The Maastricht Fiscal Criteria: Required but Ineffective?*

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Abstract. The paper investigates the rationale for, and the effectiveness of the fiscal criteria in the Maastricht treaty against the background of two questions: What are the incentives for an unsound fiscal policy in EMU, and what are the (potential) negative externalities if such a policy were to occur. The paper argues that EMU creates both incentives for a higher fiscal deficit while respecting solvency, and incentives for not rectifying a potentially unsustainable debt level once one is a member. Unsound fiscal policy could trigger important negative externalities for the other member countries. The paper concludes that the current fiscal provisions of the Maastricht treaty are not sufficiently well defined and the envisaged sanctions not strong enough to enforce a disciplined fiscal stance. This leads to proposals of supplementary measures for surveillance and alternative sanctions. Staying within the framework of the Maastricht treaty, it is strongly suggested that both debt and deficit criteria should be strictly surveyed, but in view of their conceptual and operational deficiencies they should be supplemented by additional indicators. Based on this broader measurement concept, it is proposed to use semi-automatic and market-led sanctions to enforce a disciplined fiscal stance.

Key words: EMU, Maastricht Treaty, fiscal criteria

I. Introduction

The Maastricht treaty (MT) as the latest step in the process of European integration schedules the completion of the European internal market by introducing a common currency around the turn of the century. To be allowed to participate in the European Economic and Monetary Union (EMU), a member state of the EU must fulfil five conditions signalling nominal economic convergence, the famous convergence criteria. Three are monetary (on inflation, long-term interest rates and exchange rates) and two are fiscal criteria: a "sustainable government financial position" deemed necessary for participation in EMU is checked by observing how public deficit and public debt, both measured in percent of GDP, stand relative to official reference values of 3 percent and 60 percent.[1] Contrary to the monetary criteria, the fiscal criteria are not only entry conditions for joining EMU, but they are also valid as fiscal restrictions once a country participates in EMU. For most EU countries, the fiscal criteria constitute the binding constraint (Table I).

The paper argues for the general necessity of fiscal provisions in EMU but concludes that the Maastricht criteria are not sufficiently well defined and the envisaged sanctions not strong enough to prevent member states from pursuing an unsound fiscal policy in EMU. This raises the need for improved surveillance mechanisms and sanctions. The structure of the paper is as follows: Section II

commences by highlighting how the regime shift to EMU is likely to modify the economic environment for the member states. This triggers various incentives for a higher fiscal deficit while respecting the solvency condition of government as well as incentives for not rectifying too-high-a-debt position; both are likely to exert negative externalities on other member countries. Thus there is a rationale for Maastricht-like fiscal restrictions. Section III investigates whether the current fiscal provisions of the MT are able to shield EMU against unsound national fiscal policy. It is first shown that the current criteria cannot discriminate between sound and unsound fiscal behaviour, and second that the sanction mechanisms of the MT to enforce a disciplined fiscal stance in EMU are totally inadequate. This leads us to propose supplementary measures and alternative sanctions (Section IV). Staying within the framework of the MT, it is strongly suggested that both debt and deficit criteria should be strictly surveyed, but in view of their conceptual and operational deficiencies they should be supplemented by additional indicators: a measure for contingent liabilities (most importantly for social security debt), and a measure for the structural deficit. Based on this broader measurement concept, it is proposed to use semi-automatic and market-led sanctions to enforce a disciplined fiscal stance.

II. Enhanced Incentives for and Likely Externalities of a Looser Fiscal Policy in EMU

The Delors Report (1989) and the following publications by the European Commission before and after the MT was signed are not particularly explicit about the rationale for the fiscal provisions of the MT (e.g. European Commission 1990 and 1994).[2] This has given rise to an ongoing discussion in academic and policy circles about the necessity and usefulness of the fiscal criteria, with some, but no strong consensus emerging. This section briefly explains how the regime shift to EMU is likely to modify the economic environment in Europe. From this it derives potential incentives for unsound fiscal policies in EMU, and the negative externalities such policies may imply.

1. MODIFICATIONS IN THE ECONOMIC FRAMEWORK LIKELY TO BE BROUGHT ABOUT BY EMU

The main changes in the economic environment likely to result from EMU and which could significantly affect national fiscal policies are the following:

- a strong reduction of risk premia for highly indebted countries
- more integrated financial markets leading to flatter supply and demand curves for credits
- enhanced growth expectations, especially in poorer and highly indebted countries
- the elimination of the exchange rate as an adjustment instrument
- enhanced tax competition, delimiting an autonomous revenue policy.

Table I. EU-15 Performance in view of the Maastricht convergence criteria, 1994 and 1995

	Deficit level (in% of GDP)		Debt level (in% of GDP)		Inflation rate (CPI)		Long term interest rate		Exchange rate ERM particip.
	1994	1995*	1994	1995*	1994	1995**	1994	1995**	Nov. 1995
Austria	**4.5**	**5.5**	**65.7**	**68.0**	3.0	2.4	7.0	7.3	yes
Belgium	**5.3**	**4.5**	**135.0**	**134.4**	2.4	1.5	7.8	7.7	yes
Denmark	**3.8**	2.0	**75.6**	**73.6**	2.0	2.2	7.8	8.5	yes
Finland	**5.8**	**5.4**	59.8	**63.2**	1.1	1.2	9.1	9.2	no
France	**6.0**	**5.0**	48.4	51.5	1.7	1.7	7.2	7.7	yes
Germany***	2.5	2.9	50.2	58.8	2.7	1.9	6.9	7.0	yes
Greece	**11.4**	**9.3**	**113.0**	**114.4**	**10.9**	**9.7**	**20.8**	**17.9**	no
Ireland***	2.1	2.7	**91.7**	**85.9**	2.4	2.6	7.9	8.4	yes
Italy	**9.0**	**7.4**	**125.4**	**124.9**	**3.9**	**5.2**	**10.6**	**12.4**	no
Luxembourg***	−2.2	−0.4	6.1	6.3	2.2	2.1	6.4	6.1	yes
Netherlands	**3.2**	**3.1**	**78.0**	**78.4**	2.8	2.1	6.9	7.1	yes
Portugal	**5.8**	**5.4**	**69.4**	**70.5**	**5.2**	**4.3**	**10.4**	**11.7**	yes
Spain	**6.6**	**5.9**	**63.0**	**64.8**	**4.7**	**4.8**	10.0	**11.5**	yes
Sweden	**10.4**	**7.0**	**79.7**	**81.4**	2.3	2.9	9.7	**10.7**	no
United Kingdom	**6.8**	**5.1**	50.3	52.5	2.4	2.8	8.0	8.3	no
Threshold level	3.0	3.0	60.0	60.0	3.1	3.0	10.0	10.2	

* First 9 months.
** European Commission forecasts (autumn 1995).
*** Not subject to the excessive deficit procedure (Council decisions, 26.9.1994 and 10.7.1995).
Bold markings signal a violation of the convergence criteria. For the inflation and the interest rate criterion, the average of the three countries with the lowest inflation rate was taken, adding 1.5 percent and 2 percent, respectively, to determine the threshold levels (see Art. 1 and 4 of the protocol on the convergence criteria of Art. 109j of the MT).
Sources: European Commission (1995), and European Monetary Institute (1995).

EMU is Likely to Bring about a Strong Reduction in Risk Premia on Interest Rates

Some economists (e.g. Bishop *et al.* 1989) have stated that the Maastricht fiscal criteria are superfluous since financial markets alone would effectively restrain fiscal policy adventurism in EMU by imposing efficient risk premia on government debt. Other economists (e.g. de Grauwe 1994; Neumann 1995), however, implicitly or explicitly assume the contrary to occur in the case of EMU: independently from national fiscal policy, they expect risk premia to go down simply by the participation in EMU. We share the latter view.

At first sight, the assumption that EMU-participation will trigger a reduction in risk premia given an unchanged fiscal stance seems strange. With adjustable exchange rates, the total risk premium a country pays on its debt (say, the ex ante interest rate differential compared to Germany,[3] the EMS leader) is the sum of devaluation, exchange rate and default risk, the devaluation risk taking the lion's share. As long as debt is not inflation-indexed or emitted in a foreign currency, a

country can always prevent debt default through monetisation of her domestic obligations. Such an implicit monetary bail-out by the national central bank inevitably leads to inflation and currency devaluation. This is not feasible any longer in EMU, and thus EMU will lead to an elimination of the devaluation and exchange rate risk. If monetary bail-out is intended to prevent a default situation, an unchanged fiscal stance should induce the expectation of a rising probability of debt default, and the (eliminated) devaluation risk could be expected to be transformed 1:1 into a default risk. Consequently, one would expect only minor interest rate reductions through EMU by the elimination of the pure exchange rate risk.

Such a reasoning, however, omits one important consideration: devaluation expectations resulting from an expected loose monetary policy may not be directly linked to the prevention of an imminent debt default. A government may rationally be expected to produce inflationary policies long before an unsustainable fiscal stance occurs, be it for reasons of optimal taxation or political economy. This explains why some European countries with a debt ratio similar to Germany (such as Finland and Spain) have to pay higher interest rates than the EMS leader. Given actual debt ratios and historical precedence,[4] pure default risk in EMU may continue to be rationally viewed as rather low or even non-existent despite rising debt ratios, at least for some time. EMU could then provide a significant alleviation of the interest burden especially for highly indebted countries with a high-inflation history.

