

Should Europe Get Rid of the Stability and Growth Pact?

by

Thierry Warin

September 2004

MIDDLEBURY COLLEGE ECONOMICS DISCUSSION PAPER NO. 04-15



DEPARTMENT OF ECONOMICS
MIDDLEBURY COLLEGE
MIDDLEBURY, VERMONT 05753

<http://www.middlebury.edu/~econ>

Should Europe Get Rid of the Stability and Growth Pact?

Thierry Warin

Department of Economics

Middlebury College, Vermont, 05753, USA

Phone (802) 443 3475

Fax: (802) 443 2050

Email: twarin@middlebury.edu

Classification: E61, E62, E63, F02, F42.

Should Europe Get Rid of the Stability and Growth Pact?¹

Abstract

The paper addresses the question of the abolition of the Stability and Growth Pact. More and more authors and policymakers are arising the negative impacts of the European deficit rule on the countries and their ability to respond an asymmetric economic shock. Some others are asking for a redefinition of the Pact. If the focus is only fiscal and in light of the non-respect of the Pact by two of the biggest countries in Europe since its implementation, it could be demonstrated that the SGP needs at least a reexamination. To the converse, if we introduce into the analysis its impacts on the European structural policies, things are different and getting rid of the SGP could hinder the still up-to-date convergence prospective. Indeed, this paper proposed a theoretical analysis of the SGP that emphasizes a new feature of the SGP: a strong incentive to structural reforms.

Classification: E61, E62, E63, F02, F42.

¹ The author would like to thank the participants of the International Atlantic Economic Conference in Quebec City (10/16/2003-10/19/2003) for their helpful comments. The usual caveat applies.

1. Introduction

After Portugal in 2001, Germany and France have been put under the red lights of the European Commission. With a deficit of 3.5% in 2002 and one of 3.8% in 2003, Germany did not respect the Stability and Growth Pact (SGP) for the second year running. France owned up to a projected deficit of 4% in 2003, to follow a deficit of 3.1% in 2002. Both governments are likely to breach the SGP for a third time in 2004: the German government is campaigning for a €16 billion tax cut in 2004. France is not thinking of abiding by the fiscal rule before 2005.

Germany in Dublin pushed towards the adoption of a fiscal rule called: "The Stability Pact." The wording was not appropriate for France: budget deficit is often synonymous of growth. Calling for a budget stability would be unpopular. The French in Amsterdam agreed on "The Stability and Growth Pact", insisting on the need for a fiscal rule but not at the expenses of growth. It is thus not surprising that in 2003, the French Prime Minister defended the tax-cut plan in order to give an impulse to the French growth although breaching the deficit rule.

It is also because of this difference in the interpretation that only the deficit rule was chosen and not the entire fiscal package: the debt plus the deficit rules. The political argument was stronger than the economic one, but nevertheless, the design of the SGP has some interesting economic impacts studied later on.

This anecdotal evidence is in fact of a tremendous help for the understanding of the paradox: France and Germany asking for fiscal stability although they are the first big economies not to respect the pact. Indeed, the priority order has never been the

same for the French and the Germans. For the Germans, fiscal stability is a prerequisite for not undermining the credibility of the euro while for the French the monetary policy is not so an issue. The first priority is growth, the second one is fiscal discipline, and the third is a sound monetary policy.

It is thus in Amsterdam in June 1997 that the European Council decided the creation of the Stability and Growth Pact. After the initial proposal for such a pact put forward by the German government in November 1995, the discussion in the European Union (EU) has led to a twin-track strategy. The first track is based on Article 103 of the Maastricht Treaty - under the aegis of strengthening the fiscal surveillance and the coordination - whereas the second track is based on article 104c on the excessive deficit procedure (Amtensbrik, de Haan et al. 1997). Article 103 sets up a preventive early warning system for identifying and correcting budgetary slippages to ensure that government budget deficits will not exceed the ceiling of 3% of GDP. Article 104c consists in a set of rules to avoid excessive deficits or to take measures (including sanctions) to correct them quickly if they occur. Governments running deficits higher than authorized are subject to sanctions. They take first the form of deposits that can be transformed into fines. The non-interest bearing deposits are made up of two elements: a fixed sum equal to 0.2% of GDP and a supplement of 0.1% of GDP for every percentage point by which the budget deficit exceeds the 3% reference level. Derogation is possible for "exceptional and temporary" circumstances, in particular in the case of negative annual real growth. Indeed, countries will be automatically exempt only if their GDPs have declined by 2% and the excess deficit is temporary and small. Those in which GDP declines by between 0.75% and 2% could also be exempt, but only with the concurrence of the Council of Ministers.

