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Fiscal Discipline and Growth in Euroland. Experiences with the Stability and Growth Pact

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Experiences with the Stability and Growth Pact

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1. Introduction

The European Monetary Union (EMU), which began on 1 January 1999, is a new framework not only for monetary policy, but also for the fiscal policies of its member states. EMU is an exceptional monetary arrangement in that it confronts a monetary authority with multiple, large national fiscal authorities rather a single central government conducting fiscal policy at the level of the monetary union, as in conventional, national monetary systems. In 2001, total government spending in the euro area was 43.6 percent of the combined GDP, but Community spending was below 1.3 percent of GDP. The combined gross public debt of the euro area states was 69.1 percent of GDP, while EU debt is negligible.

The need to create a genuine institutional framework to deal with this exceptional degree of fiscal decentralization in a monetary area was recognized clearly in the blue-print for monetary union in Europe, the Delors Report (1989). Building on its predecessor, the Werner Report (1970)[1], the Delors Report called for institutional provisions safeguarding fiscal discipline in the monetary union, arguing that a lack of fiscal discipline might undermine the stability of the new currency. Furthermore, the Delors Report argued that the fiscal policies of the member states needed to be coordinated to assure a smooth macro economic functioning of EMU, and that there should be some degree of fiscal equalization among the members transferring public resources from member states in cyclical upswings to those in cyclical downswings.

The Treaty on European Union (TEU), i.e., the Maastricht Treaty and its successor, the Amsterdam Treaty, did not accomplish that agenda in its full extent. Fiscal policy remains a national competence for EMU member states, but under several constraints. According to Art 4(3) of the TEU, "sound public finances" are one of the guiding principle of economic policy in the EU. EU Procedures with relevance to the conduct and coordination of fiscal policy are the Mutual Surveillance Procedure (Article 99), the "No-bail-out clause" (Art 103), the Excessive Deficit Procedure (EDP, Art. 104), and the Stability and Growth Pact (SGP, Council Regulations 1466/97, 1476/97, Council Resolution 97/C236/01-02). Art 99 holds that the member states of the EU regard their economic policies as a matter of common concern and coordinate them through the ECOFIN Council and on the basis of "Broad Economic Guidelines." The No-bail-out rule protects the Community and the member states from becoming responsible for financial liabilities of other member states against their will. The EDP sets up a detailed process of monitoring the public finances of the member states with a view to ensuring that they remain sustainable. It includes the mandate (Article 3 of the Protocol) that the member states of EMU should implement appropriate institutions at the

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[1] The Werner Report, published in 1970, was the first document outlining the creation of a monetary union among the member states of the European Communities after the adoption of this goal by the European Summit of The Hague in 1969.

national level that enable them to fulfill their obligation for maintaining sustainable finances. There is, however, no explanation of what this obligation means in practice. The SGP refines and concretises the procedures of the EDP.

In this paper, we review the economic rationales for each of these issues, the relevant institutional provisions, and the experience in EMU so far. We begin with a discussion of the institutional developments. In section 3, we turn to the issue of fiscal discipline and growth. The final section concludes and looks ahead towards the future.

2. Fiscal Discipline in EMU

A basic belief underlying the framework of EMU is that the stability of the common currency requires the stability of public finances. The fear that high and rising public debts would undermine the central bank's ability to deliver price stability has left its mark in all important documents and political decisions on the way to EMU. Although the post-World War II inflations in the industrialized countries were not caused by excessive public debts, the fear derives from disastrous historical experience, namely the hyperinflations in Germany and Austria of the early 1920s and the German currency reform of 1948. In terms of technical economic analysis, fiscal policy and monetary policy are indeed linked through the "intertemporal budget constraint," the requirement that, in the long run, the discounted sum of a government's expected expenditures cannot exceed the discounted sum of its expected revenues.[2] If the government can print money, seignorage is part of its expected revenues. Thus, given an expected stream of expenditures in the future, and given an expected stream of tax revenues, seignorage has to make due for any shortfall of the latter over the former. As closing the gap requires printing more money, inflation will be the consequence.

In EMU, the issue is somewhat more complicated, because the governments of the individual member states have given up the right to print money. Thus, seignorage will be paid to them in the form of central bank profits, but, since the central bank is politically independent and, by virtue of the Treaty on European Union (Art. 104 TEU and Art. 21.1 of the ECB Statutes) cannot directly monetize public debts, seignorage should be exogenous to government spending and tax policies. That is, given an expected stream of expenditures and an exogenous flow of seignorage, the governments must adjust taxes to assure that the intertemporal budget constraint holds. Otherwise, they will be forced at some point to default on their debts. A fiscal crisis would arise, but it does not create inflation in the monetary union, unless the central bank ignores its mandate for price stability and bails out the troubled government. Note that, while the ECB cannot legally bail out a government in fiscal difficulties by buying its debt directly, it can still do so indirectly, if it wants to. A bailout could be ex post, with the central bank buying up large amounts of government debt in the market,

or ex ante, with the central bank holding down interest rates to reduce the government's interest payments. Either way, the critical question is, whether or not the central bank's institutional independence and its will to use its independence to safeguard price stability are sufficiently strong so that it withstands any political pressures to provide a bailout.

A second consideration within a monetary union is that the inflation caused by a bailout is spread over the entire monetary area and, ceteris paribus, is lower for the government demanding a bailout than it would be, if that government still issued its own currency. Thus, the monetary union reduces the inflation cost of a bailout of a given size, and excessive public debts create negative externalities for the citizens of other countries if the central bank provides a bailout. If governments care about the negative consequences of inflation, this means that the incentives to maintain stable public finances are weaker in a monetary union than in a national monetary system. Unless there is complete certainty that the central bank would never provide a bailout, one should, therefore, expect that fiscal policy is less disciplined in a monetary union.

Both considerations lead to the conclusion that a monetary union among sovereign nations requires some rules and constraints preventing the national governments from running up excessive levels of debt that would, in the long run, threaten the common good of the monetary union, i.e., price stability. The difficulty with that conclusion is in the question of how to translate it into a framework that guides and constrains the governments' fiscal policies in the short run. As noted above, the governments' intertemporal budget constraint pertains to the long run, therefore, it has little if any implications for annual budgetary policies and fiscal flows.[3] In a world with perfect information and no transactions costs, the optimal solution would be to adopt a fiscal policy rule stating in detail what governments should do under what circumstances to meet the intertemporal budget constraint. In reality, the world is too complex and uncertain to do that. A simple fiscal rule limiting annual government deficits or debts is of little use under such circumstances, because it would constrain the governments' fiscal policies either too much or too little in the short run. Either way, it would lack credibility. In the first case, because it may force sovereign governments under some circumstances to adopt policies that are unreasonable or even damaging for their own countries. In the second case, because it would have not bind government actions sufficiently in the short run. The proper response, therefore, is to design a framework that combines guidelines for short run budgetary policies with proper judgment about current and future developments. The EMU's framework for this purpose consists of two parts, the EDP created by the Maastricht Treaty and the SGP, adopted at the Amsterdam Summit.

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[2] See e.g. Sargent and Wallace (1981).
[3] This is best seen in the fact that governments can always promise future actions to collect more revenues to compensate for today's deficits. See Perotti et al. (1998) for a more detailed discussion.

2.1. The Excessive Deficit Procedure and the Stability and Growth Pact

The EDP is the cornerstone of the fiscal framework of EMU. It combines the unconditional obligation on the part of the member states to avoid "excessive deficits" with a procedure aiming at providing a regular assessment of fiscal policies in EMU and, if necessary, penalties for profligate behavior (Article 104 TEU). The EDP charges the European Commission with the task of monitoring budgetary developments and the stock of public sector debt of the member states, checking in particular their compliance with two *reference values* for the ratio of the deficit to GDP the ratio of public debt to GDP. The two reference values are set at three and 60 percent, respectively (Protocol on the EDP). If a member state does not comply with these reference values, and unless the deficit and the debt are approaching their reference values in a satisfactory way, or the excess of the deficit over the limit is exceptional and temporary, the Commission writes a report to the European Council, taking into account whether the deficit exceeds public investment spending and "all other relevant factors, including the medium term economic and budgetary position" (Art 104(3)) of the country concerned.[4] If the Commission considers that an excessive deficit exists, it makes a recommendation to the European Council, which votes on it by qualified majority after taking into account any observations the country concerned may make and the opinion of the Economic and Financial Committee (EFC), which advises the Council in these matters (Art. 114). It is the Council who decides whether or not an excessive deficit indeed exists.

