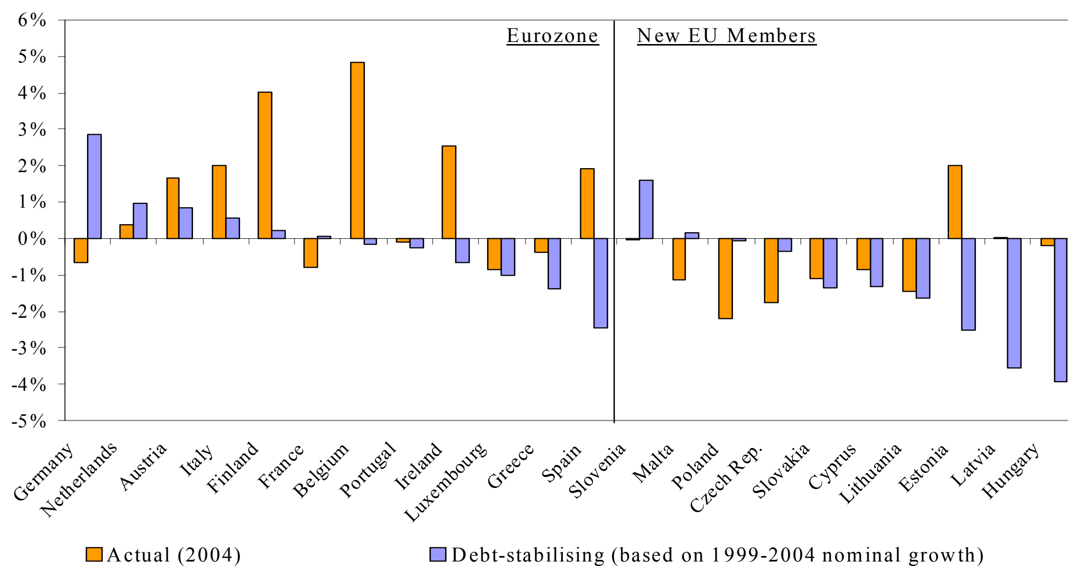
The Pact should help break this deadlock and reward reforms, as long as they are favourable to long-term growth and/or to improving governments' long-term fiscal positions.

The design and implementation of a reform-friendly Pact is not an easy task since there can be strong disagreements among member states and with the ECB on the effectiveness, or even the desirability of some policies (remember the French 35-hour work week) and on the time it will take for them to yield benefits. For sure, any newly elected government will claim that its programme is good for growth and ask for more budgetary leeway (remember Nigel Lawson's famous claim that potential output growth had accelerated right after he had taken office). Hence the need for a commonly agreed monitoring regime.

(ii) Proposals

Wrapping up the preceding remarks, the five building blocks of a Sustainability and Growth Pact would be: concepts, accounts, targets, procedures, and institutions.

Figure 5
Debt-stabilizing and Actual Primary Fiscal Positions (as % of GDP), 2004



Source: Authors' computation based on excessive deficit procedure figures.

Concepts
Clarity is needed on the methodology of the sustainability assessment and on the choice of the state variable for the monitoring of a government's fiscal situation.

The relevant scope should be the general government (i.e. central government, local government, and social security), as has been the case since the Maastricht treaty, because most countries have organized transfers between government sub-sectors and because all government entities are by definition funded by taxes. It would in theory make sense to include the national central bank to account for seigniorage revenue, but within EMU we can make the assumption that seigniorage does not depend on government policies.

The relevant state variable should be the net value of the government sector, i.e. the difference between its total assets and financial liabilities (excluding implicit liabilities). This is the closest equivalent to a company's equity. Non-financial government assets are known to be difficult to define, inventory, and value: think of the Tower of London or the North Sea oilfields. They are frequently non-marketable, and when they are, valuing them on the basis of their future cash-flows or of their liquidation value makes quite a difference. However, no sound fiscal policy can ignore the proper management of the government's balance sheet and, as already discussed, monitoring gross debt creates an incentive to hold a fire sale of public assets and worsen the long-term fiscal position. There is, therefore, a case for taking into account at least marketable assets (maybe not the Louvre, but certainly EDF).