Financial Markets Will Become More Integrated

Economists are rather unanimous in stating that a single European currency will contribute to more integrated financial markets, increasing capital mobility and the EMU-wide substitutability of assets. This will inevitably flatten the supply and demand curve for both private and government credits. One may reasonably argue that there is a global trend towards more integrated world financial markets independently from EMU. Based on empirical evidence that sectoral saving-investment imbalances and their financing are still to a significant degree segmented along national border lines, there are reasonable arguments to conjecture that EMU will have an extra impact on capital mobility between the member states of the EU.[5]

Higher Growth Expectations Especially for Poorer Countries with Fiscal Problems

The just predicted significant reduction in real interest rates and enhanced access to EMU-wide saving in addition to the other conjectured advantages of a common currency may contribute to expectations of supplementary and durable growth effects (European Commission, 1990, and Baldwin, 1991). The peripheral countries of the EU with their monetary and fiscal problems could be the largest beneficiaries of a single currency. Thus an effect similar to the 1992 internal market programme

may arise in that peripheral EU countries may expect EMU to induce an acceleration in the pace of real convergence towards a higher EU-wide income level.

The Elimination of the Exchange Rate as an Adjustment Instrument

With a fixed exchange rate, EMU members are losing a central instrument of adjustment to asymmetric economic shocks. In the past, the exchange rate was amply used by EU countries to change relative prices quickly in order to accommodate demand and supply shocks. This past reliance on exchange rate adjustments reflects the low flexibility of domestic prices, and steep aggregate demand and supply curves as a result of less integrated goods and factor markets (Bayoumi and Thomas, 1995). Progress in European integration should eventually flatten the supply and demand curves, but slow adjustment is likely to cause substantial disruptions to the local economies in the meantime, exacerbating already severe and persistent regional unemployment problems within the member states.

While progress in integration should foster the adjustment capacity, a common currency is likely to accelerate the necessary pace of adjustment. Furthermore, the integration of the central and eastern European reform countries into the European (and world) economy will accentuate sectoral and regional specialisation, but the impact on EU countries may not be symmetric.[6] Thus, abandoning the instrument of exchange rate adjustment may happen at a time when it is most needed for some countries.

A Diminished Scope for Increasing National Public Revenues

Besides the elimination of seigniorage as an autonomous source of government revenue,[7] EMU will also reduce the effectiveness of tax rate increases to redress the fiscal position of an member states. A single European currency establishes a more integrated internal market by increasing transparency and reducing transaction costs. It follows that the autonomy to increase taxes will be even more limited: enhanced cross-border shopping limits the scope of indirect tax adjustments, and increasing factor mobility limits the taxation of factor income, particularly of capital (Genser and Haufler, 1995).

2. INCENTIVES FOR A LOOSER FISCAL POLICY IN EMU

The predicted shifts in the economic environment will undoubtedly change the setting of fiscal policy. While some of these shifts may, in principle, support fiscal consolidation, overall the incentives for a looser fiscal policy are likely to prevail. As regards these incentives, it is useful to distinguish incentives for a higher fiscal deficit while respecting solvency constraints from incentives for not rectifying a potentially unsustainable debt level. Unsustainability may be defined here as a public debt level beyond which the costs of extracting taxes and/or cutting

expenditures for the debt service increases beyond bounds, rendering (partial) debt default inevitable.[8]

Enhanced Incentives for Excessive Deficits

(i) Our first prediction for EMU, a decline in risk premia for highly indebted countries, implies a downward shift of the supply curve for credits to the government. Our second prediction, namely a flatter credit supply curve due to increased financial market integration, strengthens the effect of the first phenomenon by lowering the marginal costs (in the form of increased interest rates) of additional credits. For a country with a deficit bias, e.g. because of a politically weak government, credits are a kind of normal good with the demand curve being a negative function of the price. Hence, cheaper credit for any fiscal stance induces an increase in deficits.

(ii) A potential deficit expansion in EMU may be related to expectations about the benefits of EMU and the speed of income convergence. If low-income member states can expect a higher (transitional) economic growth rate, this allows for a higher (transitional) deficit level under consumption and tax-smoothing considerations. A similar reasoning holds for regional income disparities within member states. The differentials in per capita output in European regions are still very high, ranging from 1.5 to 2.4 in PPP in 1992 (highest to lowest regional GDP/capita) in the individual member states, and reaching over 4:1 within the EU (Holzmann, 1995). If the lower-income regions expect (or are expected) to converge rapidly toward average national income levels, this provides an incentive to run regional fiscal deficits, or to finance part of the central government transfers to the lower-income regions via debt and not via tax revenue. This incentive is enhanced if the transfers are expected to accelerate the regional convergence process. Deficit-increasing central government transfers to poorer regions abound in the EU (e.g. in Belgium, Germany and Italy). Expectations of EU structural funds expenditures increasing in connection with EMU may have a similar effect on actual deficits. Such expectations may emerge with the envisaged increase of structural expenditures within the EU budget.

The conjecture is that participation in EMU may, analogously to the 1992 internal market programme, lead to overly optimistic expectations with respect to the speed of convergence in the output of low-income member states and regions, resulting in a higher deficit level than otherwise. Such an effect could substantially be fostered by the entry of the transition economies of central and eastern Europe into the EU/EMU after the turn of the century. If the expected growth rates do not materialise, however, the result will be a much higher debt level than planned, with further pressures on the deficit level if the primary deficit cannot be adjusted accordingly. The experience of low-income EU countries and late-comers in European integration (Greece, Portugal, Spain and Ireland) during most of the

1980s/early 1990s can be interpreted to support this view, and the econometric evidence is fairly robust (Holzmann, 1995).

(iii) With the lack of the exchange rate instrument within EMU, various economists have argued that fiscal policy could be an alternative adjustment instrument (e.g. Gros and Thygesen, 1993), and in view of an absent fiscal federalism in the EU fiscal flexibility is indeed required (e.g. Bayoumi and Eichengreen, 1994). The argument to use fiscal policy as an adjustment instrument against temporary shocks is well taken. Yet, the experience in many European countries indicates a rather indiscriminate use of fiscal policy for both temporary and permanent shocks, aggravating and not facilitating the required adjustment.

The introduction of a common currency is likely to accelerate the true creation of the internal market and the structural adjustment process involved. The initiation of the internal market as of January 1987 and its formal completion as of January 1, 1993 do not mean that corresponding adjustments in the good, service, labour and financial markets have already taken place. Actually, there are very few signs for both the structural adjustment and the economic benefits expected (Hoeller and Louppe, 1994). It is strongly conjectured that only in the years leading up to the common currency and particularly afterwards will the full integration process unfold. Adjustment pressure will be further enhanced by the economic integration of central and eastern European reform countries into western Europe (Holzmann et al. 1994). Given past experience, this is likely to exert strong pressures to expand the social and other budgetary expenditures of member states as well as the structural funds of the EU.

Allowing for unconstrained budgetary support as both a shock and structural adjustment instrument may be dangerous given the track record of many European economies; access to budgetary resources is likely to hamper rather than foster regional and/or sectoral adjustment.[9] Instead of solving problems in the real economy, the only durable macroeconomic effect may be durably high deficits. Hence, accepting caps on budget deficits may be considered a self-binding mechanism for governments. If credible, this may force labour to become more flexible with regard to wage-price setting and inter-regional mobility.

Enhanced Incentives for not Rectifying a Potentially Unsustainable Fiscal Position

The dilemma of already highly indebted governments (such as Belgium, Greece and Italy) is that their fiscal position is potentially unsustainable and needs to be rectified. As the Irish example since 1987 suggests, a domestic political consensus is very helpful for achieving a dramatic fiscal turnaround. Such a consensus is easier to reach if the incentives to pursue fiscal consolidation are strong since the short-term costs may be high (Martin, 1992). While an unconditional EMU entry would certainly facilitate fiscal consolidation because the immediate interest rate

reduction implies an alleviation of the debt service burden, it would be naive to assume the primary surplus to be exogenous.

In another paper (Demmel *et al.* 1995), we model the government as a social planner maximising intertemporal utility by the instrument of fiscal transfers. The decision on fiscal consolidation or fiscal expansion crucially depends on the difference between the real interest rate (including the risk premium) and the sum of real growth rate and rate of time preference of the government. If it is positive (e.g. if financial market sanctions are sufficiently high to be effective), it is optimal for a country to consolidate fiscally. In turn, an increase in the risk premium will not lead to a fiscal turnaround if the rate of time preference is sufficiently high. Such a case may describe the polit-economic environment of a policymaker facing re-election. If the government disregards the impact of debt on economic growth, a reduction of risk premia and thus of real interest rates may lead to: (i) a switch from debt consolidation to debt expansion; (ii) an increase in the pace of debt expansion; or (iii) a lowering of the pace of debt consolidation. The chosen debt path depends on the initial parameter constellation. In other words, the likelihood of a worsening of the debt position increases.

Albeit no empirical estimates on this issue are yet available, it seems that despite a fall in the effective nominal and real interest rates on government debt since 1990 in most EU countries, there was little progress in fiscal consolidation, and for the EU15 the average primary balance, which was around zero in 1990, turned negative again (Table II). Clearly, the cyclical down-turn during these years had an influence as well. Yet, very tentative observations of Belgium, Greece and Italy suggest that high risk premia on their public debt during the early 1990s were not yet sufficient to induce a fiscal turnaround either.

3. NEGATIVE EXTERNALITIES TRIGGERED BY UNSOUND FISCAL POLICIES IN EMU

Negative externalities may be triggered both by excessive deficits, while still respecting the solvency constraint of government, and by unsustainable debt levels. While deficit-related externalities will affect primarily the real economy through interest rate and exchange rate effects, debt-related externalities may pose a threat to price stability in EMU.

Excessive Deficit Externalities

(i) With regard to incentives for higher deficit levels in EMU, most of the academic discussion has centred around aggregate demand externalities and the need for fiscal policy co-ordination. With an EMU-wide credit supply curve, the effects of a looser fiscal policy can partially be externalised since the related rise in interest rates within EMU is also borne by other member states.