In the case France and Germany breach the pact again in 2004, the European Commission is supposed to ask them an interest-free deposit of between 0.2% and 0.5% of GDP. If they fail in respecting the pact in 2005, they lose the deposit - in other words a fine for Germany and France respectively of €4 billion and €3 billion.

The Franco-German case reactivates the literature on the pros and cons of the European fiscal rule. Germany, France, Italy and Britain constitute a powerful club arguing for a reform. The opponents whose budgets are in order are smaller states, such as Austria, Ireland and the Netherlands.

[Insert FIGURE 1]

One of the economic motivations of the European integration is to benefit from the advantages of an optimum currency area. Although it is debatable that the euro-zone is one (Eichengreen 1990), the European Union (EU) is putting together all the regulations targeting the idea of a convergent Europe. At once in the European pillars and in the European economic policies, we can find traces of this goal. The first outcome is that countries are more interdependent in the Economic and Monetary Union (EMU). The monetary policy is managed with the Euro-zone as an objective rather than a particular country. Budget policies are constrained by the Stability and Growth Pact (SGP), which is meant to stop members of the euro area undermining the single currency through fiscal irresponsibility. The risk that one of the member countries of the union may be on an unsustainable debt path is a matter of common concern for all the other members. As a result, the members of a monetary union will find it in their interest to control each other's budgetary behavior.

This common concern for maintaining sustainability of national debt levels in a monetary union has led to the fiscal rules in the Maastricht Treaty (debt and deficit ceilings) and later to the Stability and Growth Pact (SGP). The Maastricht Treaty has

given a practical meaning to sustainability: it defined the sustainable debt level for European economies to be 60% of GDP. The corresponding budget deficit consistent with this target debt ratio was put at 3% of GDP.

At the macroeconomic level, structural and tax policies are more or less the main policies remaining in individual countries' hands. Based on this political background, one can wonder why the European Commission kept the deficit as the fiscal criterion rather than the debt?

Hence, the paper addresses the question to know whether the Stability and Growth Pact is only a fiscal rule or could also create strong incentives to implement structural reforms. In such an event, getting rid of the Stability and Growth Pact would certainly loosen the fiscal pressure on the individual countries, but it will also correspond to one less incentive to reform the European economies.

2. Prolonging the Treaty of Maastricht's positive effects

Designed in 1992 and implemented in 1993, the Treaty of Maastricht embodied five economic criteria: inflation, interest rate, exchange rate, debt and deficit targets. They were at once "one" definition of convergence, a specific political definition of the fiscal sustainability concept for the euro-zone, and overall the easiest way to convince the European citizens compared to any other long public economic debates that could have occurred.

[Insert FIGURE 2]

[Insert FIGURE 3]

Once the EMU was created, the Treaty of Maastricht was no longer applicable to the qualified countries. In any event, neither the inflation, nor the interest, nor the

8

exchange rates were no longer consistent criteria. Indeed, they were no longer either applicable (e.g. no more intra-exchange rates) or controlled at national levels (inflation and interest rate). It is only in 1995 that some policymakers were concerned with the abandonment of the debt and deficit rules. The idea of extending the fiscal package embedded in the Treaty of Maastricht to the after transition period was born.

3. Pros and cons in the economic literature on the Stability and Growth Pact

In presence of externalities (or spillover effects), there is fear that market and policy distortions in one European country may have asymmetric effects on other European countries. To avoid these asymmetries, convergence was needed. The literature developed the argument for international coordination and cooperation. "Cooperation" and "coordination" differ: coordination exists when nations choose their policy instruments jointly and cooperation implies common institutions, rules and laws. The SGP is an illustration of a cooperation mechanism.

3.1 The policy-mix issue and the credibility of the ECB

Since the first of January 1999, the currency is managed by a "centralized" body, the European Central Bank (ECB) while the fiscal policy is decentralized at each country's level. The European budget is very meager (1.2% of GDP) compared to national budgets.