If the Council decides that this is the case, it makes confidential recommendations to the country concerned on how to correct the situation within a given period of time. If the country does not take appropriate action and does not respond to the Council's recommendations in a satisfactory way, the Council may make its views and recommendations public, ask the government concerned to take specific corrective actions, and, ultimately, impose a financial fine on the country. In that case, the country would first be required to make a non-interest bearing deposit with the Community. If the excessive deficit still persists, this deposit would be turned into a fine paid to the Community.[5] The Council can abrogate its decisions under the EDP upon a recommendation from the Commission. All Council decisions in this context are made by qualified majority; once a country has been found to have an excessive deficit, its votes are not counted in these decisions.

In the context of the EDP, the numerical criteria for deficits and debts thus serve as triggers for an assessment prepared by the European Commission and made by the European Council. They do not themselves define what an excessive deficit is, nor does breaching them imply any sanctions *per se*. Since they merely serve as triggers for a more

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[4] According to Art. 104(3) the Commission may also prepare a report if a member state complies with the criteria but the Commission sees the risk of an excessive deficit nevertheless.

[5] Note that neither the deposit nor its conversion into a fine affect the budget of the country in question as both are financial transactions.

precise assessment of the situation, there is no need to make the criteria themselves responsive to economic circumstances, e.g., by redefining them to exclude interest spending or cyclical effects on spending and revenues. These and other circumstances can be accounted for in the Commission's analysis, EFC's opinion, and the Council's judgment. In view of the need to balance long-term objectives with short-run constraints on actual policy, such a trigger-role is appropriate for the numerical criteria.

During the mid-1990s, however, public fears arose in Germany during the 1990s that the EDP would not suffice to discipline fiscal policies effectively in EMU. Given the rules of the procedure, such fears can only reflect a lack of credibility of the European Council, since the Council passes the ultimate judgment and adjudicates the fines foreseen under the EDP. This lack of credibility is, in fact, easily understood. By assigning the right to decide whether or not an excessive deficit exists to the European Council, the EDP effectively makes a group of "sinners" judge the performance of "sinners." Considering the fiscal performance of other governments, Council members have all reason to be lenient and avoid taking actions that are politically costly for fellow members, anticipating that they might be in a similar position in the future. This makes a serious judgment and application of the sanctions by the Council unlikely.

Germany's finance minister at the time, Waigel, responded to these fears by proposing a "Stability Pact" for EMU, which was later adopted as the "Stability and Growth Pact" (SGP) by the European Council.[6] The SGP modifies the EDP in several ways. First, it sets up an early warning system strengthening the surveillance of the public finances of member states. Under the SGP, EMU member states submit annual Stability Programs to the European Commission and the European Council explaining their intended fiscal policies and, in particular, what they plan to do to keep the budget close to the new and stricter medium term objective of "close to balance or in surplus." Implementation of these programs is subject to the scrutiny of the Council, which, based on information and assessments by the European Commission and the EFC can issue early warnings to countries that risk significant deviations from the fiscal targets set out in their Stability Programs. The goal of the Stability Programs is to achieve and maintain budgetary positions of close to balance or in surplus.

Second, the SGP clarifies the EDP by giving more specific content to the notions of exceptional and temporary breaches of the three-percent limit and by defining the rules for financial penalties, and it speeds up the process by setting specific deadlines for the individual steps. Third, the SGP gives political guidance to the parties involved in the EDP, calling them to implement the rules of the EDP effectively and timely. It commits the Commission in particular to using its right of initiative under the EDP "in a manner that facilitates the strict, timely, and effective functioning of the SGP." This puts severe limits on

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[6] For an account of the genesis of the SGP see Stark (2001).

the Commission's right to exercise judgment on each individual case and situation, shifting that right to the Council instead.

The rules of the SGP have been further developed in a set of ECOFIN decisions regarding the format and content of the Stability Programs.[7] In October 1998, the ECOFIN endorsed a Monetary Committee (the precursor of the Monetary and Financial Committee) opinion, the "code of conduct" specifying criteria to be observed in the assessment of a country's medium-term budgetary position and data standards and requirements for the Programs. In October 1999, ECOFIN recommended stricter compliance with and more timely updating of the Programs. In July 2001 ECOFIN endorsed an appended code of conduct proposed by the EFC refining the format and the use of data in the Stability Programs, including the use of a common set of assumptions about economic developments outside the EMU. Meanwhile, the Commission (2000) has specified a detailed framework of interpretation for the divergences from the targets set in the Stability Programs.

Compared to the original EDP, the SGP achieves two things. First, it shifts the nature of the fiscal framework more towards a rules-based concept constraining annual deficits and away from a framework based on informed judgment. Second, it weakens the position of the European Commission in the process considerably, to the benefit of the Council. While the Maastricht Treaty gave the Commission considerable discretion in initiating the EDP and moving it forward, the SGP, by making the process "more automatic," reduces the Commission's role and raises the importance of the Council's judgments and decisions. The Commission does not depend directly on the governments; its role in the EU is to watch over the proper implementation of the Treaty. Thus, the SGP shifts the balance of power in the fiscal policy framework from the institutional guardian of the Treaty to the representatives of the member states. In doing so, it politicizes the process and the decisions taken under it even more than the original EDP.

The representatives of the national governments in the Council will tend to accept other governments' excuses for lack of fiscal discipline, because for every Council member doing so is the best way to assure a mild treatment for his own country in times of fiscal difficulties. Anticipating this, the European public will tend to dismiss arguments brought forth by the Council explaining why individual violations of the criteria and provisions should be accepted for special circumstances, even if these arguments were justified. As a result, the SGP reduces the weight of sounds economic judgment and increases the attention and emphasis the public puts on the numerical criteria, making the entire process more rigid in the short run than intended. In doing so, the SGP has weakened the credibility of the fiscal framework. Politically, the consequence has been that public opinion and financial markets take the numerical criteria, close to balance and three percent limits for deficits more

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[7] See European Commission (2002), p. 23

seriously than a sensible economic procedure would warrant. The experience of the early years of EMU shows that the large countries in particular regard the fiscal framework as a straightjacket for their fiscal policies. There is now a serious risk that the SGP will, in the end, cause the opposite of what it intended: When the large EMU countries finally decide not to accept that perceived straightjacket any longer and ignore the rules, the common currency will be left with less instead of more protection against fiscal profligacies.

2.2. Experiences in the 1990s

In 1992, the EU's average debt ratio was almost 60 percent of GDP – hence the 60 percent limit foreseen in the Maastricht Treaty.[8] It climbed to almost 75 percent in 1997, the base year for the May 1998 decision on which countries could enter EMU. Since 1997, the average debt ratio has fallen to 62.8 percent. In contrast to what EU officials and politicians like to tout, the data do not show that the Maastricht process for fiscal consolidation was successful.

Several qualifications apply. First, the increase in the average debt ratio was driven mainly by debt expansions in five states: Germany (from 44% to 61%), France (from 40 % to 56%), Spain (from 48% to 70%), Italy (from 109% to 124%), and the UK (from 42% to 55%). While Belgium and Luxembourg almost stabilized their debt ratios, the Netherlands and Ireland enjoyed falling debt rations during this period. The debt ratios of the other states were stabilized or fell after 1992.[9] Do the EDP and SGP work more effectively in small EMU states than in the large ones? To answer this question, Table 1 reports the changes in the debt-GDP ratios for large states (states, whose GDP in 1997 was at least seven percent of EU GDP), Germany, Spain, France, Italy, and the UK, intermediate states (states, whose GDP is between two and seven percent), Belgium, the Netherlands, Austria, and Sweden, and small states (whose GDP was less than two percent of EU GDP), Denmark, Greece, Ireland, Luxembourg, Portugal, and Finland. The combined GDP of the large states is 80 percent of EU GDP, that of the intermediate states 13 percent, and the small states have a combined GDP of 7.7 percent of EU GDP. The table shows that, between 1992 and 1997, the average debt ratio of the small states increased by just 3.3 percent, much less than that of the large states, which rose by almost 19 percent. Between 1997 and 2001, the small states achieved a reduction in their debt ratios by almost 20 percent, much more the 5.3 percent of the large states. Intermediate states behaved much like small states during this period.

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[8] The 3 percent deficit limit under the EDP derives from the 60 percent debt limit assuming an average nominal GDP growth rate of five percent in all EMU member states.
[9] Austria's and Finland's debt ratios increased after 1992, but these countries were not bound by the EDP at the time.

Table 1: Country Size and Government Debt in the 1990s

Change in Debt Ratio (percent)	All EU Countries	Large States	Intermediate States	Small States
1992-1997	15.8	18.8	4.1	3.3
1997-2001	-12.0	-5.3	-18.2	-19.8

Note: Data source is European Economy Statistical Appendix Spring 2002, published by the European Commission DG ECFIN.