Some authors argue that such an effect is not really relevant (e.g. Buiter *et al.*, 1993). At the theoretical level, it is argued that a shift in the demand curve for

Table II. Real interest rate spread[a,b] of long-term bonds and primary balance in the EU

	1990	1991	1992	1993	1994	1995 [c]
Austria	−0.5	0.4	0.3	0.3	−0.2	−0.2
Belgium	0.5	1.2	2.4	1.5	1.2	1.1
Denmark	2.0	2.0	3.0	3.1	1.6	1.2
Finland	1.0	2.5	5.1	3.7	3.8	2.9
France	0.4	0.9	2.3	1.8	1.3	0.9
Germany	0.0	0.0	0.0	0.0	0.0	0.0
Greece	...	...	5.2	5.0	4.8	2.5
Ireland	0.6	1.1	2.2	3.3	1.3	0.6
Italy	1.1	1.8	3.7	4.0	2.4	1.8
Luxembourg	−1.2	0.2	0.8	0.4	0.0	−1.1
Netherlands	0.5	0.7	1.0	0.9	−0.1	−0.1
Portugal	...	0.5	0.7	1.5	0.9	2.1
Spain	1.7	1.4	1.7	2.6	1.0	1.4
Sweeden	−3.3	−3.8	3.5	0.8	3.1	2.6
United Kingdom	−2.6	−1.6	0.5	1.5	1.4	0.3
Real interest rate[a]						
Germany	5.8	4.7	3.7	2.8	4.1	5.0
EU15	5.7	5.0	5.4	4.5	5.3	5.8
Primary Balance of EU15 in % BIP	0	−0.3	−0.5	−0.8	−0.2	0.7

[a]Long-term bonds according to the Maastricht criterion, deflated with CPI.
[b]Reference country is Germany.
[c]First nine months.
Source: European Monetary Institute (1995), November, and own calculations.

credits because of higher fiscal deficits creates only pecuniary but not technological externalities, and that no adverse efficiency consequences are associated with pecuniary externalities. Furthermore, it is argued that the quantitative effects based on macroeconomic simulation models do not lend a strong case for enhanced fiscal co-ordination among the member states. Except for Germany, no other European country is large enough to cause significant international fiscal spillovers.

These arguments are somewhat misleading. At the *empirical level*, if incentives for a looser fiscal stance are created, they affect all member countries. A fiscal expansion of, say, all south European EU members can easily match a fiscal expansion in Germany. At the *theoretical level*, the argument of only pecuniary externalities is only correct in a first-best world where the shift in public credit demand is created exogenously, say through a change in preferences. In the EMU-context, however, a fiscal expansion is created by a lack of co-ordination and a perceived fall in the price for credits. In a non-co-operative setting of fiscal policy

and a simple two-country macro-framework, it is easy to show that the resulting (Pareto-inefficient) Nash-equilibrium leads to a higher fiscal deficit choice in both countries, resulting from enhanced sharing of interest rate increases due to higher capital mobility in EMU (Frenkel and Klein, 1992). Fiscal restrictions cannot fully replace a Pareto-improving international policy co-ordination but compared to the Nash-equilibrium may lead to a Pareto-superior outcome. At the *political level*, the argument of "only pecuniary externalities" also ignores the distributional consequences of higher interest rates such as the redistribution of income from labour and the owners of other real resources to capital, and from young to old.

Another objection could be that the size of these externalities are exaggerated because it neglects the integration of EU capital markets with the rest of the world. The higher it is, the less will be the interest rate externality. Yet, even full integration does not exclude the exchange rate effects of a sizeable fiscal deficit. In the short run, it is likely to lead to an appreciation of the common currency relative to the rest of the world (Frenkel and Razin, 1993). Given the differences in the scope of trade and product mix of the member states with the non-EMU countries, the exchange rate impact will not be symmetrical.

(ii) The main cause of concern from the interest rate externalities is their impact on the real economy. This topic has already been amply discussed in the literature (e.g. Verbon and Van Winden, 1993). Two recent studies (Ford and Laxton, 1995; Tanzi and Fanizza, 1995) suggest that the rise in the debt level of industrialised countries because of permanently high structural deficits since the late 1970s had important interest rate effects and may have caused an increase in real interest rates by more than 1.5 percentage points. The resulting crowding-out of private investment can only have a negative impact on the long-term economic growth of all countries.

(iii) Finally, excessive deficits signal instability to domestic and international investors. This will primarily hurt the deficit-generating economies, for instance because it deters private sector investment decisions. Recent international cross-sectional evidence of a negative relationship between the growth rate of countries and their fiscal deficit level can be interpreted in this direction (Fischer, 1993). However, this will probably also induce negative spillovers for the rest of the EU. Instead of recognising that too-loose-a-fiscal policy can be a main source of inadequate economic growth, past European experience suggests that some countries may attribute the problems simply to EMU and ask for compensatory payments from the other member states, for example in the form of higher EU Structural Funds payments.

Unsustainable Debt Externalities

Permanently high fiscal deficits ultimately imply a piling up of debt. This can lead a country into an unsustainable fiscal position. With weak possibilities to

rectify this in the short run – the expenditure side is constrained by law-entitled programmes, the revenue side by increased tax competition and the elimination of a national inflation tax –, there is a clear risk of debt default with significant negative externalities.

As the common European currency should lead to more integrated financial markets, a debt default triggering systemic crises in the financial system is more likely than in the past to affect the other countries (Giovannini and Spaventa, 1991). Furthermore, distributional considerations will become more important: the single European currency will make it more attractive for institutional investors and citizens, lured by small interest-rate differentials, to purchase foreign government bonds. Thus in case of default, a large part of the private sector losers will be citizens of other countries. Both the allocational and the distributional aspects imply increased pressure for a bail-out to reduce the costs of the default.

Bail-out can have the form of a fiscal bail-out, i.e. the member states or the EU are taking over part or all of the debt of the defaulting country. In principle, such a bail-out is excluded by the MT, in which Art. 104b clearly states that neither the EU nor individual member states are liable for the obligations of a defaulting country. Once faced with default, however, it is clear that the governments will not stick to the treaty if they judge the costs of treaty conformity higher than of deviation.

The other possibility is a monetary bail-out, i.e. the future European Central Bank (ECB) has to monetise the budget deficits of the countries about to default. In view of the prohibition of direct monetary financing of deficits (Art. 104 of the MT) and the formal independence of an ECB having as a predominant goal to achieve price stability, such a possibility is considered remote by most observers. However, this is no guarantee against (indirect) monetary financing. An independent ECB may still lose the "chicken" game against the fiscal (and political) authorities (Buiter and Kletzer, 1991). In reality, there is no such thing as an "absolute" personal independence of the central bankers forming the Governing Council of the ECB (Klein and Neumann, 1993). In particular, the governors of the national central banks, which have a large majority in this Governing Council, may be subject to immense (indirect) pressure from outside. Thus the larger the number of countries with fiscal problems and the larger the fears of negative spillovers resulting from debt default, the larger will be the pressure on the ECB to pursue a more accommodating monetary policy.

Concerning the default externalities, one may object that rational and risk-averse financial markets may impose efficient risk premia in case a default risk became imminent. Then there should be no externalities resulting from a default: ex ante, investors would receive a risk premium that compensates for the probability of default, and an ex post default should trigger no crisis. We do not share this view for two reasons, the first being theoretical, and the second empirical:

(i) There is clearly a time-consistency problem with the no bail-out provisions of the MT. If financial markets anticipate a bail-out to be optimal in case a default

occurred and financial markets had not imposed efficient risk premia ex ante, the no bail-out provisions are not credible, and this may induce them to set too low (and inefficient) risk premia in their determination of ex ante interest rates in the first place.

(ii) The empirical evidence for states/provinces in various federal states indicates that a risk premium is generally imposed, and that the coefficient related to the debt level is small, but positive and mostly significant (Bayoumi and Eichengreen, 1994, for the USA, Alesina *et al.*, 1993, for some European countries, and Pintal *et al.*, 1995, for Canada). However, the empirical regularity of a positive relation between risk premium and government debt level does not imply that financial markets sanction efficiently. They may sanction to some extent, even progressively (Bayoumi *et al.*, 1995), but whether the premium levied is set at a level to internalise the effects of too-loose-a-fiscal policy is not answered.

Summarising, we conclude that EMU is likely to induce fundamental changes in the economic framework of European countries. From this result incentives for unsound national fiscal policies that have the potential to trigger significant negative externalities for the other member states. We conclude that fiscal safeguards are required to prevent these externalities, and in this we apparently agree with the drafters of the MT. In the next section, we turn to the question of whether the fiscal provisions of the MT are adequate.

III. Can the Fiscal Provisions of Maastricht Prevent Unsound Fiscal Policy in EMU?

The prior section identified potential negative externalities which may result both from excessive fiscal deficits while the stock of debt is still rather low relative to GDP, and from unsustainable debt positions of governments. In order to contain these externalities, the fiscal provisions should have two properties:

- they should be able to discriminate between sound and unsound fiscal policy both with regard to stocks and flows of government liabilities; unsound fiscal policy being defined as one triggering negative externalities.
- there should be effective sanctions once unsound fiscal policy is identified. By effective we mean sanctions that induce a turnaround in fiscal policy.

The MT and the related Excessive Deficit Procedure (EDP) define thresholds for permissible debt and deficit levels and establish procedures for surveillance and sanctions. This section investigates whether these provisions possess the capacity of discrimination, and whether the envisaged sanctions are likely to be effective. Our assessment is negative on both accounts.