In the eighties and early nineties, the idea of a European Monetary Union was criticized on the grounds that such an institutional setting would be unable to cope with the fiscal problem, especially if national governments retained full fiscal autonomy. Propositions were made to advance more quickly towards the single European budget: supposedly the only institution capable of ensuring effective coordination. A rule like the SGP, aimed at sanctioning spendthrift governments, has been viewed as a good compromise: able to bring about sound fiscal policy while providing governments with needed flexibility during temporary output decreases.

This blend of centralized monetary policy and decentralized budgetary policies leads to a difficult question: how to establish the "right" policy mix for the euro zone? European authorities have long been concerned with this question. Already in 1989, the European Commission paid attention to the necessity of sound public finances as a condition of monetary integration: "Uncoordinated and divergent national fiscal policies would undermine monetary stability and generate imbalances in the real and financial sectors of the Community" (Delors 1989).

Aside this question, when the Treaty was draft, many felt that the fiscal setup could undermine the credibility of the European Central Bank (Beetsma and Bovenberg 1995). For instance, if a country's fiscal situation becomes unsustainable, other countries might be forced into a bail out of the insolvent national government. Or the European Central Bank may be forced to monetize unsustainable national debts, and so create additional inflation in the EU.

The SGP would save the credibility of the ECB while ensuring the latter of a good policy-mix as the countries are constrained by the fiscal rule.

3.2 Free-riding and moral-hazard behaviors

On the one hand, another problem arises with these decentralized fiscal policies: the possibility of free-riding behaviors. National governments may be tempted to borrow too much since the single currency reduces the interest rate penalty that they would otherwise had to face. The SGP is supposed to stop a chain reaction: to prevent a country from running too high a deficit because another is doing so. The assumed danger of the "prisoner's dilemma" is the "race to the top" in terms of deficit. The ECB could not avoid bailing out the governments by expanding the monetary policy. That could undermine the ECB's credibility, but would have the advantage for national governments to monetize the public deficit.

On the other hand, this example implies a moral hazard problem: member countries have an incentive to follow unsustainable policies. However, even if there are no problems of insolvency and moral hazard, there are spillover effects via interest rates. This question has been studied in the literature (Eichengreen and Wyplosz 1998); (Beetsma and Uhlig 1999); (Glick and Hutchinson 1993); (Andersen and Sorensen 1995). C. Goodhart introduced the idea that some countries may over borrow as far as they have access to the wider pool of European savings (Goodhart 1992).

3.3 A technical critique of the free-riding assumption

The idea that creation of the single currency should be followed by fiscal integration has already made its way out in a different analytical context. Given the limited worker cross-border mobility within the European region, the SGP fiscal rule

might be counterproductive insofar as it tightens the hands of governments in countries subject to asymmetric shocks.

Vranceanu and Warin (Vranceanu and Warin 2001) study the fiscal strategies of the countries taking part in the EMU, in the presence of fiscal externalities (spillover effects) and under an exogenous monetary policy. It focuses on the SGP ability to bring about efficient fiscal coordination and questions the assumption of free-riding behaviors. The analysis builds on a two-country model of monetary union, under a flexible exchange rate and perfect capital mobility with the rest of the world. In this case, the traditional Mundell-Fleming analysis suggests that any increase in public spending is offset by a reduction in net exports (Mundell 1961) (Fleming 1962). Indeed, the fiscal stimulus tends to increase interest rates, thus the currency appreciates and net exports should fall to restore equilibrium. In the context of a monetary union with decentralized fiscal policies, one member country may be tempted to unilaterally deviate by increasing public spending and deficits, given that only a fraction of its net exports will be crowded out, while the rest of the export loss would be suffered by the other member countries. This would bring about a positive employment effect in the origin country, provided that the other governments do not also increase spending. They explain that the Pareto-optimal strategy of no excess deficits would prevail even if the costs associated to excess deficits were low. As retaliation is the only logical choice for the partner, a small static cost will turn into a significant penalty when discounted, while the gain in terms of employment is only ephemeral. In this case, the large penalty laid down in the SGP for countries running deficits higher than the 3% of GDP looks to be excessive.

3.4 A financial critique of the free-riding possibility

Many economists have questioned the use of these kind of constraints in national fiscal policy, as they think that financial markets will be able to discipline governments' policies (Buiter, Corsetti et al. 1993). This view goes as follows: suppose that some EMU Member Country would face high deficits. There is little danger that its EMU partners would suffer as a result - provided they had made it clear to the markets that there would be no bailout. In that case, the default-risk premium would be loaded exclusively on the debt of the over-borrower. In other words, the would-be heavy borrowers face higher interest payments, which will provide them with an incentive to restrain fiscal policy.