This suggests that the fiscal framework is indeed more effective in the small than in the large states, which implies that it is most effective where it matters the least, since a fiscal crisis in a small EMU member state would hardly threaten the stability of the common currency. In contrast, a fiscal crisis in a large state might do that, and there the fiscal rules seem much less effective. Recent anecdotal evidence confirms the point. In early 2002, an election year in Germany, the German government in early 2002, the Commission noted that the German government failed to comply with its Stability Program, missing its own targets by a significant margin of more than one percent of GDP and approaching the 3 percent deficit limit. The Commission, therefore, proposed to issue an early warning to Germany. The German government, however, managed to achieve a deal with the other governments in the ECOFIN Council under which the German finance minister promised to balance the budget by 2004 to avoid the public announcement of an early warning. The commitment was widely regarded as unachievable for Germany under plausible economic circumstances. Shortly afterwards, the newly appointed French government announced its intention to postpone balancing the budget until 2007 given current economic projections, three years later than its commitments from the previous Stability Program. In the Summer of 2002, the Italian government stated a similar intention. In September, the European Commission, in a surprise move, proposed to excuse EMU countries for not balancing their budgets before 2006 in view of weak cyclical conditions. Smaller EMU states saw this as a favor paid to the large countries.[10] Importantly, the Commission proposed a set of targets and guidelines for fiscal policy in exchange for an extension of the time limit to reach budget balance. Accepting this proposal would have increased the Commission's role in the process. However, the ECOFIN Council of October 7, 2002, decided to reject the proposal, leaving it effectively up to the member states to decide when they wish to reach the target.

The second qualification is that the observation of fiscal consolidations in some EU states during the 1990s connot simply be attributed to the Maastricht process. Since most European countries had had sizeable fiscal expansions during the 1970s and 1980s, a period of consolidation could be expected in the 1990s anyhow. A study of European fiscal policy in the 1990s (Hughes Hallett, Strauch and von Hagen, 2001) considers this argument

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[10] See Thomas Fuller (2002)

in detail. It shows that the observed consolidations in the 1990s could well be expected just by extrapolating patterns of fiscal behavior of EU states in the 1970s and 1980s. The evidence of a "Maastricht effect" speeding up or enforcing consolidations is weak at best.

2.3. Internal Stability Pacts

In countries where sub-national governments control a large part of the public finances, the central government's ability to keep its commitment to the SGP can be a difficult matter. Several countries have tried to implement "Internal Stability Pacts" between the central and sub-national governments to solve this problem.

To achieve the required improvement of the budget balance in a short period of time, the Austrian government reached an agreement with the other levels of governments in the federal system already in 1995. It affirmed the willingness of lower-level governments to consolidate the budget primarily through expenditure reductions. A "Maastricht-working group" was established to monitor the fiscal performance, clarify the statistical concept of the "Maastricht deficit," and make proposals for organizational changes and the improvement of the information system. (Hüttner 1999). During the negotiations for the federal transfer system governments agreed on a maximum deficit for each level of government in 1997. The federal government was "accrued" a deficit of 2.7 percent of GDP and the lower levels of 0.3 percent of GDP. This arrangement was replaced by the „Austrian Stability Pact" and approved by the federal parliament in 1998.[11] It distributes the permissible deficit to the lower levels of government largely according to the share of the population living in the Land. In addition, it established a national co-ordination committee between the federal government, the Länder governments and the municipalities and eight co-ordination committees at the Länder level. The national committee has the task to support or carry forward the co-ordination of fiscal policy, specifically regarding the re-negotiation of deficit shares, establishing guidelines for the medium-term orientation of public finances, monitoring of public finances and elaboration of information standards allowing the mutual surveillance of resource flows. The Länder co-ordination committees have the equivalent mission for the lower level of government. In addition, the Pact specifies what happens if the EDP ever results in a sanction for Austria. The arrangement is re-negotiated every four years.

The Belgian federal government considered binding agreements with the regions on the fiscal performance from the very beginning of the Maastricht process (see Convergence Programme June 1996). Ina series of intergovernmental treaties permissible deficit levels were established for the federal government and the social security system and the regions

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[11] Vereinbarung zwischen dem Bund, den Ländern und den Gemeinden betreffend die Konsolidierung der Haushaltsführung von Bund, Ländern und Gemeinden

and local governments.[12] The deficit limits are based on the recommendations of the High Council of Finance, which monitored the Convergence Process.

The High Council of Finance was revived and strengthened in the context of the decentralization of the Belgian government system enacted in 1989. Its main role was to supervise and guide the process of fiscal devolution. It consists of representatives of the federal ministry of finance, regional representatives, members of the central bank, and economic experts. During the 1990s, the High Council, and particularly its permanent section on fiscal policy, also monitored the execution of the Belgian Convergence Plan by federal and regional institutions. Neither the co-operation agreement between the central and regional governments includes formal sanctioning procedures, nor is the High Council endowed with direct sanctioning instruments, when it detects a deviation from the permissible deficits. However, the Special Financing Act of 1989 authorizes the federal government to restrict the borrowing capacity of the regions for a period of up to two years, following the advice of the High Council of Finance and after consulting the regions.

Like Belgium, Spain went through a process of significant decentralization in the 1990s.[13] Spanish regions are subject to general financing restraints defined by the law on regional financing or the general regulations applying to the public sector. In particular, regions should use debt financing only for investment and the total annual amount of repayments and interests should not exceed one-fourth of the regional current revenue, the central government must authorise the issuance of government debt, and regions should co-ordinate with each other and the central government their debt policy in the Fiscal and Financial Policy Council.[14] The regions are obliged to submit annual debt schedules to the central government. Following the release of the March 1992 Convergence Program for Spain, "Budget Consolidation Scenarios" were signed by the central government and each region. They specified the maximum deficit and debt permitted for each region. They were revised in 1995 and again in 1998 with the approval of the first Spanish Stability Program. The deficit and debt levels specified in the agreements are unknown to the public and no transparent sanctioning mechanism exists.

Italy also went through a process of decentralization of government in the 1990s, which has extended the powers and functions of the regions substantially. Subnational governments are subject to borrowing limits, but in the 1980s and early 1990s regional and local spending regularly exceeded the budgeted amounts, resulting in bail-outs provided by

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[12] The agreement of 1996 actually did not establish a deficit limit for the federal government due to time restrictions (Stienlet 2000:228)

[13] The following is based on Gordo and Hernández de Cos (2000) if not indicated otherwise.

[14] The Council, composed of the Minister of Economy and Finance and of General Government as well as regional Ministers of Finance, was set up in 1980 to act as a consultative and discussion body for tasks relating to the co-ordination of the regions' financial activities. (Gordo & Hernándes de Cos 2000)

the national government (Bordignon, 2000). In the 1990s, the financial situation of the regions was strengthened by assigning them more and better sources of taxation. In 1999, a "Domestic Stability Pact," a euphemism for a central government law, was enacted, which imposes ceilings for the annual increase in subnational government deficits (Balassone et al, 2002). However, the deficit referred to in the Pact does not include health, capital, and interest spending, and overruns can be compensated in subsequent years. Amendments of the 1999 act have retroactively permitted larger deficits than originally foreseen.

In Germany, the largest federal state in the EU, fiscal coordination between the central and the Land governments operates through the "Financial Planning Council" (Finanzplanungsrat). The Council is chaired by the Federal Minister of Finance and has the task of reconciling federal and state fiscal policies with a view towards a consistent fiscal stance for the entire country. The Council, however, has never played an important role in practice; its authority is limited by the constitutional rule that the federation and the states are independent in budgetary matters. In the context of this Council, the federal government and the states affirmed their joint responsibility for reaching the fiscal targets and their commitment to balancing the budget in the Spring of 2002, following Germany's difficulties with keeping to its Stability Program.[15] This was presented as a domestic stability pact and acclaimed as such by the European Commission (Commission, 2002). The agreement commits the Land governments to limiting the growth of nominal spending in 2003 and 2004 provided that real economic growth be sufficiently strong, a rather unrealistic condition for Germany. The experience of the Council, however, leaves no doubt that it has no serious policy implications.

In sum, efforts to decentralize the deficit limits of the Maastricht Treaty and share them between central and regional governments have not gone very far. Imposing strict, annual deficit rules on regional governments is problematic from an economic perspective anyhow, since regional tax bases are often more cyclical and volatile than national tax bases. To the extent the regional spending and revenue shocks offset each other, imposing strict limits at the regional level also makes little sense. In the end, national governments have to bear the consequences of the agreements at the European level.