Implicit liabilities, such as pensions, cannot be aggregated to financial liabilities because they belong to a different class of debt. Governments can default on them without incurring financial crisis, and, in fact, it is what a pension reform frequently amounts to.[21] Their present value can 'jump' as a consequence of parametric reforms or changes in growth assumptions. In addition, they depend intrinsically on the discount factor used to compute them and are therefore more fragile.[22] We therefore propose to use separately the present value of age-

[21] Indeed, one of the reasons why Eurostat decided not to treat unfunded pay-as-you-go pension schemes as on-balance liabilities is that 'their value can be unilaterally altered by the debtor' (Eurostat, 2004).
[22] Franco *et al*. (2004) discuss the measurement of pension liabilities and their link with fiscal sustainability. They conclude, as we do, that pension liabilities should not be added to conventional debt but should be used to complement the debt and deficit indicators. See also Oksanen (2004) for a discussion.

Table 2
The Balance Sheet of the French General Government at End-2003

	Assets		Liabilities		
	€billion	% of GDP	€billion	% of GDP	
Non-financial assets	1,008	63.6			
Financial assets	584	36.9	1,284	81.0	Financial liabilities
			308	19.4	Net value
Total assets	1,592	100.5	1,592	100.4	Total liabilities

Source: INSEE, Comptes de patrimoine.

related net expenditures, as an input for choosing the target for the government net value.

Sustainability should then be defined on the basis of a target for the net value of the government as a percentage of GDP at a certain horizon. This horizon should be distant enough to allow for corrective measures and to leave room for cyclical stabilization,[23] and close enough to be relevant for a newly elected government. This is compatible with the present Treaty since it is only another, economically more sensible way to interpret the 'close to balance or in surplus' requirement.

Accounts

EU statistical institutes currently produce a set of quarterly and annual national accounts, and they release general government deficit and gross debt numbers on a yearly basis. They should be required to produce a limited number of government balance sheet items, such as a breakdown of financial debt (distinguishing credit lines, bills, and bonds), financial assets (distinguishing gold, cash, equity, and loans), and non-financial assets (including real estate).[24] Accounts should be audited by Eurostat or by private auditing companies.

This is less heroic than it sounds. Several EU governments are publishing or are committed to publishing their assets and liabilities under international accounting standards, following pioneering countries outside the Eurozone (notably, New Zealand, Australia, the USA, the UK, and Sweden). France will publish an opening financial statement as of 1 January 2006. Table 2 gives an example of such a balance sheet, in national accounting (which may slightly differ from private accounting). The French general government 'equity', i.e. its net value, was €308 billion or 19.4 per cent of GDP as of 31 December 2003.

In addition, the EU should build on the AWG work and agree on a methodology for recording age-related liabilities.[25] An adequate method for comparison with balance-sheet items would be to compute the *net present value of Age-Related Net Implicit Liabilities* ('ARNIL'), i.e. the present value of age-related expenditures of the first-pillar pension schemes, *net* of corresponding contributions and age-related savings on the budget (e.g. on education spending) over a 30–50 year horizon, using a commonly agreed discount factor.[26]

Targets

Each country should adopt a target for the government's net value as a percentage of GDP. In the Appendix, we show that the sustainable net value of the government is the sum of two components: ARNIL and the net present value of all other future expenditures, including the opportunity cost of hold-

[23] This follows the line of the British Code for Fiscal Stability, that requires that 'over the economic cycle, the Government will ensure the level of public debt as a proportion of national income is held at a stable and prudent level'.

[24] The breakdown should help assess the liquidity of the government.

[25] This is consistent with the OECD suggestion of recording below the line of net lending/borrowing the flows linked to pensions liabilities (Lequiller, 2004).

[26] We do not propose to include other off-balance-sheet liabilities such as guarantees, catastrophe insurance, etc., as they depend on whether a given risk does or does not materialize.

ing government assets rather than buying back debt. A rough method could be to set a uniform target for the latter, and to apply a haircut to ARNIL in order to take into account the fact it does not represent financial claims and can be defaulted at a lower cost than financial claims through parametric reforms. Thus, the T-year target V_{t+T}^* for the government net value V_t could be:

$$V_{t+T} \geq V_{t+T}^* = (1 - \lambda)V_t + \lambda(\tilde{V} + \theta.ARNIL_t)$$

where $T = 5$ years is the target horizon, $\tilde{V}$ is the long-term net value target, $\lambda < 1$ a smoothing factor and $\theta < 1$ is the haircut coefficient. Note that applying a haircut to ARNIL is equivalent to using a mark-up when discounting future liabilities, to acknowledge the fact that age-related claims can be defaulted on all the more easily as they are in the distant future.