In lights of this review of the literature, one could conclude that the cost of getting rid of the SGP would not counterbalance the benefits offered by the new fiscal freedom. Nevertheless, aside the pure fiscal features of the SGP, it also embodies one broader item: a strong incentive to structural reforms.

4. Stability and Growth Pact or Structural and Growth Pact?

Aside all these criticisms, there is a consideration that seems to be interesting: the structural impacts of the SGP.

4.1 From cooperation to coordination

As a cooperation tool, the SGP not only limits free-riding behaviors but also introduces some kind of policy coordination with structural impacts.

Yet, the SGP may not represent the optimal means of dealing with these problems. Wyplosz goes a step further and refers to "full policy coordination as would occur within a federal budget" (Wyplosz 1991). Cohen (Cohen 1990), and Branson (Branson 1990) defend the necessity of a federal budget besides national budgets. MacDougall (MacDougall 1977), De Grauwe (De Grauwe 1990), Italianer and Vanheukelen (Italianer and Vanheukelen 1993), Bryson (Bryson 1994) also advocate the need for a centralized budget as a way of establishing automatic stabilizers with income transfers from better-off to worse-off countries. On the contrary, others consider that the SGP fiscal rule might be counterproductive insofar as it ties the hands of governments if there is an asymmetric adverse shock. Others consider (Sachs and Sala-i-Martin 1989), at least in the European case, that the federal budget can not be implemented for political reasons.

Coordination may be justified in a monetary union. As long as the divergence in fiscal policy is the result of differences in the business cycle, it would be difficult to argue that these differences would have any negative impact on the implementation of monetary policy. But when the differences in fiscal policy are the result of discretionary (or exogenous) changes in national fiscal policy, then the implementation of monetary policy and its interaction with fiscal policy might be affected.

As an illustration of the changes on the structure of revenue and spending allocations in the budgets, we can have a look on the convergence period. In the 90's, European countries experienced large and uneven budgetary adjustments. While in the first years (1991-1992) fiscal policy was either expansionary or neutral, most countries moved to restrictions in fiscal policy that ensured a reduction in their budget deficits.

The cyclically adjusted budget deficit in these countries moved from 5.9% of GDP in 1991 to about 0.7% in 1999. This adjustment was uneven, as most of it took place after 1995, with 1996 and 1997 being the most restrictive years.

According to Fatas and Mihov (Fatas and Mihov 2003), there are interesting differences across countries both in terms of timing and composition of the budgetary adjustment:

- In terms of timing, while most of the reduction in government expenditures took part in the second half of the 90's, the increase in taxes was higher in the first 5 years. Until 1993 government expenditures increased to a level of around 52% to come down to about 47% by the end of the decade. Taxes increased rapidly in the years 1992-1997, reaching a level of 47.5% of GDP and have remained stable since then. According to Fatas and Mihov, one of the reasons for the uneven adjustment of government expenditures is the evolution of financial expenditures associated to the interest payments on the government debt. While interest payments increased from 4.8% to 5.5% in the period 1990-1993, after 1995 the reduction in interest rates brought this burden down to 4.3% by 1999. This means that about half of the reduction in government expenditures during the period 1995-1999 is due to a reduction in interest payments.
- Regarding the composition of the adjustment, the reduction in budget deficits was achieved through at once a reduction in expenditures and an increase in tax revenues. In the case of expenditures, there is a reduction from 49.6% of GDP in 1991 to 48.3% in 1999. During the same years, taxes were increased from 43.7% to 47.6%.

Hence, most countries relied on taxes for the first years and later switched to expenditures as the mean to achieve the desired reduction in budget deficits.

4.2 The SGP: A low deficit-zero debt rule

It seems odd that countries paid so much attention at once to the deficit rule and the debt rule during the integration and then have forgotten the latter. In a theoretical way, if a country meets 3% of budget deficit every year, it respects the SGP but without any doubt will be in financial trouble in 20 years and may endanger the European financial credibility. It is probably for this reason that countries promised in Barcelona to follow a "zero" budget deficit rule by 2004. This pledge could also be interpreted as a signal given by national authorities to the European Commission that they don't want another strict rule, but are able by themselves to credibly commit on an informal rule.