3. Fiscal Performance Since the Start of EMU

3.1. Fiscal Policy Stance

As noted above, the EU countries enjoyed a decline in their debt ratios since 1997. With the exception of 2001, the same years, however, were also period of relatively strong growth in

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[15] see "Bund, Länder und Kommunen einigen sich auf nationalen Stabilitätspakt." Regierung online 21. 3. 2002.

Europe. Since the fiscal performance is measured in terms of debt and surplus ratios relative to GDP, it is not clear to what extent the observed reductions in government debt and deficit ratios can be attributed to government policy as opposed to windfall gains from strong economic growth. In this section, we assess the recent performance trying to separate policy from the effects of growth.

Separating the two requires some assumption about the contribution of growth to the deficit ratio. To do this, we use a simple method of growth accounting. For each year, we estimate the change in the government surplus ratio due to economic growth and a "neutral" policy. Subtracting the two from the observed change in the surplus ratio gives us an estimate of the active policy stance. [16]

Let the primary surplus ratio, s_t , be

$$s_t = \frac{R_t - G_t}{Y_t} = (r_t - g_t),$$ (1)

where R denotes government revenues, G non-interest government spending, and Y GDP. The change in this ratio over time then is

$$\Delta s_t = \frac{\Delta R_t - \Delta G_t}{Y_{t-1}} - \frac{\Delta Y_t}{Y_{t-1}}(r_t - g_t),$$ (2)

where r=R/Y, and g=G/Y. We define a "neutral" fiscal policy as one that keeps the average tax rate, r, and the ratio of government spending to trend GDP constant. With this definition, the contribution of the neutral policy to the change in the surplus ratio is

$$\Delta s_t^N = \frac{\Delta Y_t}{Y_{t-1}} r_{t-1} - \left(\frac{\Delta Y}{Y}\right)^{trend} g_{t-t}.$$ (3)

The contribution of economic growth to the change in the surplus ratio is defined as

$$\Delta s_t^G = g_t \left[\frac{\Delta Y_t}{Y_{t-1}} - \left(\frac{\Delta Y}{Y}\right)^{trend}\right].$$ (4)

This is the change that would occur in addition to the neutral change, if the government simply allowed economic growth above or below trend to change the expenditure ratio. We estimate the trend growth rate as the average real growth rate during the 1990s. Using these definitions, we obtain the policy-induced change in the surplus ratio as

$$\Delta s_t^P = \Delta s_t - \Delta s_t^N - \Delta s_t^G.$$ (5)

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[16] Alternatively, one might base similar calculations on the OECD's cyclically adjusted budget balance and the OECD's estimates of changes in structural balances. These estimates, however, are based on past data and policies in the 19870s and 1980s. If the 1990s brought a change in the fiscal policy regime in Europe, they could be quite misleading.

We use this part as our indicator of fiscal policy stance, since it measures the active contribution of any policy actions to observed changes in the surplus ratio. Table 2 has our calculations for the years from 1998 to 2001. Columns labelled "observed" give the raw changes in surplus ratios, while columns labelled "policy" give the estimated policy stance from equation (5). Since the decision on EMU membership was taken in 1998 on the basis of fiscal data for 1997, 1998 was the first year after 1992 in which the governments of the EMU member states were no longer under the risk of not making it into the monetary union due to excessively lax fiscal policies. In the table, a negative number indicates a fiscal expansion, a positive number a fiscal contraction.[17]

The table bears a number of interesting observations. The first is that on average, the EMU average policy stance was expansionary in 1998 and 2000 and neutral in 1999 and 2001, despite the weaker economic performance of that year.

Table 2: Fiscal Policy Stance 1998-2001

Country	1998	1999	2000	2001
B	0.5	-1.3	-1.5	0.8
D	0.4	0.7	-1.1	-0.4
EL	0.2	-0.2	-1.1	-1.6
E	-1.2	-0.4	-0.9	0.0
F	-1.4	-0.3	-1.2	-0.3
IRL	-1.0	-3.8	-1.4	-3.5
I	-1.8	-0.3	-1.5	0.0
L	-0.5	-0.4	-0.4	-1.0
NL	-1.4	0.0	-0.2	-0.4
A	-1.9	-0.6	-0.0	2.6
P	-1.9	-0.7	-0.1	-0.2
FIN	-1.3	-2.1	1.1	-1.0
DK	0.0	1.2	-2.0	1.7
S	0.6	-4.7	-0.6	0.8
UK	1.9	0.2	-0.3	-1.0
EMU	-0.9	-0.1	-1.4	-0.1

Source: Own calculations.

The second observation is that "consolidation fatigue" – the loss of political interest in pursuing further consolidations - emerged in many countries in the first year after the threat

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[17] See Hughes Hallett, Strauch, and von Hagen (2000), and Hallerberg, Strauch and von Hagen (2001, 2002) for similar calculations and results.

of not making it to EMU membership had disappeared. The (non-weighted) average fiscal impulse among the EMU member countries in 1998 was –1.1 percent of GDP, with a standard deviation of the mean of 0.25. This compares to an average fiscal impulse in all other country-years of –0.5 percent of GDP with a standard deviation of 0.19. The t-test for equal means yields a statistic of t=-3.7, which indicates that the 1998 fiscal impulses were significantly more expansionary among the EMU member states. Thus, these countries used the first opportunity to relax fiscal policies, and this although 1998 was a year of relatively strong economic growth. Interestingly, the countries that did not join EMU in 1999, Denmark, Greece, Sweden, and the UK all maintained tight or contractionary fiscal policies in 1998.

The third observation from this table emerges from considering the election dates in European countries in recent years. If governments use fiscal policies to improve their chances for reelection, one should expect fiscal expansions in the year preceding the election. Table 3 indicates which years were pre-election years in which EU country. Here we count both parliamentary and presidential elections where applicable.

Table 3: Preelection Years in EMU

Pre-election Year	1998	1999	2000	2001
Country	Austria, Belgium, Finland, Luxembourg, Portugal	Spain, Finland, Greece	Denmark, Italy, Portugal, UK	Germany, France, Portugal,Netherlands,Ireland, Sweden

Collecting the data from these country-cases, we find that the (unweighted) average fiscal impulse in pre-election years is –0.88 percent of GDP, with a standard deviation of the mean of 0.25. The average fiscal impulse in all other country-year cases is –0.49 percent of GDP with a standard deviation of the mean of 0.2. The t-test for the difference between the two averages is t=-2.5, which is significant at conventional levels. Thus, the data indicate that the fiscal strictures of the EDP and the SGP do not prevent governments from using fiscal policies to pursue electoral interests. Our estimates confirm similar results in Hallerberg, Strauch and von Hagen (2001), who use a somewhat different methodology.

3.2. Patterns of Fiscal Adjustment in EMU

In this section, we characterize the patterns of fiscal adjustment and growth observed among the EU countries since the introduction of the euro. A rapidly growing literature has recently shown that the success of fiscal consolidations depends critically on the form of the budgetary adjustments undertaken. In this literature, success typically refers to the longevity of the fiscal consolidation: Consolidations are deemed successful, if the reduction in the

public sector deficit ratio does not vanish soon.[18] A key finding of this line of research is that consolidations are more likely to be successful, if they rely primarily on spending cuts rather than raising additional revenues. Within the broad category of spending, cuts in transfers and public sector wages make consolidations more likely to be successful, while cuts investment spending reduce the likelihood of success. Such results, which have been confirmed for very different time periods and groups of countries, can be interpreted as saying that consolidations are more likely to be successful if the governments are willing to address sensitive political issues and choices.

A related issue on the European agenda is the call for an improvement of the "quality" of public finances first formulated by the European Council of Lisbon in 2000. Without defining precisely what the "quality" of public finances means, the Council recognized that the structure of public spending and taxation has important consequences for economic growth. Thus, the Council called upon the EU member states to aim at a more growth-friendly structure of public finances. Endogenous growth theory broadly suggests that a shift from taxing factor incomes to taxing consumption and a shift from public consumption and transfer spending to public investment has positive growth effects (Aghion and Howitt, 1998). Empirical results in this area are mixed, but they suggest that fiscal policies do have effects on growth.

Thus, the pattern of fiscal adjustment seems to matter from a macro economic perspective. Subsequently, we characterize the fiscal policies of EMU member states to assess the strength of this conjecture. We do this with a series of cross section regressions focusing on the period since 1997. While the cross sections have obvious data limitations, the following bits of evidence add up to a picture that underscores the importance of the structure of fiscal adjustments and taxes and spending more generally. To facilitate reading the following figures, note that an R-square of 0.20 in the following regressions corresponds to the 10 percent critical value, and an R-square of 0.26 to the five percent critical value of the F-distribution of a test for statistical significance.