We take here, as tentative values for the parameters, $\lambda = 0.25$ (meaning that one-quarter of the relative gap between V_t and its target would be closed at a 5-year horizon) and $\theta = 0.5$ (meaning that half of the value of age-related implicit liabilities is discounted).

It could be argued that $\tilde{V}$ should be lower for countries which exhibit debt intolerance, such as emerging market countries (Reinhardt *et al.*, 2003). We make the assumption that this is not the case for any of the EU countries. Unlike in emerging countries, Eurozone governments can be supposed to have permanent access to financial markets. $\tilde{V}$ could in principle be negative, since it can be backed by a sequence of future surpluses. In the absence of a normative theory of government balance sheet management, in view of the illiquidity of a large part of the government assets, and to provide a safety margin, it is safer to take $\tilde{V}$ to be positive.

To set these parameters, further empirical calibration based on actual numbers would certainly be required. Here, we make an illustrative back-of-the envelope numerical application in the French case, where the assets and liabilities figures are available as of 31 December 2003. The AWG expects pensions, education, health-care, and unemployment costs in France to go up from 26.7 per cent of GDP in 2004 to 29.7 per cent in 2050 (Economic Policy Committee, 2006). We take 2 per cent for the discount rate—note that since age-related costs are measured in proportion to GDP, the discount rate is commensurate to the difference between the equilibrium real interest rate and the growth rate. Assuming that the costs are stabilized from 2050 onwards, the AWG projection implies that ARNIL was equal to 88.6 per cent of GDP at end-2003. With $\tilde{V} = 0$, $\lambda = 0.25$, and $\theta = 0.5$, we find V^*_{2008} = 25.6 per cent of GDP against V_{2003} = 19.4 per cent (Table 2). The unambitious target of a zero net value of the government would thus imply an adjustment of more than 1 per cent of GDP per year in the period between 2003 and 2008!

Obviously, the results depend on the parameters. This is an unavoidable consequence of working with present values (as illustrated by the current debate on the burden of corporate defined-benefits pension plans in the USA). However, simply to overlook future liabilities because their measurement raises technical difficulties amounts to choosing an infinite discount factor, which is hardly a satisfactory assumption either.

Procedures

The EU recently reformed its procedures and now prepares 'integrated guidelines' that set out 3-year plans for both macro- and microeconomic policies (plus employment policies). In a similar vein, we propose the following procedures. Every year, each country would publish a plan consisting of three elements: a *fiscal* plan, a *reform* plan, and a *contingency* plan:

- The fiscal plan should be along the lines of today's stability programmes, but with a longer horizon and projections of both assets and liabilities. It would describe a sequence of deficits and balance sheet operations (such as privatizations or asset purchases, securitizations, one-off revenues or payments, etc.) as a way to reach the target level for the government's net value. The deficit target would, therefore, no longer be uniform, since it would depend both on the target (which varies from one country to another) and on the nominal growth rate, which makes it more or less easy to reach the target.

- The reform plan would underpin the growth trajectory beneath the fiscal plan. It would resemble the existing 'national reform plans',

but with a stronger link to budgetary policy. An ambitious reform plan that has the potential of permanently increasing output could justify a less ambitious fiscal plan. Every year, the Commission would review the implementation of the plans: countries having breached their deficit target would be expected to be warned, and eventually sanctioned, especially if they also failed to deliver the promised reforms.

- The contingency plan would describe how budgetary policy would respond to shocks—good and bad, such as an unexpected increase in tax revenues or a recession. It would expand on elements which have been introduced in the stability programmes already, albeit in a more systematic way. The contingency plan would thus address the inflexibility of a medium-term-oriented fiscal strategy and could be used by the Commission in the assessment of fiscal developments.