But in fact, having a closer look at the design of the SGP leads to a different interpretation on the need or not of a debt rule. The way the SGP rule is designed leads countries to a zero debt rule in around 50 years. If such a phenomenon happens, the only economic tool in the governments' hands would be the structural policy. It is well known that the 3% deficit norm will indeed ensure that the 60% debt ratio can be kept constant provided the nominal growth of GDP happens to be 5% and the inflation rate to be 2%. It has been noted by some economists that these numbers are quite arbitrary (Buiter, Corsetti et al. 1993). Things have changed since the Maastricht Treaty. The Stability and Growth Pact redefined the steady state target that countries should aim at. By insisting that governments should balance the budget over the medium run, the steady state target for the debt ratio was lowered from 60% to 40%: a change in objectives almost unnoticed at the time the stability pact was agreed upon. Assuming that nominal GDP increases by 5% a year, the dynamics of the SGP leads to a situation in which the debt

ratio of all the member countries (except Belgium, Greece and Italy) drops below 20% during the next 20 years.

[Insert FIGURE 4]

4.3 Analytical reasons for a zero debt outcome

The overall issue is whether this balanced budget rule forcing these countries to bring their debt ratios to zero in the long run is desirable. If we come back to the Treaty of Maastricht's definition of economic sustainability for the euro-zone, the answer is no. The next figure illustrates the general government consolidated gross debt for 2002 in percentage of GDP:

[Insert FIGURE 5]

Here two economic reasons can be underscored in the design of the SGP that could lead to this zero-debt outcome. The first reason may be the way the SGP is measured. The SGP is calculated over GDP. Indeed, the budget deficit must be below 3% of GDP. There is at least no explicit link between GDP and the budget deficit. In choosing to base the measurement on GDP, the European Commission found an easy and clear way to give credit or not to the countries. But at the same time, countries face difficulties for adjustments. Indeed, it is almost impossible to target a deficit of 3% of GDP because they don't know what the GDP will be: it is an *ex post* rule. In other words, in order to ensure the respect of the SGP, a country has to target a deficit lower than 3%.

The second reason is the fine. It seems indeed critical to fine a country that is facing a downturn in its growth rate. The fine can even put the country into a recession. But in fact, there is a backward induction equilibrium: knowing the austerity of the

fiscal rule, countries have an interest in keeping some fiscal flexibility in order to provide a downturn in their growth rate with the appropriate fiscal response.

These two dynamic impacts reinforce the argument that the deficit rule is designed in a way that pushes countries to consider a smaller practical figure for their deficit than the official 3%. As a result and based on the assumptions of a GDP nominal growth rate of 5% and an inflation of 2%, the debt will decrease to zero per cent. As a direct consequence, the decisive economic policy that remains in the governments' hands is the structural one.

5. Policy implications

Although only based on the deficit criterion, the SGP has an interesting impact on the debt. Moreover, it embodies an appealing feature in terms of economic policy: it creates the incentive to implement structural reforms.

In lights of the optimum currency area theory, it is often advocated in Brussels that European countries need to reform their economies. Indeed, having lost their autonomous monetary policies, being restrained on the fiscal side, they could only face an asymmetric economic shock by introducing some flexibility in the way their economies can adapt to new economic situations.

Structural policies are often evaluated in economics using labor markets as a proxy. Thus, Europe should improve labor mobility as well as wage flexibility. This may be the first policy implication of the incentive created by the SGP. However, in order to abide by the SGP, countries can change the revenue side of their budget as well as the expenditure one, which also shape the structure of an economy. For instance, they can

change the tax base from mobile assets to immobile assets as well as they can change the expenditures favoring spendings that will attract tax payers, in other words companies more than individuals. In Europe, the trend is in a change in the tax base as well as a reduction in the social spending. Some even fear a tax competition leading to a race to the bottom. Considering that the SGP creates an incentive to such a budget change, one can think that the SGP is one of the sources of this pressure on taxes.

Hence, getting rid of the SGP in the next years may be counterproductive since it provides Europe with an incentive to work on the structure of its economies. However, is it in the interest of Europe to keep the SGP in the long-run? The answer is negative considering the zero-debt outcome. First, European countries would lose a chance to use their public finances to model their political societies, and their citizens may not be ready to this. Second, it would have a huge impact on the euro exchange rate and would ask European economies to implement further structural reforms. Third, it does not correspond to what has been politically decided in Europe as being the fiscal sustainable level: 60% of GDP.