1. Discrimination Capacity

The key elements of the fiscal provisions of the MT and EDP in order to assess the sustainability of a government's financial position are two fiscal criteria: on the government deficit and on government debt, and reference values for both which should not be exceeded (3 percent and 60 percent of GDP, respectively). In the report by the Commission for assessing whether an excessive deficit exists, account should also be taken with regard to the trend of the deficit, exceptional developments, the level of the deficit relative to public investment expenditures, and "all other relevant factors, including the medium-term economic and budgetary position of the member state" (Art. 104c(2,3)).

For the measurement of the government deficit, the net-lending/borrowing concept of the European System of Integrated Economic Accounts (ESA) is used, which measures the change in the government net asset position. For the measurement of government debt, a gross concept is applied, defining debt as the sum of liabilities of government classified in the ESA categories currency and deposits, bills and bonds, and other loans. The reference value for the debt ratio was reportedly chosen because it reflected the EU-average at the time the MT was written in 1991; the 3 percent ceiling for the deficit ratio is – at surface, and with a nominal GDP growth rate of 5 percent – compatible with the debt ratio not rising above the 60 percent threshold.

In order to discriminate between sound and unsound fiscal policy, the choice of the fiscal criteria is amazing, both with regard to the numbers and the measurement concept chosen. The arbitrariness of the numbers has already found ample criticism in the literature (e.g. Corsetti and Roubini, 1992; Buiter *et al.*, 1993) and led some economists (e.g. De Grauwe, 1995) to suggest a polit-economic rationale, namely that the criteria were expected to fit the member states considered "worthy" to join EMU at the time of the review of the criteria. As regards the measurement concept, however, such a rationale seems to be largely missing. Our main points of critique are the following:

- the use of a net deficit but a gross debt concept creates severe inconsistencies and distortions;
- the use of the ESA fiscal deficit concept for the surveillance of fiscal operations is fraud with problems of measurement and operationality;
- the criteria are inadequate since they may not be able to prevent the externalities resulting from unsound fiscal policy described in Section II.

Problems with Mixing a Net and with a Gross Concept

In contrast to claims in most papers dealing with the Maastricht fiscal criteria (e.g. Buiter *et al.* 1993, de Grauwe 1994, Gros 1995), the chosen definitions of deficit and debt dislink the deficit from changes in gross debt. For the measurement of the deficit, the EDP determines the balancing item of the capital account (N5 in

ESA definition), which is defined as the difference between gross saving and the sum of government investment, net capital transfers payable by the government, the change in stocks and the net purchase of land and intangible assets by the government. This deficit differs from the balancing item of the financial account (N6 in ESA definition) – the net change in liabilities and financial assets – due to the use of different statistical data, summarised in an adjustment item. The debt definition, however, applies to a sub-set of financial liabilities at nominal value.

To see some implications of mixing a net with a gross concept (at different valuations), one can formulate the increase in gross government debt ΔL_t^n (at nominal value, which is the valuation principle for government debt in ESA) as the government deficit D_t plus a residual R_t.[10]

$$\Delta L_t^n = D_t + R_t \tag{1}$$

with

$$R_t = (\delta L_t(m, n) + gL_t + oL_t) + \Delta A_t^m - oF_t$$

with $\delta L_t(m, n)$ the valuation difference between market and nominal value, gL_t the holding gains or losses of government debt (e.g. changes in government debt determined in foreign currency due to exchange rate changes), oL_t the net increases in other liabilities (such as the taking over of debt from public enterprises, e.g. from the Treuhand agency in Germany), ΔA_t^m the change in net financial assets (such as enterprises shares and credits to the private sector), and oF_t as other financing, most importantly trade credits which are not included in the debt definition.[11] Only if all these (and further items) are zero is the conventional debt-deficit relation – $L_t = L_{t-1} + D_t$ – valid.

Figure 1 provides estimates of the change in the financial debt and its main components, D_t and R_t (all expressed in percent of GDP),[12] for the EU average, while Table III presents estimates for the individual EU countries. The data clearly rejects the conventional claim of $R_t = 0$ (except for the UK which engaged in important privatisation operations during this period), and invites the following observations and conclusions:

(i) For the unweighted average of EU countries, the residual amounts to 1/3 of the change in financial debt. This mainly reflects increases in the asset position of countries, which affect the gross debt level but not the deficit, but also changes in debt revaluation, mainly as a result of devaluation and debt held in foreign currency (visible in countries such as Finland in the early 1990s).

(ii) There is considerable variance between the EU countries with regard to the level of the residual as well as the variance over time. This may be explained by differences between the countries in their acquisition of assets (enterprises shares and financial intermediation), but also by differences in the accounting of transactions.

Table III. The residual in the debt change/fiscal deficit development

|	Average ratios in percent of GDP, 1981–94			Annual Residual ratios in % of GDP									
	Debt change	Deficit	Residual	1981	1983	1985	1987	1989	1990	1991	1992	1993	1994
Austria	5.0	3.1	1.9	2.3	3.1	2.1	1.7	0.4	1.5	1.5	1.0	2.3	1.7
Belgium	10.6	8.5	2.1	4.8	5.4	2.0	3.1	0.5	2.1	-1.1	0.5	2.8	-1.3
Denmark	7.0	2.7	4.2	9.8	6.6	1.4	2.4	2.3	1.3	1.4	3.3	8.5	-3.3
Finland	4.7	2.3	2.4	-2.0	2.5	-1.4	1.7	6.1	4.9	6.3	12.0	8.2	-0.5
France	3.9	2.9	1.0	2.4	0.8	0.8	1.9	1.8	1.3	-0.4	1.0	0.0	-1.2
Germany	3.6	2.3	1.3	1.2	0.9	1.2	0.5	1.1	3.4	1.0	2.7	1.9	1.9
Greece	16.2	12.6	3.6	-0.1	0.8	-0.9	-0.7	-5.6	20.3	6.4	5.7	21.4	-0.1
Ireland	9.8	6.7	3.0	5.9	6.8	0.1	0.3	0.5	1.0	2.4	0.6	7.2	-1.3
Italy	12.6	10.7	1.8	0.2	3.5	2.4	0.6	1.0	0.0	1.2	2.6	4.7	3.6
Luxembourg	0.5	-3.0	3.4	-2.5	3.9	7.3	2.3	6.3	6.8	1.8	2.0	3.3	2.3
Netherlands	5.0	4.8	0.2	0.9	2.2	3.0	-3.1	-0.3	-0.7	1.0	0.1	0.3	-2.6
Portugal	12.3	6.5	5.7	5.5	5.7	13.6	7.1	6.1	9.4	5.0	-2.1	1.5	0.7
Spain	7.0	4.9	2.0	2.0	4.3	2.2	2.1	3.3	1.6	-0.2	1.6	6.1	-0.5
Sweden	6.8	2.9	3.9	6.4	5.3	2.2	1.2	5.5	4.5	10.7	6.1	-4.2	-3.2
United Kingdom	3.3	3.3	0.0	1.1	1.4	0.2	0.9	-2.0	-1.3	-0.7	1.2	1.0	-2.3
EU-Average	7.2	4.8	2.4	2.5	3.5	2.4	1.5	1.8	3.8	2.4	2.6	4.3	-0.4

Sources: European Commission, OECD, own calculations.
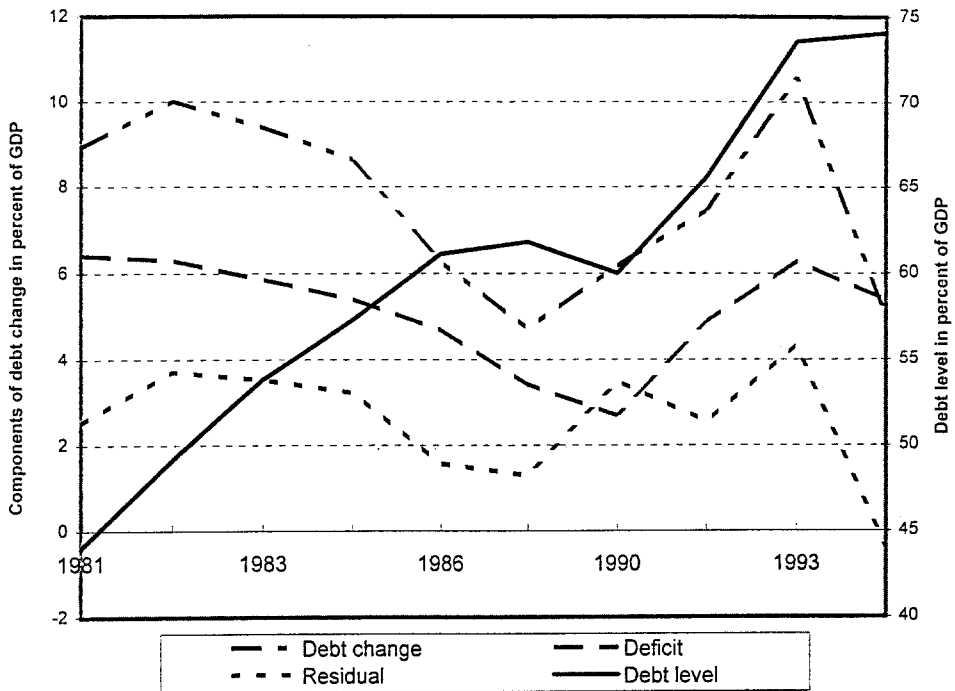
Figure 1. Debt level and components of change in the EU15.

(iii) The sharp drop of the residual in 1994, becoming negative for 10 countries, suggests that sales of assets were widely used as an instrument to decrease the debt level. The deficit decreased much less. However, since the marketable assets of government are finite, the residual will tend to become positive again. The government's role in financial intermediation is likely to increase in EMU, extending credits to the enterprise sector (investment) and households (housing) since the provision of cheap credits via the monetary authorities will be excluded.