From a political economy standpoint, it would be highly advisable for an incoming government to map out its economic strategy through preparing and publishing mutually consistent fiscal, reform, and contingency plans for the period corresponding to the length of its mandate. The plans would indicate how the government envisages the net value of the government evolving as a consequence of its action, how it intends to address the consistency between its fiscal and structural strategies, and how it could be expected to react to events. Those plans could be changed in the following years, but *vis-à-vis* a government's European partners as well as in front of the markets, their mere existence would represent a constraint on a government's temptation to err with the wind.

Institutions

Is such a scheme politically feasible? As already noted, the SGP was not properly integrated in member states' domestic agendas, and at best used as a scapegoat to justify fiscal adjustment.

One possible solution would be to hand over fiscal responsibility to an unelected body, such as a 'fiscal policy committee' (Wyplosz, 2005). This solution is dear to some professional economists but, after the French and Dutch referenda, we doubt that the European people would like it. Expert committees can nevertheless play a role in assessing the reform plans submitted by member countries. As already stressed, a risk of our approach, as of any departure from strict deficit monitoring, is of giving politicians a free hand by removing the fiscal constraint in exchange for hollow promises. Reforms have to be assessed *ex ante*, then monitored: this can be done by the Commission, but also by independent national fiscal audit committees as proposed by the Sapir (2004) report.

A key issue is how to create more political ownership of the SGP. Since the EU is not a standard representative democracy—Collignon (2004) discusses why and how to make it one—the only way to achieve this goal is through national parliaments. This implies that the fiscal, reform, and contingency plans should be approved by parliament after they have been discussed by Ecofin, so that parliament can take account of the remarks made in Brussels. Since most member countries have their budgets after summer, this calls for an 'SGP round' in Brussels during spring.

V. CONCLUSIONS

One might wonder whether EMU needs a fiscal framework at all. After all, the USA never really had one, and it does not seem to hurt it that much. But full fiscal discretion is not an option in a monetary union that does not exclude financial solidarity among its members but does not have a centralized government. It is the fate of Europe to weave endlessly at her loom and create new rules or institutions.

This paper has argued that the fiscal framework in place is far from satisfactory. We are not amused by its travails but would not rejoice at its eventual demise: failure to agree on and enforce a common fiscal philosophy could be a strong negative signal for the future of monetary union.

This is why we emphasize the need to take seriously the objective of a Sustainability and Growth Pact that would fully exploit the potential of the reformed SGP. Our proposals are certainly a matter for discussion. But we strongly believe that the technicalities of a sustainability assessment should not deter policy-makers from addressing the underlying

issues. It is certainly easier to focus on the deficit as currently measured and to overlook the more complex issues. However, this is at the expense of the appropriateness, and therefore of the legitimacy, of the Pact. There is no easy way to address the challenges that threaten European prosperity.

Implementing a 'Sustainability and Growth Pact' such as the one outlined in this paper would not eliminate the need for better governance of the Eurozone. The more the Pact departs from the set of simple rules it consisted of initially, the more an effective and politically legitimate governance structure will be needed. However, for decisions to be consistent across cases and over time, the first step will be to provide for sound conceptual and accounting foundations.

APPENDIX: FISCAL SUSTAINABILITY WITH A FULL GOVERNMENT BALANCE SHEET

We summarize the general government balance sheet as follows:

$$A_t = B_t + V_t \quad (1)$$

where A_t are financial and non-financial assets at market value, B_t are financial liabilities at market value, and V_t is the government net value.

For the sake of simplicity, we suppose that the yield r_t on government bonds and the yield ρ_t on government assets are constant over time. Also, we ignore all valuation effects, i.e. we treat A_t, B_t, and V_t as if they were registered at face value. In a more realistic model, revaluation should be accounted for. For instance, there could be cases of government finances which would be sustainable only as a consequence of an asset price bubble. The government's budget constraint is as follows:

$$(B_t - B_{t-1}) - (A_t - A_{t-1}) = rB_{t-1} - S_t \quad (2)$$

S_t being the primary budget surplus. Note that S_t excludes interest payments but includes asset revenues such as dividends and rents. We can define a 'primary primary' surplus $Z_t = S_t - \rho A_{t-1}$ excluding asset revenues. Putting together (1) and (2) shows that selling government assets improves the sustainability of V_t only insofar as these assets yield less than the government bond debt:

$$\begin{aligned} V_t &= (1+r)V_{t-1} + S_t - rA_{t-1} \\ &= (1+r)V_{t-1} + Z_t + (\rho - r)A_{t-1} \end{aligned} \quad (3)$$