We start by noting that the fiscal rules of the EDP and SGP focus on a reference value for public debt relative to GDP. For countries with ratios exceeding the critical limit, there are two ways to reduce it, by slowing down the growth of nominal debt or by speeding up the growth of GDP. Since inflation is no longer under the control of domestic monetary policy, the latter is equivalent to speeding up real GDP growth. A first question we look at considers the choice of the EMU government between these two options.

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[18] e.g. Perotti et al. (1998); Strauch and von Hagen (2001); von Hagen, Hughes Hallett and Strauch (2002)

Let d = B/Y be the ratio of public debt, B, to GDP, Y. The relative contribution of growth in public debt and growth in real GDP to the change in this ratio in country i can be written as

$$C_t = 100(\frac{1+b_i}{1+g_i} - 1),$$
(6)

where b is the growth rate of nominal debt and g is the growth rate of real GDP. If $C_i > 0$, the growth of public debt contributed more to the change in the debt ratio than the growth of real GDP, otherwise, real GDP growth dominated.

Figure 1 shows a plot of C_i against the real growth rates of the EU countries for two time periods, 1992-97 and 1997 – 2001. Positive values on the x-axis indicate that the change in the debt ratio during the period considered was due to growth rates of public debt in excess of the growth rate of real GDP. This was true in almost all EU countries in the first period. In contrast, public debt grew less than real GDP in all countries since 1997. Significantly, the figure also shows a strong correlation between the average real GDP growth rate over the post-1997 period and the relative contribution of GDP growth to the change in the debt ratio. Such a relationship did not exist in the first half of the 1990s.

Figure 2 gives a plot of the relative contributions of debt and real GDP growth against the change in the debt ratio during the period under consideration. In the earlier period, when debt ratios increase, this was due to debt growing much faster than real GDP. In the later years, however, the pattern is reversed. Countries that achieved a large decline in the debt ratio are countries that achieved high real GDP growth rates relative to the growth rate of debt over this period. Countries that achieved little real growth relative to debt growth also did not manage to reduce their debt ratios significantly. The figure thus suggests that a successful strategy to reduce the debt ratio is one that focuses on growing out of the debt burden rather than one that focuses on slowing down the growth rate of debt while neglecting economic growth. Taking figures 1 and 2 together, a clear message emerges. Without reviving economic growth, a significant reduction in the debt burden is unlikely. Taking the two periods together, another message is that rising debt burdens come from a lack of control over public sector debt. But to reduce an excessive debt burden, controlling debt is only a necessary condition. Without reviving economic growth, a significant decline in the debt burden seems unlikely. This suggests that the fiscal framework of EMU is ill conceived. The focus on deficits and debt growth alone would be justified if EMU had started in a period in which public debt burdens could be regarded as compatible with long run equilibrium. Given that a reduction in the debt burden is necessary particularly in the large countries, the policy framework pays too little attention to the role of economic growth in achieving sustainable public finances.

Next, we turn to public sector revenues and spending. In figure 3, we look at the relative contributions of debt and real GDP growth to changes in the debt ratio together with the changes in a number of fiscal indicators. In this figure, "revenue" and "total spending" refers to the ratios of public sector revenues and expenditures to GDP; "social transfers" and "investment" relates to the shares of transfers to households and total capital expenditures in total spending. The figure plots the changes in these indicators over the 1997-2001 period for the EU countries. The figure shows, first, that countries where expenditure and revenue ratios fell during this period are countries that achieved a larger contribution of economic growth to the change in the debt ratio, hence a larger reduction in the debt ratio. The R-squares of 0.36 and 0.45 indicate that these relations are statistically significant. Importantly, this suggests that a strategy of raising tax rates to increase revenues is unlikely to succeed in reducing an excessive debt burden, because it slows down economic growth. This is the German predicament of fiscal policy after 1994. Repeated increases in tax rates only resulted in ever less growth, with the result that Germany did not manage to get close to budget balance nor to reduce its debt burden sufficiently.[19]

The same figure also points to a critical role of investment spending and spending on social transfers. Countries that increased the share of investment spending tended to achieve a stronger contribution of GDP growth to the reduction in the debt burden, while the opposite is true for countries that increased the share of social transfers in total spending. We look at this issue n more detail below.

In Figure 4, we look at the tax burden and the composition of revenues. The figure plots the change in the tax burden and the change in the share of direct taxes in total revenues against the growth rate of real GDP. Direct taxes include social security charges on labor. We take direct taxes as rough proxies for the average tax rate on factor incomes. The figure shows that an increasing share of taxes on factor incomes goes along with a falling growth rate in this sample. Furthermore, a higher total tax burden in the economy goes along with a lower growth rate.

In Figure 5, we look at the composition of total government spending in connection with the average real GDP growth rate of the EU countries in 1997-2001. The figure shows a strong association of higher shares of public investment and real GDP growth. Clearly, this correlation must be regarded with some caution, as public investment is not a very clear concept in practice.[20] Furthermore, the direction of causality might be that countries enjoying exogenously low growth rates cut public investment first, as political opposition against cutting transfer spending is more powerful than political opposition against cutting spending

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[19] For a detailed account of German fiscal policy in the 1990s see Strauch and von Hagen (1999).

[20] For example, teacher salaries, which should be regarded as part of public investment in human capital, are counted as public consumption, and there is no consideration of the productivity of the investment projects on which public funds are spent.

on public infrastructure etc. In fact, such political economy effects may be particularly large under the conditions of the EDP and the SGP, when governments are forced to cut public spending quickly to avoid violating the numerical constraints. Still, one would have to assume that public investment has no positive effect on growth at all to argue that this would not eventually lead to lower growth rates. The same figure also suggests that higher shares of transfer spending in total spending go together with lower rates of growth, although this relation is only marginally statistically significant.

Finally, in Figure 6, we look at the correlation between fiscal consolidation and real GDP growth. We do this by plotting the growth rate of public debt together with the growth rate of real GDP for the two time periods, 1992-97 and 1997-2001. The figure and the two regressions indicate that there is no significant correlation between these two. High growth rates of public debt in the early period apparently did nothing to stimulate economic growth, and lower growth rates in the latter period did not reduce growth. Nor does the figure give much credence to the concept of "non-Keynesian" effects of fiscal consolidations, i.e., the notion that a reduction in public debt would have positive growth effects by stimulating private investment and consumption (Giavazzi and Pagano, 1990). Such effects would lead us to expect higher growth rates for those countries where public debt actually shrank in the period under consideration. Obviously, the present bivariate framework is not sufficient to achieve a strong conclusion on this matter. Nevertheless, it is in line with the results from a larger econometric model presented in Hughes Hallett, Strauch and von Hagen (2001), which do not indicate "non-Keynesian" effects of the fiscal consolidations in Europe in the past decade. In passing, we note that our evidence here points to a methodological problem of earlier studies of such effects. Specifically, most studies identify fiscal consolidations as periods of significant reductions in public debt or deficit ratios, and "non-Keynesian" effects as episodes where consolidations go along with vigorous economic growth. The European experience suggests that such episodes may have more to do with policies that succeeded in stimulating growth by restructuring public spending and taxation and reducing tax burdens than with a reduction in public debt or deficits.

We can summarize the evidence from this section by pointing out the emergence of two alternative strategies of fiscal adjustment in EMU, represented most clearly by two groups of countries; see Table 4. On the one hand, there is a low-growth group of countries consisting of Germany, France, Italy and Austria. On the other hand, there is a high-growth group consisting of Ireland, Finland, Spain, and Greece. Low-growth countries have relied relatively much on stabilizing the growth of public sector debt to achieve the targets under the SGP, while high-growth countries have relied mainly on achieving strong economic growth. Clearly, the second group has been much more successful in moving towards sustainable public finances than the first group. The first group is also characterized by

relatively small achievements in reducing tax burdens and by low and stable ratios of public investment. In contrast, the high-growth group, with the exception of Greece, has reduced their tax burdens and shifted government spending from welfare to public investment. Among the remaining countries, the Netherlands achieved an average growth rate of 5.3 percent and reduced its debt burden by almost 21 percent, relying much more strongly on growth than the low-growth group. Belgium, with a real growth rate of 3.9 percent and a reduction in the debt ratio of 23.4 percent follows a similar pattern. Portugal is more exceptional, as it achieved a relatively high growth rate of 5.3 percent, but reduced its debt ratio by no more than 8 percent.

Finally, it is interesting to observe that the non-EMU countries, Denmark, Sweden, and the UK look much more like the high-growth group in EMU during this period of time. The two Scandinavian countries in this group, however, reduced the share of public investment in total spending.