(iv) The 3 percent deficit rule will not necessarily stabilise the debt level below or at 60 percent (based on the assumption of a nominal GDP growth of 5 percent). Any future positive residual requires a fall in the deficit below 3 percent of GDP in order to stay below the 60 percent debt ratio, and an even lower deficit ratio to reach the debt threshold when coming from above. At past average proportions of the deficit and residual ratio (2:1), the deficit ratio has to be 2 percent of GDP and below.

(v) The disconnection between net deficit and gross debt introduces incentives for reclassification of fiscal operations (and, more importantly, for fiscally inappropriate transactions) for the sole reason of fulfilling the Maastricht criteria.

If the debt criterion is binding, a member state may reduce its gross financial liabilities through sales of assets, e.g. through privatisation. In case the deficit constraint is binding, a sophisticated option already used in some countries is to reduce the deficit by going into debt in a strong currency, say the Yen, paying a lower interest rate because of expected currency appreciation. The appreciation has little impact on the deficit but results in a higher debt level. If systematically used, the official net deficit may be reduced by 1 percentage point of GDP, and more.

Problems with Measurement and Operationality

The use of the ESA fiscal deficit concept compared to established alternatives for the surveillance of fiscal operations is surprising for several reasons:

- in the ESA concept, the government sector is still an alien which can only be consistently included with various doubtful assumptions and imputations;
- ESA data on the government sector is usually late and open to many revisions;
- the ESA is based on the accrual concept. A cash-oriented concept, allowing a straightforward measurement from two sides – from above and below the line – allows a much better monitoring.

The new System of National Accounts (SNA)-concept of 1993 addresses some of the problems in order to make stocks and flows more consistent, but leaves many issues open with regard to solution and implementation. Yet even if the improvements of the international SNA-guidelines are introduced into ESA in the near future, central issues of fiscal measurement will remain unsatisfactory, inter alia:

Scope of the public sector: Public enterprises are normally excluded and enter the government accounts only with their balances (surplus-/deficit). For example, this has the effect that the Treuhand, the German institution in charge of the privatisation of East German enterprises, could engage in important credit operations which never showed up in the deficit measure. As of January 1, 1995, the bulk of accumulated liabilities of the Treuhand was taken over by the government, increasing its gross financial debt by about 8 percent of GDP.[13] The corresponding flows since 1990 would have added some 2 percent of GDP to the annual fiscal deficit.

Public enterprises such as postal and railroad services are excluded from the government accounts. In some countries, the cash-flow delivered by the (still) public monopoly on telecommunications to the state budget often exceeds the monopoly's profits by a multiple amount, while the enterprise takes credits on the capital market to finance investments. These credits are not accounted for in the measurement of the gross financial debt.

Contingency claims: In all EU countries, export guarantee and credit systems exist, often with a government guarantee. Paying out the guarantee from budgetary resources in the case of non-payment by the foreign importer, however, does not

necessarily increase the SNA deficit since the claim on the payment is taken over by government (and constitutes an increase in assets). Only in the case of debt forgiveness is the claim erased. Then it is normally too late to enter the ESA accounts to increase the deficit.

Financial intermediation: In many countries governments engage in financial intermediation, providing loans to enterprises and households. Since these loans constitute an asset, they are neutral to the ESA deficit. If the loans were given at the opportunity costs of government, the operation would be correct. However, most of these loans carry an interest rate much below the interest paid by the government, and the subsidy part should be included as capital transfers in the government accounts. More importantly, normal capital transfers can easily be disguised as loans (with a maturity of 50 years and a zero interest rate). A similar accounting trick concerns loans taken by public enterprises, with repayment guaranteed by the government. In some EU countries, it is claimed that such credits are used for the restructuring of the enterprise, thus increasing the assets of the government; hence, they can be disregarded when calculating the ESA deficit.

Debt assumption for/by public enterprises: Public enterprises often receive transfers or subsidies to compensate for their "public functions" (such as non-market pricing for social, economic and political reasons). Paid as current expenditure, these payments directly affect the deficit. However, there are many ways to disguise them: guarantee of private sector credits to the enterprise, discretionary taking-over of the debt, increase in equity capital etc.. All these transactions do not show up in the deficit but affect the debt level. However, as regards the latter, solutions can again be found which are on borderline of violating ESA prescriptions. One can imagine a holding company of public enterprises which takes care of all the credit and equity capital operations, and which may even alleviate the government from some of the debt burden; selling public enterprises within the public sector with selling receipts nevertheless showing up as budgetary revenue (or reduction in public debt) is not unheard of.

These and further problems in the measurement of the fiscal deficit and public debt are under discussion and, hopefully, a solution will be found by the expert group of EUROSTAT. However, it is likely that many of the operational problems have not yet been discovered. The alternative, to take a well-established system of fiscal surveillance, such as the Government Finance Statistics (GFS-approach; IMF 1987) used by the IMF for its programme preparation and implementation, was disregarded.

Problems with Containing the Negative Externalities

The prior weaknesses could be considered as minor problems that can easily be corrected or lived with. Yet the fiscal criteria of the MT may still be judged as fundamentally flawed because they may not contain the potential externalities discussed in Section II.

Excessive deficit-related externalities: The main negative externality which may result from excessive deficits is a rise in interest rates for the other member states. Such an effect would be brought about by the increase in government debt, i.e. the additional total credit demand by the government, or the "gross" deficit. Yet, the MT puts a ceiling on the "net" deficit. Thus government asset purchases financed by emitting new debt instruments may create interest-rate externalities while leaving the net deficit unchanged. As Table III exhibits, the "gross" deficit is much larger than the "net" deficit for most European countries.[14] Furthermore, an annual view of the government deficit clearly provides no evidence for an unsound fiscal policy. It is widely agreed that even deficit values above 3 percent can signal a sound fiscal policy, if the current deficit is pushed momentarily upward because of high nominal interest rates or business cycle fluctuations.[15] Interest rate externalities are likely to become really important only in the case of permanently high periodical deficits which are caused by structural deficits. Since the structural deficit is suggested to be a good indicator for both short-term effects and the long-term sustainability of the fiscal position, it would have been an appropriate deficit concept for identifying unsound fiscal policy.

Unsustainable debt-related externalities: Any measure of the sustainability of government operations should reflect the intertemporal budget constraint for the general government. The empirical practicability of this concept may be contested since the determination of the present value of future revenues and expenditures is difficult and requires more assumptions than are usually made.[16] Nevertheless, to base an assessment of sustainability only on a concept of (partial) gross financial debt, thus excluding altogether all government assets, independently of how easily they can be sold, and neglecting all contingency claims, independently of how important they are, is disconcerting. Such an approach impedes the discrimination between sound and unsound fiscal policy and distorts a comparison between countries.

Government assets differ considerably between European economies, also because of different attitudes concerning nationalisation. Disregarding these assets in the stock criterion may create incentives to sell them since it allows for a reduction in gross financial debt. But these sales may (have to) take place at an inappropriate time, reducing the net wealth position of government (e.g. the privatisation revenues are lower than the market value of the firm). Disregarding contingency liabilities such as those resulting from public credit insurance and, more importantly, social security systems creates an even stronger obstacle for proper discrimination between sound and unsound fiscal policies. Table IV illustrates the difference in public debt when aggregating gross financial debt and two alternative measures for total net (accrued) liabilities of the social insurance schemes.[17]

The estimates indicate the importance of non-financial debt in each country (if only the most important one), the great variation between them, and the relatively small scope of financial debt. Whether financial and non-financial debt should be aggregated into one debt mea,ure is open for discussion since the reaction of

Table IV. Global public debt in 1990 (in percent of GDP)

	Germany	France	Italy[d]	UK
Gross financial debt	44	35	98	35
Social security liability I[a,b]	157	216	259	139
Total I	**201**	**251**	**357**	**174**
Gross financial debt	44	35	98	35
Social security liability II[a,c]	125	171	213	109
Total II	**169**	**206**	**311**	**145**

[a] Accrued-to-date liabilities, i.e. the present value of pensions to be paid in the future on the basis of accrued rights; real earnings are assumed to grow by 2 percent p.a. and the pension benefits are price-indexed.
[b] Discounted at 4 percent from 1990 to 2010, with the rate declining to 3 percent in 2050.
[c] Discounted at 5.5 percent from 1990 to 2010, with the rate declining to 4.5 percent in 2050.
[d] Liability estimates prior to the 1992 pension reform.
Sources: Van den Noord and Herd (1994); and EUROSTAT.

financial markets may differ.[18] Yet, ignoring it altogether is dubious since this implicitly assumes that non-financial debt can be fully repudiated and that the scope and trend of that debt has no bearing on the repayment of financial debt. The conjecture that social security debt can be more easily repudiated may be contested in view of the resistance to reform the pension system in Europe as well as elsewhere.

In summary, the discriminatory power of the fiscal criteria of the MT must be considered low, both at the conceptual and operational levels. Yet the argument may be made that the thresholds selected are well below the ones presenting an unsound fiscal policy and hence limit the effects of number fudging and conceptual and operational indeterminacy. In the absence of agreement on how to measure a structural deficit and an intertemporal fiscal stance, they may be viewed as a good second-best solution. A strict ceiling on the net deficit will implicitly enforce a lower structural deficit if the government wants to keep some leeway for automatic stabilisers, and a strict ceiling on the gross debt will force governments, when contingent claims materialise in the future, to increase taxes, reduce other expenditures or repudiate the claims. The actual provisions are also compatible with the subsidiarity principle: if a government wants to be more popular in good times (i.e. by having high structural deficits in boom times), it must be prepared to be more unpopular in other times (i.e. no further extension of the deficit is possible). However, there is clearly a time inconsistency problem since the government has incentives not to play by the rules in bad times. It follows that the Maastricht criteria can only be seen as a second-best solution in case there are effective sanctions that

oblige every member state to play by the rules also in bad times. Otherwise the Maastricht criteria will be of no value.