Under perfect foresight, we can use (3) to express the government net value as the sum of future budget surpluses at any horizon:

$$\forall k \geq 1, V_t + \sum_{i-1}^{+\infty}(1+r)^{-1}\left[S_{t+i} - rA_{t+i-1}\right] = (1+r)^{-k}V_{t+k}. \quad (4)$$

We rule out the possibility for V_t to follow an explosive path:

$$\lim_{k\to+\infty}(1+r)^{-k}V_{t+k} = 0. \quad (5)$$

Let V_t* be the 'sustainable' government net value; V* is thus given by:

$$V_t^* + \sum_{i=1}^{+\infty}(1+r)^{-i}\left[S_{t+i} - rA_{t+i-1}\right] = 0. \quad (6)$$

Note that the government net value can be negative, i.e. financial debt can exceed government assets, if a path of non-negative primary surpluses (after accounting for the opportunity cost of holding government assets rather than buying back debt) is expected to materialize and reimburse this debt.

Suppose now that we can identify the age-related component of the primary surplus:

$$S = S_t^{na} + S_t^a \quad (7)$$

where $S_t^a < 0$ is net age–related revenues and $S_t^{na} = S_t - S_t^a$.

and let *ARNIL* be age-related net implicit liabilities:

$$ARNIL_t = -\sum_{i=1}^{+\infty}(1+r)^{-i}S_{t+i}^a. \quad (8)$$

Sustainability can now be written:

$$V_t \geq V_t^* = ARNIL_t - \sum_{i=1}^{+\infty}(1+r)^{-i}\left[S_{t+i}^{na} - rA_{t+i-1}\right]. \quad (9)$$

The sustainable net value is the sum of two components: *ARNIL*, and the net present value of all other future expenditures, including the opportunity cost of holding government assets rather than buying back debt.

REFERENCES

Aghion, P., and Banerjee, A. (2005), *Volatility and Growth*, Clarendon Lectures, Oxford, Oxford University Press.

— Cohen, E., and Pisani-Ferry, J. (2005), *Politiques Economiques et Croissance en Europe*, report to the French Council of Economic Analysis, Paris, La Documentation Française.

Blanchard, O. (1990), 'Suggestions for a New Set of Fiscal Indicators', Economics Department Working Paper, No. 79, Paris, Organization for Economic Cooperation and Development.

— Giavazzi, F. (2004), 'Improving the SGP through a Proper Accounting of Public Investment', Discussion Paper No. 4220, London, Centre for Economic Policy Research.

Boeri, T. (2004), 'Labor and Product Market Reforms: Why So Many and So Difficult?', Bocconi University website, mimeo.

Brunila, A. (2002), 'Fiscal Policy: Coordination, Discipline and Stabilisation', prepared for the Group of Economic Analysis of the European Commission.

— Buti, M., and Franco, D. (2001), *The Stability and Growth Pact: The Architecture of Fiscal Policy in EMU*, New York, Palgrave.

Buiter, W., and Grafe, C. (2002), 'Patching Up the Pact: Some Suggestions for Enhancing Fiscal Sustainability and Macroeconomic Stability in an Enlarged European Union', Discussion Paper No. 3496, London, Centre for Economic Policy Research.

— Sibert, A. (2005), 'How the Eurosystem Treatment of Collateral in its Open Market Operations Weakens Fiscal Discipline in the Eurozone (and What to Do About It)', mimeo.

— Corsetti, G., and Roubini, N. (1993), 'Excessive Deficits: Sense and Nonsense in the Treaty of Maastricht', *Economic Policy*, **16**, 57–101.

Buti, M., and Franco, D. (2005), *Fiscal Policy in Economic and Monetary Union: Theory, Evidence and Institutions*, Cheltenham, Edward Elgar.

