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The Challenges of Monetary Convergence in Europe

by Rainer Schweickert



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by Rainer Schweickert

May 1997

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ABSTRACT

The paper outlines the challenges for entry into EMU set up by Germany and the extent to which potential members accepted these challenges. Three groups of countries are identified: the core group (D-mark zone), the outsider group (countries not willing to participate), and the convergence group (formerly) unstable countries willing to participate). It is especially the progress towards convergence made by the convergence group and the non-compliance of most countries with the fiscal criteria which leads to uncertainty for the future path of European monetary integration: there is still no consensus on the interpretation of the convergence criteria. Additionally, there is another - maybe even more important - challenge for European monetary integration: the lack of a consensus about the blueprint for economic policy making in an European currency area - centralized versus decentralized, active versus passive monetary and exchange rate policy.

JEL-classification: F31, F41, O52.

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The Challenges of Monetary Convergence in Europe

I. INTRODUCTION*

The decision to speed up European monetary integration taken in Maastricht in December 1991 was primarily a political decision and came as a surprise to most economists. Certainly, the agreement on the conditions and the timetable for the transition from the European Monetary System (EMS) to an European Monetary Union (EMU) followed a period of exchange rate stability (Collignon 1994: 37-38). This period from 1987 to 1990 which is sometimes called 'hard EMS' was characterized by a narrowing of exchange rate bands to +/- 2.25 percent for the old members and the inclusion of new members (Spain (1989), United Kingdom (1990), Portugal (1992)) with a larger band of +/- 6 percent around the official ECU parity. But the discussion among economists was centered around the question whether or not the EU is an optimal currency area. The consensus that, if at all, this is the case only for a core group of countries was based on the reasoning that the elimination of the exchange rates has economic costs in terms of delayed real adjustment to changes in the economic environment differing between individual countries (Bean 1992: 33-38).

Interestingly, it was the real shock of German unification which made the Maastricht decision possible after all: the strategy of Germany to weaken political resistance against unification by fostering the process of European integration. Yet, Germany was prepared to surrender monetary sovereignty only under its own terms, i.e. a maximum of certainty on monetary stability in EMU. This political background explains why the conditions for EMU laid down in the

A former version of the paper has been contributed to a seminar on European Monetary Union convened by the Institute for European-Latin American Relations (IRELA) and the Inter-American Development Bank (IDB) in Barcelona, March 1997.

Maastricht Treaty are more about reducing the risk that the new European currency will become less stable compared to the D-mark rather than about reducing the costs of a common currency. It reflects the position of Germany to limit costs of losing one of its countries most valuable assets, i.e. its currency.

The paper outlines the challenges for entry into EMU set up by Germany and the extent to which potential members accepted these challenges. Chapter II will discuss how the German strategy to define a low-risk scenario for EMU resulted in the definition of convergence criteria and in the design of an independent European Central Bank (ECB). While these two aspects have already been included in the Maastricht Treaty, another one was added recently: the Stability Pact. Chapter III will then deal with the costs of a common currency. In an economic sense, possible costs are related to the concept of policy making in a monetary union. Given the fact that intra-union exchange rates will be fixed, there are basically only two policy instruments left for real adjustment: fiscal and labor market policy. In a political sense, EU countries have different positions and different strategies during the transition process which will lead to a different perception of the costs of becoming members of EMU. Based on the discussion of risks and costs, Chapter IV outlines transition scenarios with respect to membership and technical problems. Chapter V summarizes the results of the paper.

American (A. C.) (1988). (1988

I. The Convergence Criteria

The Maastricht Treaty maps out conditions and a timetable for the transition to monetary union (EMI 1996b). Four criteria have to be fulfilled on a sustainable basis for admitting a country to EMU (Article 109j):

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- 1. A consumer price inflation rate no more than 1.5 percentage points above the average for the (at most) three countries with the lowest inflation rates;
- Average nominal long-term interest rates no more than 2 percentage points above those for the (at most) three countries with the lowest inflation rates;
- 3. Participation in the EMS under normal bands and no exchange rate realignments for at least two years:
- 4. A sustainable government financial position, defined as a general government deficit to GDP ratio no more than 3 percent and a gross debt to GDP ratio no more than 60 percent (with exceptions if an "excessive" deficit is temporary, or an "excessive" deficit and /or debt ratio is declining at a "satisfactory" pace).