2. EFFECTIVE SANCTIONS

In the MT, two kinds of sanctions can, in principle, be differentiated: the forceful one, which is to deny entry to EMU to those countries not fulfilling the convergence criteria, and rather soft and unspecified ones against EMU members.

Once one is a member of EMU, the MT is rather vague about sanctions against countries pursuing unsustainable fiscal policies (Art. 104c). Periodic surveillance of economic and fiscal policies is envisaged and, in principle, already done by the European Commission since 1990. However, the surveillance does not imply programme review or anything like Art. IV consultations by the IMF. The strongest sanctions for undisciplined fiscal behaviour set out in the MT is little more than making the findings public and, at best, reviewing the access of member states to the European Investment Bank, demanding the unremunerated deposit of an "appropriate" amount with the EU, and raising penalties of "appropriate" size. Furthermore, the Council decision on these sanctions requires a qualified majority, which may not be achieved if a major member state (say Italy) plus a few minor member states (say Greece, Portugal and Spain) fail to agree. Explicitly excluded in the MT (Art. 104c, Point 10) is the right of the European Commission to initiate procedures because of violation of the MT (according to Art. 169 and 170).

For a government pursuing unsustainable fiscal policies for domestic reasons, these sanctions by themselves are rather toothless and are not likely to induce a policy change. What could be intended by stigmatising a country's fiscal position is to trigger stronger financial market sanctions. Increasing the information set of the private sector by pointing the finger at a country may lead to a higher (expected) default risk and thus to higher risk premia. Yet the question is how much the signalling of an unsound fiscal position will modify financial market perceptions of default risk since the information about the fiscal status of the member states is publicly available.

The effectiveness of the sanctions is likely to be further weakened by the long delay between the violation of the rules and the imposition of the sanctions and the issue of number fudging described above. It will be difficult to justify sanctioning an honest country with a deficit ratio of, say, 4 percent, while countries with the same fiscal stance manage to bring down their deficit ratio below the 3 percent threshold by some accounting wizardry.

Against the background of toothless sanctions once one is a member of EMU, it would have been crucial to impose the fiscal convergence criteria as a strict entry condition. Excluding every member state from participation in EMU that does not fulfil both criteria would be a very strong sanction – the member state would not obtain the political and economic benefits of being an EMU-member – and thus a strong incentive for a turnaround in fiscal policy. Though fiscal consolidation

before EMU is no guarantee for sound fiscal policies in EMU, remembering the costs of a major fiscal turnaround may induce the member state not to repeat past mistakes.

As suggested above, however, such a strict application is difficult to justify on economic grounds as the reference values of 3 percent and 60 percent provide little indication on the sustainability of the fiscal position. Also, it is difficult to imagine that countries like Belgium or Italy would have agreed to a strict 60 percent debt ratio-threshold in Maastricht. Indeed, the MT (Art. 104c(2)) does not envisage a strict application of both criteria and leaves the door open for political interpretation (with the underlined words signalling the freedom of interpretation):

- With regard to the debt criterion, a debt ratio above 60 percent of GDP may not be interpreted as unsustainable if the European Commission judges that "the ratio is *sufficiently* diminishing and approaches the reference value at a *satisfactory* pace".
- With regard to the deficit criterion, a deficit ratio above 3 percent may not be excessive if the Commission thinks that "the ratio has declined *substantially* and *continuously* and reached a level that comes *close* to the reference value" or "the excess over the reference value is only *exceptional* and *temporary* and the ratio remains *close* to the reference value".
- Furthermore, the judgement of the Commission is not binding for the European Council which takes a pure political decision with a qualified majority whether a country has achieved a "sustainable government financial position".[19]

These loopholes considerably weaken the effectiveness of the convergence criteria as entry conditions since they render the threat to be denied entry into EMU less probable. This can already be seen by the convergence plans of most member states with fiscal problems: their fiscal adjustment programmes clearly concentrate on bringing down their deficit ratio to 3 percent by 1997, the year on which the fiscal performance and the decision on what countries will constitute the EMU core will be based. That these fiscal adjustment plans lead only to a modest decline of the debt ratio seems of little concern. The obvious explanation is that a large majority of EU countries, including some deemed essential for any EMU core (e.g. Belgium and the Netherlands), now have a debt ratio well above the reference value of the MT. The expectation that the "more important countries" will be let in independently from their debt ratio naturally weakens consolidation efforts also in the other countries in the reasonable expectation that an "equally bad" fiscal position cannot lead to unequal treatment concerning EMU entry.[20] That the ECOFIN meeting in October 1995 agreed on a strict application of the 3 percent rule as entry condition under what ever circumstances could already be welcomed as a hardening stance relative to the MT statements. However, one can reasonably argue that such an agreement will have no value if essential countries like France, Germany and the Netherlands do not manage to bring down their deficit ratio in time and nevertheless want EMU to start.

Summarising, the MT does not provide sanctions that contain countries' incentives to pursue unsound fiscal policies in EMU. There is thus reason to be concerned about the future stability of EMU. From this follows the need for politicians to review the issue at the 1996 intergovernmental conference and for economists to elaborate sound alternatives. The next section presents our own proposals.

IV. Proposals of supplementary criteria and specified sanctions

In view of the conjectured need for fiscal restrictions in EMU but the inadequacy of the current rules, the issue of alternative and better measures emerges. With rising recognition of a general need for better procedures and criteria in academic and policy circles, various proposals have been made in recent months, all concentrating on alternative sanctions. This section proposes both supplementary criteria and specifications of sanctions against the background of two convictions:

(i) Any feasible alternative has to be covered by the MT, i.e. it must not require a renegotiation of the treaty and subsequent ratification by the national parliaments (or even a general referendum). Given the mood against "Maastricht" and the fiscal adjustment costs it entails in the view of the public, a formal tightening is not likely to find support in all member countries of the EU. However, the treaty and the EDP provide some leeway through extensive interpretation of Art. 104c (3), second paragraph, which states that "the Commission may also prepare a report if, notwithstanding the fulfilment of the requirements under the criteria, it is of the opinion that there is a risk of an excessive deficit in a Member State". This wording should allow the use of supplementary fiscal criteria in order to ensure sound fiscal behaviour. In the same vein, Art. 104c (11) which details the potential sanctions to be decided by the Council should allow a specification of "appropriate fines" in a secondary legislation.

(ii) The application of sanctions must be semi-automatic, i.e. they have to be applied without further decision by the Council if the reference values of the criteria are not met, unless the Council decides (with qualified majority) otherwise. Such a procedure reverses the burden of proof and forces the concerned country to provide the necessary information that the imposition of sanctions is unjustified. Such a reversal in the decision procedure is motivated by the fact that so far the Council has never taken severe measures against a member country, and there is little reason to believe it will do so in the future. Admittedly, the proposal does not exclude that such a qualified majority is also formed in unsubstantiated cases if the number of countries with fiscal problems is high, or if logrolling with other items for decision in the Council takes place. This has to be weighted against an automatic application of the rule which may lead to an inferior result because there may really be exceptional circumstances where a high periodical deficit is justified.

1. Supplementary Fiscal Criteria

The prior sections forcefully argued that both debt and deficit criteria are required to contain potential negative externalities, but that in both cases the currently defined ones are insufficient or even inadequate. In addition, the debt ratio enters into the EDP only in a very loose way since it is assumed that respecting the deficit criteria of 3 percent leads also towards a decline of the debt level towards the reference value of 60 percent of GDP (when coming from above).

We propose to include two further fiscal criteria which the Commission should take into consideration when presenting its reports:

(i) A *criterion on the non-financial government debt* resulting from contingency liabilities with regard to unfunded public pension schemes, long-term care programmes, export credits or credits by public enterprises has primarily the objective to inform financial markets and the general public about the scope of commitments by the government. It can safely be assumed that both are largely unaware of their scope and trend which will accentuate with the ageing of the population. Consequently, the mere provision of information may change risk assessment and pressures for reform. The pressure may be enhanced if a mandatory risk-rating of the government financial debt by independent international risk-rate agencies were introduced. In a second round, and after the estimation techniques have been refined and the estimates been put on a fully comparable basis between the countries, one could imagine going further and defining reference paths for the global public debt.[21]

(ii) A *criterion on the structural government balance* should allow for a better assessment of short-term fiscal disequilibria, signalling the early need for compensating fiscal measures on the expenditure or revenue side to avoid long-term unsustainability, and thus containing uncertainties for the private sector. It is true that there is no unique indicator which allows one to capture all facets of the structural imbalance, and the range of assumptions to distinguish between the cyclical and structural component of the actual deficit is wide. However, the calculation of the actual fiscal deficit is also based on multiple assumptions which are barely transparent to many economists, and may also result in important differences between countries (discussed above). Consequently, the estimation of a structural fiscal deficit based on agreed assumptions and, perhaps, cross-checked against alternative measures would allow for a better assessment of the relevant fiscal stance.[22] These methods have been applied for some time by the OECD and the IMF and presented in their periodic country reports and their bi-annual economic outlook. The Commission also underscores its convergence assessment with trend in structural fiscal balances (European Commission, 1995, p.17–19) . Moreover, there is substantial progress in the development of a structural budget balance in line with modern macroeconomics and estimation techniques (Giorno *et al.*, 1995).