Table 4: Patterns of Fiscal Adjustment

	Real Growth	Change in B/Y	Relative Contribution of Debt and GDP Growth	Change in Share of Transfers	Change in Share of Investment
Low Growth	2.8	-6.8	-7.6	0.6	0.8
D	2.3	-2.5	-4.0	0.0	0.7
F	2.3	-3.9	-6.4	0.2	0.5
I	3.1	-16.2	-12.9	1.0	0.4
A	3.3	-4.7	-7.0	0.6	1.4
High Growth	7.8	21.8	28.2	-1.5	4.0
Ire	12.6	-38.5	-51.3	-2.8	6.0
SF	6.2	-15.2	-25.5	-1.4	0.4
EL	6.7	-20.0	-16.7	-1.1	8.4
E	5.6	-13.6	-19.3	-0.7	1.2
Non-EMU	4.0	-18.3	28.3	-0.3	-0.3
DK	3.4	-19.9	-30.3	-0.9	-0.5
S	4.3	-19.9	-26.3	0.6	-0.6
UK	4.4	-15.1	-27.8	-0.6	0.8

4. Conclusions

The institutional framework for fiscal policies in EMU have come under considerable stress during the past year. The experience so far suggests, that the rules of the EDP and the SGP work most effectively in the small EMU states, but they do not seem to achieve much in the

way of imposing fiscal discipline on the large states. In addition, the experience of the early years of EMU suggests a considerable amount of consolidation fatigue and that governments have not been kept from using fiscal policy to support electoral interests.

The experience of the early years also clearly indicates that the main condition for achieving a sustainable reduction of the debt ratio is to achieve a sufficiently large rate of trend real growth. Fiscal policy can support that by lowering the tax burden on factor incomes and by shifting expenditures from transfers to public investment.

Do these results matter for EMU? After all, one might argue that the stability of the common currency depends only on the stability of public sector debt ratios. How this stability is achieved, might be left to the choice of the individual member states. The subsidiarity principle of the Treaty on European Union would then suggest that the EU should not interfere with these choices.

There are, however, at least two counterarguments to this. The first is that, if Europeans truly believe that public debt ratios must be low and sustainable, success in achieving this matters and is a valid concern for the Union. In view of the changing age structure of the European populations and the resulting weakness of most public pension schemes, debt ratios will have to decline further to achieve sustainable public finances. From this perspective, the current fiscal framework is incomplete, because it does not give EMU member states enough guidance for the choice of a successful fiscal strategy. Countries should be encouraged to adopt more growth-friendly policies by restructuring their tax and expenditure systems.

Second, it is necessary to recognize that EMU did not start under conditions of a long-run equilibrium as far as public finances are concerned. The low growth rates in Germany, France, and Italy in particular are the result of overregulated economies plagued by high tax burdens and welfare systems that discourage employment. The narrow focus of the EDP and the SGP on annual deficits, however, may keep governments from adopting reform policies that might result in larger deficits initially before the desired growth and employment effects kick in. If so, the current design of the fiscal strictures risks keeping these countries in a state of low-growth with insufficient progress also as regards the reduction of debts and deficits. One may reasonably doubt that these large EMU states will continue to tolerate such a scenario, which is perceived as keeping them from adopting better economic policies for the sake of some fiscal targets imposed by the EU. The recent episodes involving France and Germany clearly indicate that they will not. But if the outcome were that these countries simply begin to ignore the goals of the EDP and the SGP, other states would follow and the fiscal framework of EMU would fall apart. A redesign of this framework to account for the circumstances of the large states seems necessary to avoid such a development.

The fiscal framework of EMU needs improvements taking these insights into account. Specifically, a revision of the SGP should aim at two things. One is to allow more flexibility with regard to the short-run fiscal flows. The other is to strengthen the surveillance and monitoring procedures. Fiscal performances should be monitored and commented on frequently by an institution independent from the governments and the European Council. Earlier, we have proposed the creation of an independent fiscal stability council for this purpose (von Hagen and Harden, 1994; Eichengreen, Hausmann and von Hagen, 1999). An obvious alternative candidate would be the European Central Bank.

References

Balassone, Fabrizio, Daniele Franco, and Stefania Zotteri (2002), Fiscal Rules for Sub-national Governments: What Lessons for EMU Countries? Mimeo, Banca d'Italia Research Department, Rome

Aghion, Philippe, and Peter Howitt (1998), *Growth Theory*. Boston: MIT Press

Beetsma, Roel (2001), "Does EMU Need a Stability Pact?" in: Anne Brunila, Marco Buti and Daniele Franco (eds.), *The Stability and Growth Pact*. Houndsmill: Palgrave

Buti, Marco, Daniele Franco and Hedwig Ongena (1998), "Fiscal Discipline and Flexibility in EMU: The Implementation of the Stability and Growth Pact." *Oxford Economic Review* 14, 3, pp 81-97

Buti, Marco, and André Sapir (1998), *Economic Policy in EMU*. Oxford: Oxford University Press

Bordignon, Massimo (2000)

Cashin, P, (1995), "Government Spending, Taxes, and Economic Growth." IMF *Staff Papers* 42, 237-69

Delors Report (1989), Report on Economic and Monetary Union in Europe. Committee for the Study of Economic and Monetary Union, Luxembourg: Office for Official Publications of the EC.

Easterly, William, and Sergio Rebelo (1993), "Fiscal Policy and Economic Growth: An Empirical Investigation." *Journal of Monetary Economics* 32, 417-58

European Commission (2000), *Public Finances in EMU 2000*. Brussels

European Commission (2002), Coordination of Economic Policies in the EU: A Presentation of the Key Features of the Main Procedures. *Euro Paper* 45, DG ECFIN

Fölster, Stefan, and Magnus Henrekson (1999), "Growth and the Public Sector: A Critique of the Critics." *European Journal of Political Economy* 15, 337-58

Fuller, Thomas (2002), "Rift widens on EU deficits." *International Herald Tribune* 26 September 2002

Gemmel, Norman, and Richard Kneller (2002), "Fiscal Policy, Growth and Convergence in Europe." European Economy Group working Paper 14/2002, University of Madrid.

Giavazzi, Francesco, and Marco Pagano (1990), "Can Severe Fiscal Contractions be Expansionary?" *NBER Macroeconomics Annual* 75-116

Harden, Ian J., Robert Brookes, and Jürgen von Hagen (1995), "How to Avoid Consolidation Fatigue." *European Brief* 3:2, 26-29

Hallerberg, Mark, Rolf Strauch, and Jürgen von Hagen (2001), "Forms of Governance and the Design of Fiscal Rules in the EU Countries 1998-2000." Mimeo, ZEI University of Bonn

Kneller, Richard (2000), "The Implications of the Comprehensive Spending Review for the long-run growth rate: A view from the literature." *National Institute Economic Review* 171, January, 94-105

Kneller, R., M. F. Bleaney, and N. Gemmel (1999), "Growth, Public Policy, and the Government Budget Constraint: Evidence from OECD Countries." *Journal of Public Economics* 74, 171-90

Perotti, Roberto, Jürgen von Hagen, and Rolf Strauch (1998), Sustainability of Public Finances London: CEPR

Sargent, Thomas, and Neill Wallace (1981), "Some Unpleasant Monetarist Arithmetic." Federal Reserve Bank of Minneapolis *Economic Review*

Stark, Jürgen (2001), "Genesis of a Pact." In: Anne Brunila, Marco Buti and Daniele Franco (eds.), The Stability and Growth Pact. Houndmills: Palgrave.

Strauch, Rolf, and Jürgen von Hagen (1999), "Tumbling Giant. Germany's Experience With the Maastricht Criteria." In

Strauch, Rolf, and Jürgen von Hagen (2001) „Fiscal Consolidations: Quality, Economic Conditions, and Success." *Public Choice* 109, 327-46

Tanzi, Vito, and H. H. Zee (1997), "Fiscal Policy and Long-run Growth." IMF *Staff Papers* 44, 179-209

von Hagen, Jürgen (1992), "Fiscal Arrangements in a Monetary Union - Some Evidence from the US." in: Don Fair and Christian de Boissieux (eds.), <u>Fiscal Policy, Taxes, and the Financial System in an Increasingly Integrated Europe</u> Deventer: Kluwer Academic Publishers.