6. Conclusion

In this paper, we discussed the possible side effect of the SGP on governments: an incentive to push towards economic structural reforms. At a time when the major countries - the ones that created the SGP - do not respect it, we first presented the initial rationale of the fiscal rule. We challenged these initial arguments by referring to new discussions in the literature. This analysis leads us to the idea that reforming the SGP would not be so hazardous on the fiscal side. Nevertheless, the paper pointed out

the fact that by only considering the fiscal side, policymakers would lose an interesting tool for pushing up the structural reforms in Europe.

Two features of the SGP are of a main interest to support such a thesis: on the one hand, the fact that the SGP is based on GDP, which is by definition an *ex post* measure. This leads to tighten a little more the fiscal policy and authorize reforms almost only on the structural side. Countries that cannot play on the deficit would be forced to work on the revenue and the spending sides of their budget. In doing so, they change the structure of the economy.

On the other hand, the second feature is that the SGP leads to a null debt reinforcing the previous argument: the fiscal policy has to be neglected to the profit of the structural one - the monetary policy having been transferred into the ECB's hands.

References

- Amtenbrik, F. J., J. de Haan, et al. (1997). "Stability and Growth Pact: Placebo or Panacea?" European Business Law Review: 202-210 and 223-238.
- Andersen, T. M. and J.-R. Sorensen (1995). "Unemployment and Fiscal Policy in an Economic and Monetary Union." European Journal of Political Economy(11): 27-43.
- Beetsma, R. and A. L. Bovenberg (1995). "The Interaction of Fiscal and Monetary Policy in a Monetary Union: Balancing Credibility and Flexibility." Working Papers Tilburg Center for Economic Research(95101).
- Beetsma, R. and H. Uhlig (1999). "An Analysis of the Stability and Growth Pact." Economic Journal(109): 546-571.
- Branson, W. H. (1990). Intégration des marchés financiers et croissance durant la transition vers l'UEM. Vers l'Union économique et monétaire européenne. d. F. e. d. B. Ministère de l'Economie. Paris, La Documentation Française.
- Bryson, J. H. (1994). "Fiscal Policy Coordination and Flexibility under European Monetary Union: Implications for Macroeconomic Stabilization." Journal of Policy Modeling **16**(6): 541-557.
- Buiter, W. H., G. Corsetti, et al. (1993). "Excessive Deficits: Sense and Nonsense in the Treaty of Maastricht." Economic Policy **16**: 58-90.
- Cohen, D. (1990). Union monétaire, solvabilité des Etats et politiques budgétaires. Vers l'Union économique et monétaire européenne. d. F. e. d. B. Ministère de l'Economie. Paris, La Documentation Française.

De Grauwe, P. (1990). La discipline budgétaire dans les unions monétaires. Vers l'Union économique et monétaire européenne. d. F. e. d. B. Ministère de l'Economie. Paris, La Documentation Française.

De Grauwe, P. (2003). Economics of Monetary Union. Oxford, Oxford University Press.

Delors, J. (1989). Economic and Monetary Union and Relaunching the Construction of Europe. Luxembourg, Office of Official Publications of the European Communities.

Eichengreen, B. (1990). "Is Europe an Optimal Currency Area?" CEPR Discussion Papers(478).

Eichengreen, B. and C. Wyplosz (1998). "The Stability Pact: More than a Minor Nuisance." Economic Policy: 67-113.

Fatas, A. and I. Mihov (2003). "On Constraining Fiscal Policy Discretion in EMU." Oxford Review of Economic Policy: Forthcoming.

Fleming, J. M. (1962). "Domestic Financial Policies under Fixed and under Floating Exchange Rates." IMS Staff Papers **36**: 810-835.

Glick, R. and M. M. Hutchinson (1993). "Fiscal Policies in Monetary Unions: Implications for Europe." Open Economies Review(4): 39-65.

Goodhart, C. (1992). EMU in Europe: A UK Perspective. Exchange Rate Regimes and Currency Unions. E. B. a. H. W. Sinn. New-York, St Martin's Press; 1983-2199.

Italianer, A. and M. Vanheukelen (1993). "Proposals for Community Stabilization Mechanisms: Some Historical Applications." European Economy **5**: 493-510.

MacDougall (1977). Report of the Study Group on the Role of Public Finance in European Integration. Brussels, Commission of the European Communities.

Mundell, R. (1961). "A Theory of Optimal Currency Areas." American Economic Review **51**: 657-665.