2. SPECIFIED SANCTIONS

There are already various proposals for self-binding mechanisms or stricter, more specified sanctions once EMU is established. They range from inclusion of the Maastricht reference values in the national constitutions (CDU, in FAZ of October 10, 1995), the establishment of independent National Debt Boards which determine the annual debt change limit in each country (Eichengreen and von Hagen, 1995), the setting of permissible and cycle-adjusted deficits, triggering automatic sanctions through cuts in EU transfers (Neumann, 1995), the imposition by the Council of tax increases/expenditure cuts for member states disrespecting the fiscal rules, leading ultimately to the quasi-exclusion of the member state if the corrective actions are not taken (Gros, 1995), the levying of a fine of $\frac{1}{4}$ percent of GDP for each percentage point that the deficit criterion is not respected (Theo Waigel, the German Minister of Finance), to the exclusion of central bank governors from the monetary decision process if their respective country is not in compliance with the strict rules (de Grauwe, FT of October 17, 1995).

We go beyond these proposals, of which some are complements rather then substitutes to our approach, and propose sanctions that have the following main characteristics:

- automatic triggering of sanctions once the established thresholds are exceeded with the possibility of reversal in exceptional cases;
- externality related sanctions since they deal separately with deviations from debt and deficit criteria;
- market-based sanctions since they include elements of market assessment of fiscal excess;
- the sanctions in the forms of fines accrue to the ECB which distributes the receipts according to the same key to the member states as for its monetary income; this constitutes a compensation for the incurred negative externalities.

Deficit-related sanctions

Similar to Neumann (1995), we propose a strict ceiling on the accumulated structural deficit. This limit is determined by the Maastricht criterion of 3 percent reduced by the stock-flow residual in percent of GDP highlighted in Section III. To deter from permanently crossing this threshold, we propose for every year t the following excessive deficit-related fine F_t^D:

$$F_t^D = \pi/3 \max \left[\sum_{\tau=t-3}^{t-1} (s_\tau - s_\tau^*); 0 \right] Y_{t-1}, \qquad (2)$$

with

$$\pi = (0, 1]$$

and

$$s_t^* = 0.03 - R_t/Y_t = 0.03 - [(L_t/Y_t - L_{t-1}/Y_t) - D_t/Y_t] \tag{3}$$

Y_{t-1} is the previous year's GDP as the base for the fine; s is the actual structural deficit in percent of GDP; s^* is the ceiling for the periodical structural deficit and takes the 3 percent reference value adjusted by the residual R (as used in equation (1)) relative to GDP. Depending on the residual, it can vary from period to period. A positive difference $s - s^*$ is defined as an excessive deficit (ratio). π is a politically-determined sanctioning parameter. Sanctioning in any period will only occur if the structural deficits accumulated over the three preceding periods are excessive, and the fine will be proportional to the accumulated excessive deficits. Setting π equal to one would imply a fine that is exactly as high (in terms of GDP) as the preceding average violation.

The fine would be deposited at the ECB. Furthermore, we suggest making the fine conditional. If, in the three years from t on, the country fully offsets its previous excessive deficits, i.e. if

$$\sum_{\tau=t}^{t+2}(s_\tau^* - s_\tau) \geq \sum_{\tau=t-3}^{t-1}(s_\tau - s_\tau^*),$$

then she will get her money back (with interest) at the beginning of the year $t + 3$. Otherwise the fine becomes final and is distributed to all member states according to the key for distributing monetary income of the ECB.

The motivation for this deficit-related sanction and structure is as follows:

(i) The sanction directly helps to contain or at least to compensate for excessive deficit-related externalities. As actual structural deficits in the EU are more or less at 3 percent or above, our ceiling seems sufficient to contain incentives for more excessive deficits created by EMU. The proposed procedure fully allows the working of the automatic stabilisers while it forces governments to reverse discretionary budgetary expansion, expressed in the structural budget balance. The required reversal after three years to avoid the sanctioning becoming final should cover most cyclical developments. In the case of very severe and/or durable recessions, the semi-automatic feature allows for some ex post discretionary corrections.

(ii) The reference value for the structural budget deficit is consistent with the debt limit of the Maastricht treaty, but a more disciplined fiscal behaviour is neither impeded nor encouraged.[23] The reference value takes account of the residual in the debt change/net deficit relationship. With this approach, mis-classification of fiscal transactions is discouraged and the role of government in financial intermediation becomes subject to the rules of sustainability and cyclical well-behaviour.

(iii) In case where excessive deficits occur for pure stabilisation reasons, the conditional fine is levied after the cyclical down-turn has occurred and hence raised during the up-swing. This eliminates liquidity problems for paying the conditional fine and is not counter-productive in terms of economic stabilisation. Furthermore, the sanctioning takes place with regard to the non-compliance to the rules of cyclical discretionary budgeting. There are no ex-ante rules and prescriptions on the optimal fiscal deficit during a recession; this is left to the discretion of the member country. Thus the fiscal sovereignty of a country is not dramatically infringed upon.

A numerical example for the application of the deficit-related fine could be as follows: The reference values for the structural deficit ceiling s* in Austria for the period 1991–1993 are 1.5, 2.0 and 0.7 percent since the residual in percent of GDP amounts to 1.5, 1.0 and 2.3 percent, respectively (see Table III). Given the actual structural deficit ratio during this period of 2.8, 2.1 and 3.0 percent (Giorno *et al.*, 1995, Table 6), respectively, this constitutes an accumulated excessive structural deficit of 3.7 percent of GDP. Applying a fine parameter of, say, 60 percent ($\pi = 0.6$) would amount to a conditional fine of 0.74 percent of the 1993 GDP to be deposited in 1993. This would probably become final since, at least for 1994–95, the structural deficit position has not yet been reversed.

Debt-Related Sanctions

To contain the potential excessive debt externality, a fine is automatically imposed on the excess of the actual ratio of financial debt over the reference value of 60 percent. The fine, however, is only triggered if the market risk premium on government debt (of defined structure or basket) exceeds a reference value. The risk premium can be defined as the country's interest rate on these bonds compared to the lowest interest rate country of EMU. The debt-related fine F_i^L for country i in year t is calculated as a multiple of the risk premium differential times the excess debt ratio times GDP:

$$F_{i,t}^L = \lambda \Delta \rho_{i,t-1}(L_{i,t-1}/Y_{i,t-1} - 0.6)Y_{i,t-1} \qquad 0 < \lambda < \lambda_{\max} \qquad (4)$$

with

$$\Delta \rho_{i,t-1} = \max[(r_{i,t-1} - \min r_{j,t-1}) - \rho_{\max}; 0] \qquad i, j = 1, \ldots, 15 \qquad (5)$$

λ is a politically-determined multiplier,[24] $\Delta \rho_i$ the country's risk premium differential, L_i/Y_i the actual debt ratio, r_i the interest rate on standardised government debt instruments, and $\rho_{\max}$ a risk premium reference value.[25] The motivation for this debt-related sanction and structure is as follows:

(i) As motivated in Section II, highly indebted countries joining EMU are likely to experience a fall in their risk premium. This benefit of club membership partly

results from externalising default consequences to other EMU members. It may be considered fair that an excessive use of club amenities to the detriment of other club members is somewhat compensated.

(ii) The remaining risk premium for the individual country in a common currency area is set by financial markets, taking account of the financial debt level but also of other indicators for the sustainability of a country's fiscal operations (such as the published non-financial debt, the revenue-raising capacity, or even budgetary procedures). The studies reported in Section II indicate that the levying of risk premia within federations is statistically significantly related to the debt level and other characteristics, such as self-imposed debt ceilings. In 41 recorded federal states of the US, the risk premium spread in 1989 amounts to almost 85 basis points (BP) (Bayoumi *et al.*, 1995, for the USA). This compares with a crudely estimated total risk premium spread in the EU in the 1990s of up to 500 BP (see Table II).

A numerical example for the application of the debt-related fine could be as follows: with an estimate of the likely maximum spread of, say 150 BP, let us assume that 50 BP difference are tolerated ($\rho_{max} = 0.5$), yielding a maximum risk premium differential of 100 BP. Pitching the parameter λ initially at 1, a country like Belgium would pay a maximum fine of 0.65 percent of GDP on the debt excess ratio of 65 percent of GDP (assuming a debt ratio of 125 percent of GDP when Belgium were to enter EMU in 1999 and an interest rate spread of 150 BP). This compares with potential savings on the total interest service of some 2.8 percent of GDP (applying the risk premium spread of 1995; see Table II).

(iii) The approach is fully incentive and market oriented. It introduces a quid-pro-quo relation between member states of EMU. The fine increases the price of excessive debt and thus introduces direct incentives for its further reduction. Countries are encouraged to pursue an overall sound fiscal policy and to introduce credible self-binding mechanisms since it will contribute to reducing the risk premium spread (such as national debt ceilings or National Debt Boards).

(iv) The sanction mechanism can be applied with the shortest possible time-lag. With an appropriate reporting scheme, final data on financial debt and interest rates are available a few weeks after the beginning of each year.[26] Hence, the fee can be levied on a monthly basis by end-January of the following year. Minor deviation from revision matters little since this can be compensated in the ensuing months. Under the current and alternative proposals for sanctions, the inception of a fine could take up to 2 or 3 years. This provides little incentive for an immediate correction of an unsustainable fiscal position.

V. Concluding Remarks

The Maastricht treaty and the creation of a common currency is a crucial step in the process of European economic and political integration. If successful, it

should strongly contribute to a repositioning of the EU in the world economy since the static and dynamic, economic and political, domestic and foreign benefits are potentially very high. The success, however, will closely depend on the internal and external stability of the new "Euro"-currency. In order to guarantee a sound monetary policy, the treaty puts a lot of emphasis on the monetary and exchange rate provisions of the future European Economic and Monetary Union, laying out what could be called a "monetary constitution". Yet on a "fiscal constitution", necessary for the success of EMU, the treaty remains mute or very vague.