Figure 1: Fiscal Adjustment

$y = -0{,}1553x + 1{,}9591$
$R^2 = 0{,}481$

$y = -0{,}0204x + 1{,}7212$
$R^2 = 0{,}1429$

Real GDP Growth

Rel. Contribution of Debt and GDP

◆ 1997-2001 ■ 1992-97
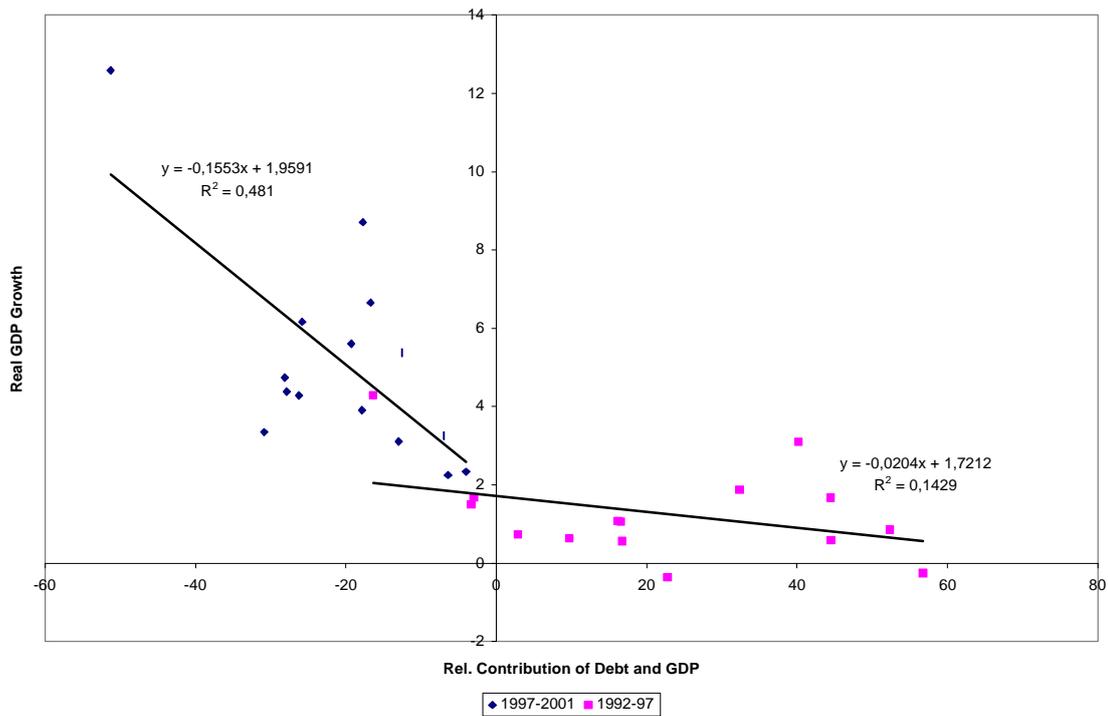
Figure 2: Change in Debt Ratio

$y = 0{,}4102x + 0{,}8444$
$R^2 = 0{,}6606$

$y = 0{,}6863x - 0{,}9152$
$R^2 = 0{,}7042$

Change in B/Y

relative Contribution

I 1997-2001 ■ 1992-97
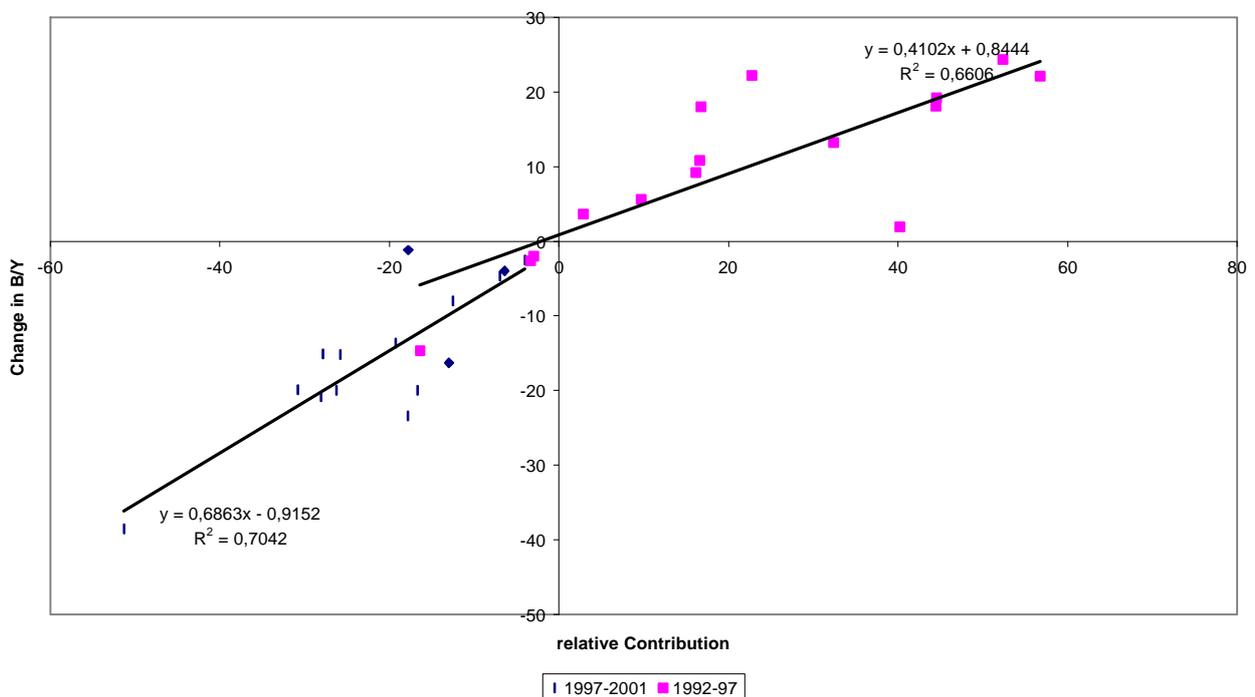
Figure 3: Fiscal Adjustments

y = 2,2731x - 13,656
R² = 0,2761

y = 2,4159x - 7,0251
R² = 0,3581

y = 5,9061x - 17,728
R² = 0,4534

y = 2,2731x - 13,656
R² = 0,2761

y = -1,3326x - 18,753
R² = 0,0939

Contribution B/Y

Change in fiscal indicator

| ◆ revenue | ■ investment |
| ✕ social transfers | ✳ total spending |
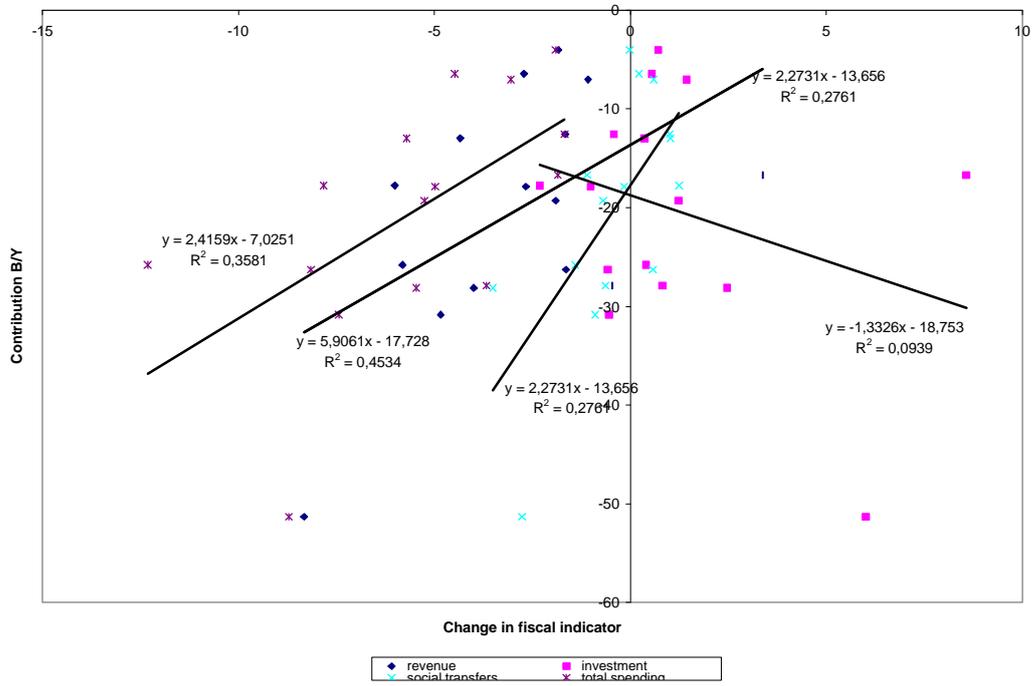
Figure 4: Revenue Structure