— Pench, L. (2004), 'Size Matters—Why Do Large Countries Flout the Stability and Growth Pact?', *Journal of Common Market Studies*, **42**(5).

— van den Noord, P. (2004), 'Fiscal Discretion and Elections in the Early Years of EMU', *Journal of Common Market Studies*, **42**(4), 737–56.

— Eijffinger, S., and Franco, D. (2005), 'The Stability Pact Pains: A Forward-looking Assessment of the Reform Debate', Discussion Paper No. 5216, London, Centre for Economic Policy Research.

Calmfors, L. (2005), *What Remains of the Stability and Growth Pact and What Next?*, SIEPS Report, No. 8, Stockholm, Swedish Institute for European Policy Studies.

— Corsetti, G. (2003), 'How to Reform Europe's Fiscal Policy Framework', *Worlds Economic Journal*, **4**(1).

Casella, A. (1999), 'Tradable Deficit Permits: Efficient Implementation of the Stability Pact in the European Monetary Union', *Economic Policy*, **29**, 321–62.

Coeuré, B., and Pisani-Ferry, J. (2005), 'A Sustainability Pact for the Eurozone', in L. Tsoulakis (ed.), *Legitimacy and Governance in EMU*, Firenze, Robert Schuman Center for Advanced Studies, European University Institute.

Collignon, S. (2004), *Vive la République Européenne!*, Paris, La Martinière.

Debrun, X. (2005), 'Politiques Macroéconomiques et Politiques Structurelles: Quels Rapports?', in P. Aghion, E. Cohen, and J. Pisani-Ferry (eds), *Politiques Economiques et Croissance en Europe*, report to the French Council of Economic Analysis, Paris, La Documentation Française.

— Annett, A. (2004), 'Implementing Lisbon: Incentives and Constraints', in *Euro Area—Selected Issues*, IMF Country Report No. 04/235.

— Masson, P. (2004), 'L'UEM et son Cadre Macroéconomique: Plus Grand, Plus Haut, . . . Plus Fort?, communication au XLVI° Congrès des économistes belges de langue française.

Deroose, S., and Langedijk, S. (2005), 'Improving the Stability and Growth Pact: The Commission's Three Pillar Approach', Directorate-General for Economic Affairs Occasional Paper No. 15, Brussels, European Commission.

Economic Policy Committee (2003), 'The Impact of Aging Populations on Public Finances: Overview of Analysis Carried Out at EU Level and Proposals for a Future Work Programme', report by the EPC Working Group on Aging Populations, as adopted by the Ecofin Council on 4 November 2003.