Sachs, J. and X. Sala-i-Martin (1989). "Federal Fiscal Policy and Optimum Currency Areas." mimeo Harvard University.

Vranceanu, R. and T. Warin (2001). "EMU: Optimal Fiscal Strategy and the Punishment Effectiveness." Review of International Economics **9**(3): 494-504.

Wyplosz, C. (1991). "Monetary Union and Fiscal Policy Discipline." European Economy **44**(1): 165-185.

FIGURES

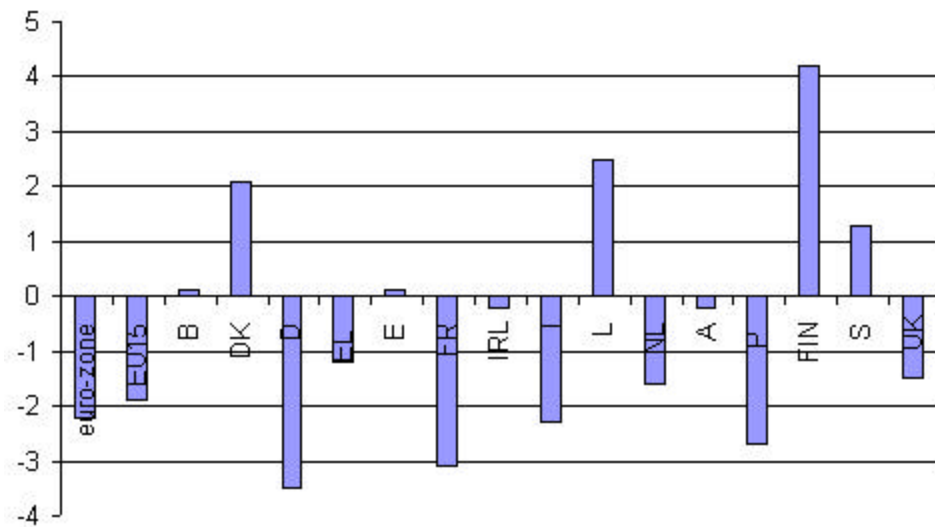


FIGURE 1. General government deficit in 2002 (total in % of GDP). Source: Eurostat, 2003.

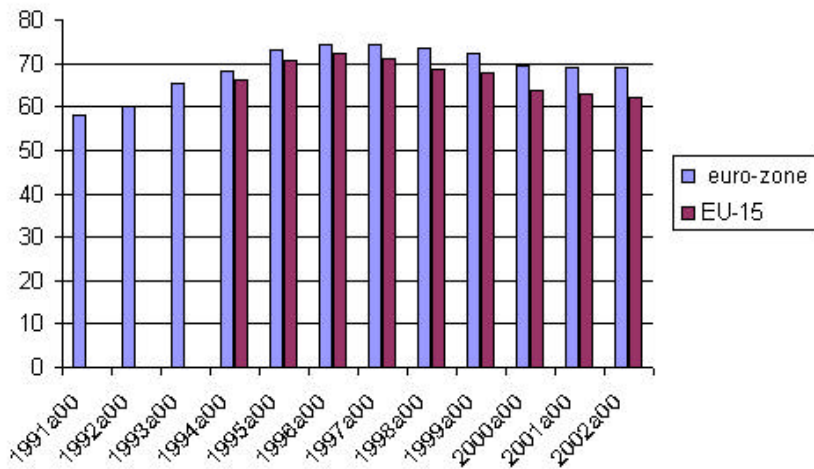


FIGURE 2. Gross debt to GDP in the EMU and EU zones in 2002. Source: Eurostat, 2003.