y = -0,3023x + 23,052
R² = 0,3078

y = -0,1925x + 14,317
R² = 0,2347

Real Growth Rate

Percent

| ◆ direct taxes in GDP | ■ share of direct taxes in total revenues |
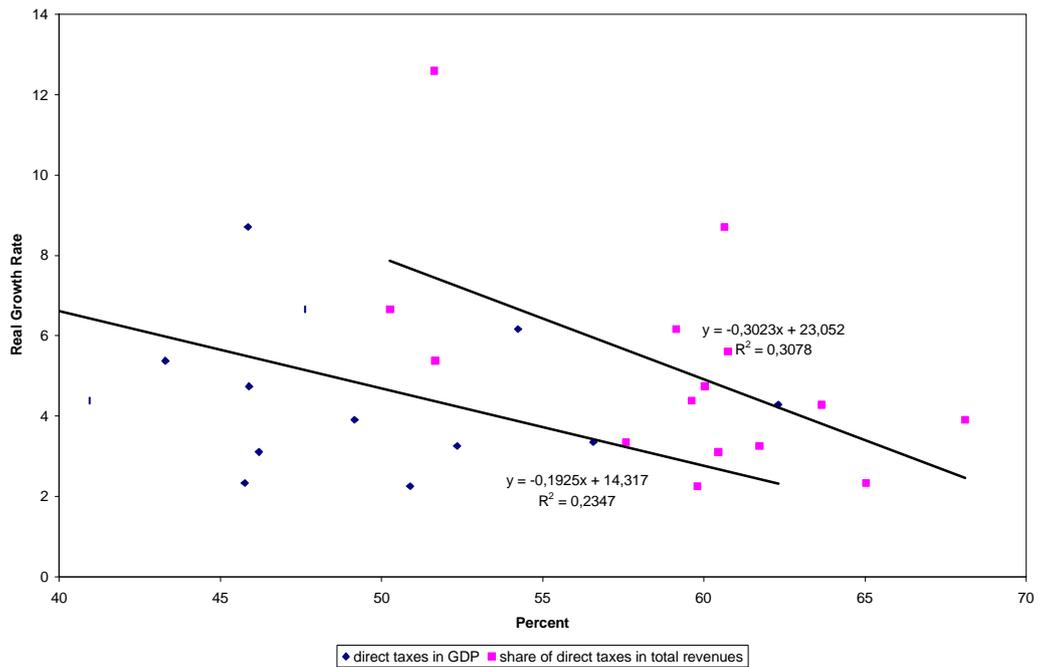
Figure 5: Spending Structure

$y = -0,2959x + 14,7$
$R^2 = 0,1885$

$y = 0,4546x + 1,1525$
$R^2 = 0,4408$

share of total spending

real growth rate

◆ investment ■ social transfers
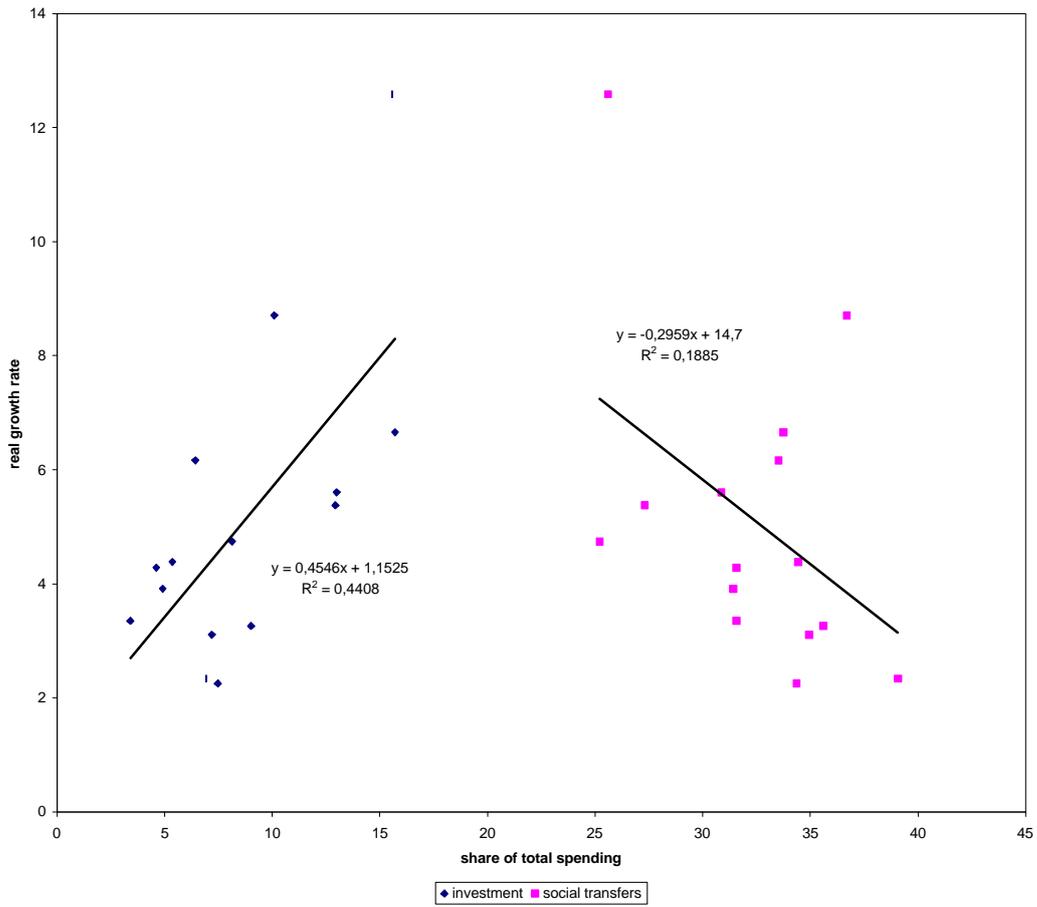
Figure 6: Fiscal Adjustment and Growth

$y = 0,117x + 4,9424$
$R^2 = 0,0165$

$y = -0,0861x + 1,997$
$R^2 = 0,0847$

real GDP Growth

Growth of Public Debt

❙ 1992-97 ■ 1997-2001
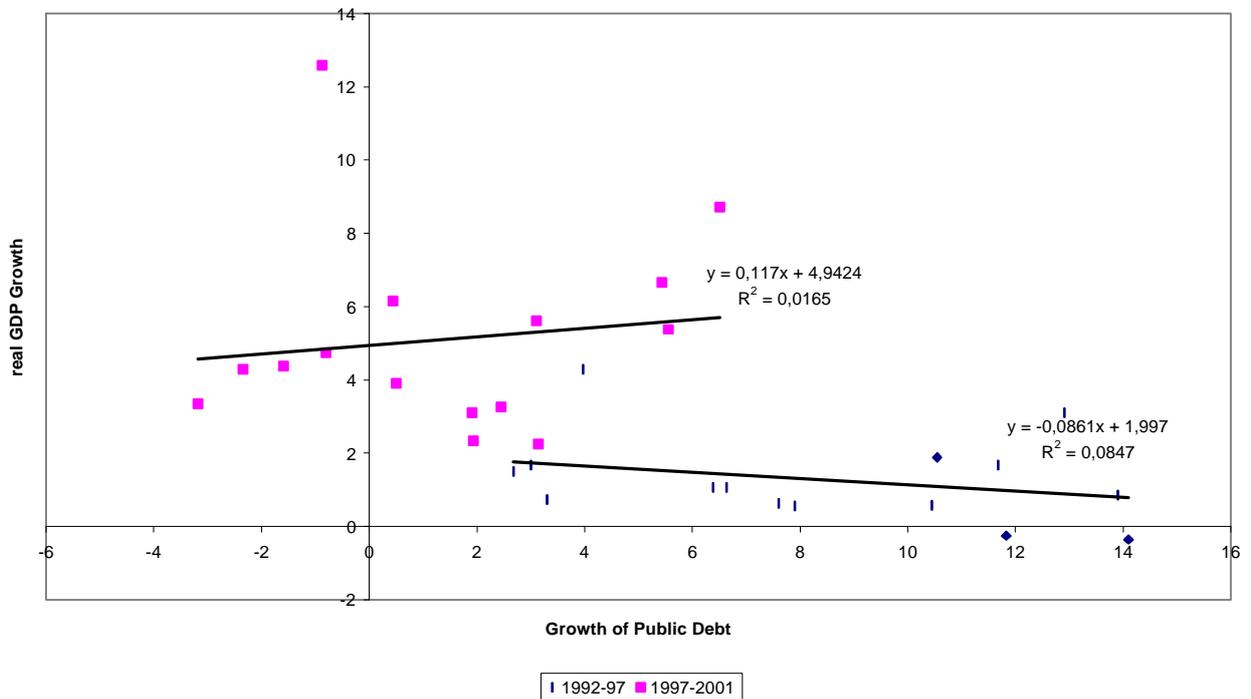
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