Economic Policy Committee (2006), 'The Impact of Ageing on Public Expenditure: Projections for the EU25 Member States on Pensions, Health Care, Long Term Care, Education and Unemployment Transfers (2004–2050)', European Economy, Special Report No. 1/2006.
Eichengreen, B., and Wyplosz, C. (1998), 'The Stability Pact: More than a Minor Nuisance?', *Economic Policy*, **26**.
Elmeskov, J., and Duval, R. (2005), 'The Effects of EMU on Structural Reforms in Labour and Product Markets', Economics Department Working Paper No. 438, Paris, OECD.
EU Council (2005*a*), 'Improving the Implementation of the Stability and Growth Pact', Council Report to the European Council, 20 March.
— (2005*b*), Regulation (EC) No. 1056/2005 amending Regulation (EC) No. 1467/97 on speeding up and clarifying the implementation of the excessive deficit procedure, 27 June.
European Commission (1990), 'One Market, One Money', *European Economy*, No. 44, reprinted as M. Emerson *et al*., *One Market, One Money,* Oxford, Oxford University Press (1992).
— (2004), 'Strengthening Economic Governance and Clarifying the Implementation of the Stability and Growth Pact', Communication No. 2004/581.
— (2005), *Public Finances in EMU*.
Eurostat (2004), 'Pensions: Eurostat Communication to the Advisory Expert Group', 2 December.
Franco, D., Marino, M. R., and Zotteri, S. (2004), 'Pension Expenditure Projections, Pension Liabilities and European Union Fiscal Rules', International Workshop on the Balance Sheet of Social Security Pensions, Tokyo, 1–2 November.
Gali, J., and Perotti, R. (2003), 'Fiscal Policy and Monetary Integration in Europe', *Economic Policy*, 37, 533–72.
Gerlach, S. (2005), 'Interest Rate Setting by the ECB: A Dissenting Opinion', Basle, Bank for International Settlements, mimeo.
Kenen, P. (1969), 'The Theory of Optimum Currency Areas: An Eclectic View', in R. Mundell and A. Swoboda (eds), *Monetary Problems of the International Economy*, Chicago, IL, University of Chicago Press.
Koen, V., and van den Noord, P. (2005), 'Fiscal Gimmickry in Europe: One-off Measures and Creative Accounting', Economics Department Working Paper No 417, Paris, Organization for Economic Cooperation and Development.
Kopits, S., and Symansky, S. (1998), 'Fiscal Policy Rules', Occasional Paper No. 162, Washington, International Monetary Fund.
Kraemer, M. (2005), 'In the Long Run, We are all Debt: Ageing Societies and Sovereign Ratings', *Standard and Poor's Credit Ratings*, 18 March.
Lane, P. (2005), 'Global Bond Portfolios and EMU', Working Paper No. 553, Frankfurt am Main, European Central Bank.
Lequiller, F. (2004), 'Accounting for Implicit Pension Liabilities', International Workshop on the Balance Sheet of Social Security Pensions, Tokyo, 1–2 November.
Milesi-Ferreti, G. M., and Moriyama, K. (2004), 'Fiscal Adjustment in EMU Countries: A Balance Sheet Approach', Working Paper No. WP/04/143, Washington, International Monetary Fund.
Oksanen, H. (2004), 'Public Pensions in the National Accounts and Public Finance Targets', CESifo Working Paper No. 1214.
Papademos, L. (2005), 'The Political Economy of the Reformed Stability and Growth Pact: Implications for Fiscal and Monetary Policy', speech delivered at the conference, 'The ECB and its Watchers', 3 June.
Pisani-Ferry, J. (1996), 'Fiscal Policy under EMU', *The CEPII Newsletter*, No. 6, 2nd Semester, available on CEPII website.
— (2005), 'La Réforme du Pacte de Stabilité: ni Règles, ni Discretion', in *Les Finances Publiques: Défis à Moyen et Long Termes*, Charleroi, CIFoP, 155–70.
Ramey, G., and Ramey, V. (1995), 'Cross-country Evidence on the Link Between Volatility and Growth', *American Economic Review*, **85**, 1138–51.
Razin, A., and Sadka, E. (2004), 'Privatizing Social Security: A Political-economy Approach', *Monetary and Economic Studies*, Tokyo, Bank of Japan, 127–36.
Reinhart, C., Rogoff, K., and Savastano, M. (2003), 'Debt Intolerance', NBER Working Paper no. 9908, August.
Sapir, A., *et al*. (2004), *An Agenda for a Growing Europe : The Sapir Report*, Oxford, Oxford University Press.
Sargent, T., and Wallace, N. (1981), 'Some Unpleasant Monetarist Arithmetic', *Federal Bank of Minneapolis Quarterly Review*, **5**(3).
Taylor, J. (2000), 'Reassessing Discretionary Fiscal Policy', *Journal of Economic Perspectives*, **14**(3), 21–36.
Von Hagen, J., and Harden, (1994), 'National Budget Processes and Fiscal Performance', *European Economy, Reports and Studies*, **3**, 311–418.
— Wolff, G. (2004), 'What Do Deficits Tell Us about Debt? Empirical Evidence on Creative Accounting with Fiscal Rules in the EU', Discussion Paper 37/2004, Frankfurt, Deutsche Bundesbank.
Werner Committee (1970), 'Report to the Council and the Commission on the Realisation by Stages of Economic and Monetary Union in the Community', *Supplement to Bulletin 11-1970 of the European Communities*, Office for Official Publications of the European Communities.
Wyplosz, C. (1997), 'EMU: Why and How it Might Happen', *Journal of Economic Perspectives*, **11**(4), 3–21.
— (2005), 'Fiscal Policy: Institutions vs. Rules', *National Institute Economic Review*, **191**, January.