Neglecting fiscal issues in Maastricht quite likely has a political and informational background. At the political level, the treaty may not have passed if specific rules on stronger fiscal surveillance and sanctions, enhanced streamlining of expenditure and revenue programmes, fiscal coordination, or even fiscal federalism had been included. At the informational level, those drafting the Maastricht treaty may have underestimated the complexity of fiscal issues, if only the definition and measurement of an adequate fiscal stance. However, without some revision of the current fiscal rules the success of EMU is not assured. Applying the fiscal criteria strictly would reduce the number of participants drastically; while this could (but not necessarily would) protect the member states against unsound fiscal and economic policy behaviour, the economic advantages of a common currency would be small. In turn, a soft interpretation of the fiscal criteria and thus a higher number of participants would increase the economic benefits from a single currency, but fiscal misbehaviour – which the treaty provisions cannot contain – could endanger the stability of EMU. Experience throughout the world clearly demonstrates that monetary instability is invariably the result of fiscal imbalances. For this reason, we propose that the EU-countries at the Intergovernmental Conference of 1996 use the leeway given in the Maastricht treaty to supplement it through secondary legislation.

The new regulations should have the following important characteristics: sanctions in the form of fines should be semi-automatic and directly related to what triggers the negative externalities in EMU, namely too high structural deficits and unsustainable debt levels. The fines should be market-based and incentive-oriented. The debt-related fine should be final and directly correlated to the risk premium requested by financial markets. This premium should be a good indicator of the sustainability of the government debt position (especially if the no bail-out provisions of the treaty are at least to some degree credible). The deficit-related fine should be restituted if the country reverses its temporary fiscal excess quickly.

Clearly, our proposals are rules only for EMU membership. But as they are likely to contain the incentives for unsound fiscal policy in EMU, their application makes the Maastricht fiscal convergence criteria as entry conditions in principle redundant. In this case, we would be in favour of a rather soft interpretation of the Maastricht fiscal convergence criteria as allowed for by the treaty, especially concerning the debt ratio of 60 percent. As regards the fiscal deficit, the Review Council in 1997/98 will have to walk a fine line between fiscal stringency and fiscal

laxity. There are still good arguments for a strict application of the 3 percent deficit rule as an entry criterion, both to reassure an anxious public in those countries with a more stable fiscal stance and to prevent the (politically unpopular) situation that a country's first experience in EMU is to pay stiff fines because of a very high structural deficit.

We close our paper by stressing the fact that an application of our proposals implies a win-win situation for all countries of the EU. The more solid countries afraid of negative externalities from their partner countries could be reassured that adequate sanctions against fiscal misbehaviour would be taken. The other countries, while in principle accepting tougher sanctions that threaten them most, would be more than compensated by the positive externality of reaping the fruits of real interest rate reductions through a rapid EMU entry, giving governments financial breathing in their consolidation efforts, and reducing the fear of fiscal overkill. Finally, and under the assumption that the monetary convergence criteria are fulfilled, most EU countries could start with EMU at the same time, leading to the biggest possible gains from a single currency and preventing an economic and political division of western Europe.

Notes

1. In the MT, the drafters have seemingly neglected the insights from the "optimum currency area" literature which suggests that the success of monetary union crucially depends on price and wage flexibility, factor mobility, and a system of fiscal federalism (e.g. see Bayoumi, 1994).
2. For an informative survey of the arguments by the member states during the negotiations of the MT, see Bini-Smaghi et al. (1994).
3. Clearly, Germany may also pay a risk premium, as suggested by Table II.
4. After 1945, the British debt rose to 300 percent of GDP without any problems (The Economist, May 1995).
5. The hypothesis of imperfect international capital movements goes back to Feldstein and Horioka (1980) and is based on cross-sectional correlation between savings and investment across OECD countries. Their empirical results can be contrasted with regional British data on savings and investment which are shown to be uncorrelated, consistent with the hypothesis of perfectly mobile intra-national capital flows (Bayoumi and Rose, 1993). The latter may be linked to the common currency and low transaction costs.
6. Estimations of the trade flows between the EU and the reform countries indicate that by 1994, the latter have reduced the gap between potential and actual exports to the EU to some 50 to 60 percent (starting with a trade gap of some 80 to 90 percent in 1988; the percentages differ somewhat between the regions of origin and destination of the trade flows). This highlights the scope of further competitive pressure on ailing and declining industries in the EU (Holzmann and Zukowska-Gagelmann, 1996).
7. Not only will there be a loss of national monetary policy as a fiscal instrument; for some EU-countries, EMU as such will lead to considerable losses in seigniorage revenues (Gros and Vandille, 1995).

8. Solvency is typically linked to the government's intertemporal budget constraint. Measured in percent of GDP, the necessary condition for solvency is that the growth rate of the debt ratio may not be larger than the difference between real interest rate and real growth rate. In principle, solvency can thus be compatible with unbounded debt growth. Such a definition, however, is of little operational use since it assumes that the government has access to lump sum taxes which, without distortions and enforcement costs, enables to appropriate any amount of resources less than or equal to total GDP. Once the distortionary effects of taxation, the enforcement costs and the redistributive effects of public debt and its servicing are taken into account, we move to a positive theory of debt, with no objective criteria about when the exact debt level becomes unsustainable.

9. A particular example is the German state of Saarland which since the 1960s faces permanent demand shocks in its traditional tradable goods - coal and steel. Progress in structural adjustment is low, despite or, more likely, because of external subsidies amounting to some 15 percent of its GDP at world market prices in 1992 (Holzmann *et al.*, 1995).

10. This disaggregation does not include all the items, but only the most important ones. For a full disaggegration and the links between debt and deficit of ESA, see Bier (1994).

11. One derives equation (1) through consolidation of the extended financial account and the changes in government debt account. From the extended financial account the deficit (N5) is derived as follows:

$$D_t = \Delta L_t^m + oF_t - \Delta A_t^m \tag{1a}$$

with m signalling the evaluation of liability and asset changes at market value. ΔLmt provides the link to the changes in the debt account:

$$\Delta L_t^m = \Delta L_t^n - (\delta L_t(m, n) + gL_t + oL_t). \tag{1b}$$

12. Data of gross debt and net deficit on a comparable basis for the EU15 are available only for the years 1990–1994. For the prior years, data on debt is much less comparable and reliable for various countries, and OECD gross debt data is sometimes used. However, since changes in the debt level enter into the calculation of the residual, moderate differences in the debt definition matter little.

13. The official debt figure of Treuhand as of end-1994 is DM 205 billion. However, it is expected that the total liabilities of the privatisation process will increase to DM 256 billion, including the operations of the Treuhand successor company BVS. In contrast, Germany's GDP is about DM 3.2 trillion.

14. Putting a ceiling on the "gross" deficit instead would not be ideal either since unsustainable expenditure-revenue gaps could be disguised for some time through the selling of government assets while leaving the stock of debt unchanged.

15. We acknowledge that the EDP allows for some discretion in this respect. However, in our opinion the wording gives place for too much freedom of interpretation.

16. However, New Zealand started to implement the concept of a full government balance sheet, which takes account of the long-term consequence of current policies, and in the USA generational accounting, which estimates the revenue-expenditure position of cohorts, is already part and parcel of budgetary presentation.

17. In a few European countries, notably the Netherlands, accumulated assets partly compensate for the accrued gross liabilities of their public pension schemes.

18. It is sometimes claimed that financial debt and social security debt have different characteristics and should thus not be lumped into one overall debt measure (Franco, 1995). While differences undoubtedly exist, both have to be repaid by future government revenues unless (partial) debt repudiation takes place.

19. In fact, the situation has become even more complicated by a ruling of the German Constitutional Court at the end of 1993, stating that the German Parliament has a final word in the application of the Maastricht criteria and thus that Germany is not bound by a majority vote of the Council if it judges that the convergence criteria have been interpreted too softly. As EMU is unimaginable without Germany in reality – another scenario (De Grauwe, 1995) is just an interesting academic exercise – this implies a de facto German veto possibility.

20. We model this reasoning in another paper (Demmel *et al.*, 1995). However, one has to remind that an unequal treatment can result from a different degree of fulfilment of the other convergence

criteria. Greece for example might thus reasonably expect to have no chance of joining EMU in the next years, reducing the efforts for fiscal consolidation.

21. Currently, there exists no agreed procedures to calculate contingency claims similar to the System of National Accounts and the conceptual problems are challenging (Towe, 1991). As regards the estimation of the social security debt, a more elaborate tool-box is available, but the data requirement is high and the range of alternative assumptions large (for example, see Van den Noord and Herd, 1994, Franco, 1995).

22. This does not ignore the well-known arguments against fiscal deficit measurement and its interpretation. However, given the knowledge of their weaknesses, they can be used quite usefully for operational purposes. For a review of the strengths and weaknesses of these concepts, and further references, see Blejer and Cheasty (1993).

23. Some proposals for sound fiscal behaviour in EMU suggest a limit on the structural deficit of 1 or even zero percent. If the residual R were zero and the cyclical component had zero mean this would imply a long-term debt ratio of 20 percent and 0 percent, respectively (assuming a nominal GDP growth of 5 percent). There is no economic justification for these proposals and, given the actual numbers, the only rationale for these demands may be the intention to dismiss the whole EMU-project. If R is not zero and not controlled for, on the other hand, any long-term debt ratio would be consistent with any limit on the structural deficit.

24. With a qualified majority, the Council could decide to increase λ for countries which continue to accumulate government debt and thus do not react to the rise in the effective interest rate (market interest rate plus fine) on their debt.

25. The reference value ρ_{max} should take account of differences in market assessment not necessarily linked to the soundness of government finances. For instance, the scope of the risk premium may be linked to the credibility of the no-bail-out clause which may differ for the member countries. Setting a threshold (which can be zero) cushions such effects, but admittedly an objective value is difficult to determine.

26. For this very reason, the IMF programmes base their data-determined conditionality on financial data, measuring, inter alia, the fiscal deficit mostly from the financing side.

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