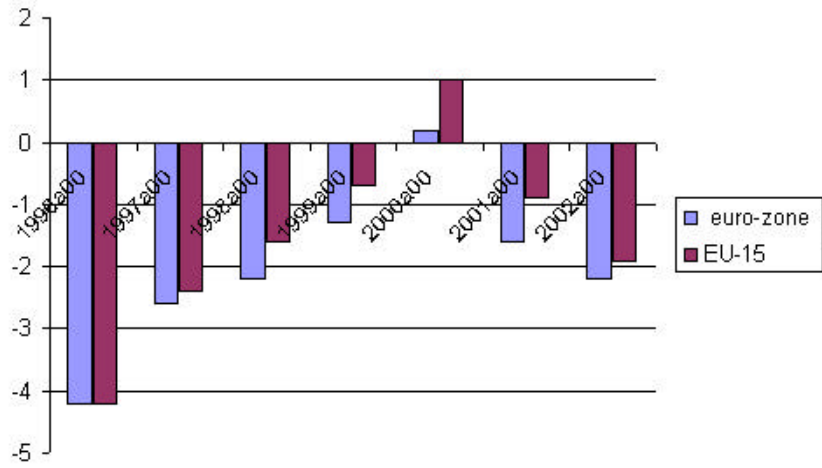


FIGURE 3. Deficit to GDP in the EMU and EU zones in 2002. Source: Eurostat, 2003.

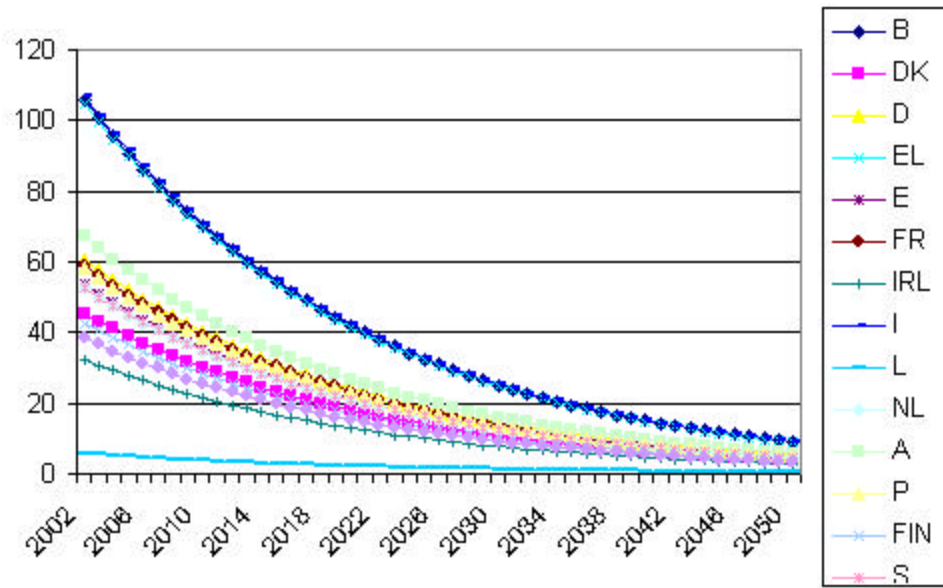


FIGURE 4. Debt to GDP ratio under SGP. Source: (De Grauwe 2003).

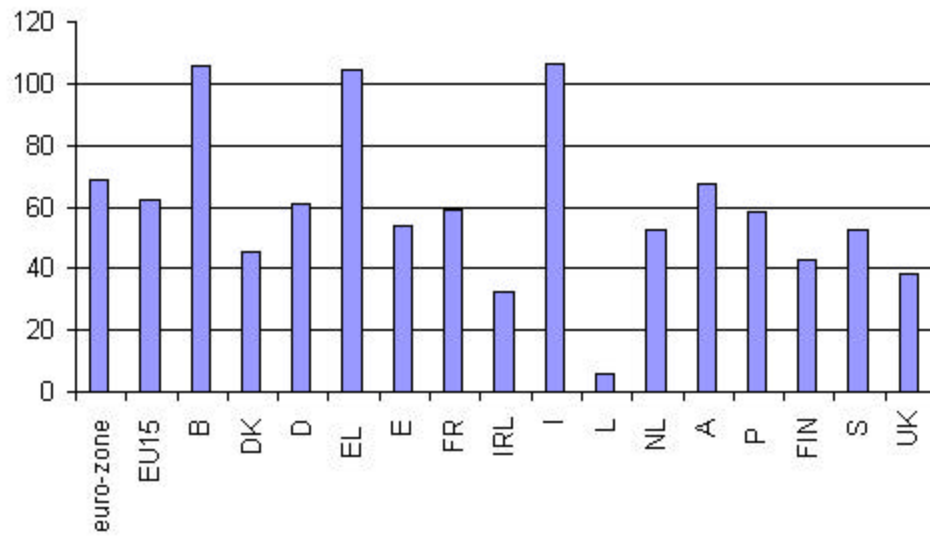


FIGURE 5. General government gross debt in 2002 (total in % of GDP). Source: Eurostat, 2003.