The purpose of these criteria¹ is to prevent the union being destabilized by the premature admission of a country whose economic fundamentals are not yet compatible with a fixed exchange rate (Bean 1992: 44-45). Obviously, a central requirement then is that trend inflation rates are the same. The first three criteria are intended to ensure this, criterion 1 covering the recent past while rules 2 and 3 are intended to be more forward looking in nature. While the long-term interest rates are positively correlated with inflationary expectations, a recent devaluation can be expected to increase inflationary pressure in the near future.

Whether these criteria are sufficient is debatable, since convergence in long-term interest rates may simply reflect the credibility of the intention to move to monetary union, and therefore to lock future short-term interest rates in different countries even more closely together. Furthermore, even if inflation rates may have converged, the real exchange rate could still be some way from sustainable

¹ The Maastricht Treaty also has a lifth criterion which, however, is largely neglected in the discussion. Convergence should also be measured by the balance-of-payments situation, the integration of markets, unit-labor costs, and other price indices (real convergence).

levels. The criteria are also debatable because they will immediately lose their importance with the introduction of a new currency and because the irreversible fixing of the exchange rate against a stable anchor currency can be a highly efficient stabilization program (DeGrauwe 1994: 148-156). If this is the case, exante stabilization as required by the Maastricht criteria has economic costs for high inflation countries.

Alberta Line

Criterion 4, which is not a convergence criterion in the strict sense, is different to the extent that fiscal variables will matter also after monetary unification. The intention during the transition phase is to ensure that no country joins the monetary union when its public finances are in such a state that they might destabilize the monetary union. The general idea is that highly indebted member states may try to reduce the real debt burden by striving for a monetary policy in EMU which produces higher than expected inflation rates. For two reasons, criterion 4 is most hotly debated. First, it is the criterion which provides the largest room for interpretation. While there is now a consensus that with respect to criteria 1 and 2, the averages of the three countries with the lowest inflation rates should be used to calculate a reference rate and that participation in the EMS is easy to observe, the terms "excessive" and "satisfactory" are flawed by lack of a quantitative definition. Second, the so-called fiscal criteria are the ones which are likely to be missed by most countries.

Figures 1 to 4 show the process of convergence with respect to the inflation, interest rate and fiscal criteria from 1991 to 1996; Table 1 summarizes the results from the official convergence report from the European Monetary Institute (EMI 1996b updated with data from the annual report EMI 1997) based on data available up to September 1996 as well as the forecasts from the European Commission (EC 1996) and the OECD (OECD 1996) for 1997. Forecasts for 1997 are of

Table 1 - The Progress of Convergence

	Inflation rates (annual change, percent)			Long-term interest rates (percentage points)		Fiscal balance (percent of GDP)			Public debt (percent of GDP)			EMS Partici- pation
	1996 (EMI)	1997 (EC)	1997 (OECD)	1996 (EMI)	1997 (EC)	1996 (EMI)	(EC)	.1997 (OECD)	1996 (EMI)	1997 (EC)	1997 (OECD)	Jan. 1997
Belgium	1.8	2.1	1.9	6.5	6.2	5.3	-2.9	-2.9	130.6	1270	1212.	Y
Denmark	1.9	2.4	2.5	7.2	6.7	-1.4	-0.3	-0.4	70.2	67.8	70.4	Y
Germany	1.2	4.7	1.5	6.2	6.1	40-	-2.9	34	66.8	E619	0.3	Y
Greece	7.96	6.9	1.72	74.8		1094	26.5	4.57	10.6	100-2	11005	74 (0)
Spain	3.6	2.9	2.9	2.87	7.7	346	-3.0	-34	67.8	- 5 7.1	689.	Y
France	2.1	1.4	1.3	6.3	6.1	40:1	-3.0	92	56.4	58.1	56.6	Y
Irland	1.6	2.2	2.0	7.3	6.9	-1.6	-0.9	1.1	74.7	70.0	76.0	Y
Italy	220	2.9	2.5		7.7	66	2.3	-37	12374	1400.3	12200	Y
Luxembourg	1.2	2.1	1.8	6.3		0.9	0.5	-	7.8	8.8	_	Y
Netherlands	1.5	2.0	2.1	6.2	6.1	-2.6	-2.5	-2.3	78 7 7	76.8	760	Y
Austria	1.8	1.9	1.8	6.3	5 ,1 ·	43 *	-3.0	-3.0	71.7	72.2	723	Y
Portuga!	2.0	3.0	2.6	2.6		-4.0	-2.9	-2.9	701	69.0	676	Y
Finland	1.5	1.6	1.7	7.1	5.3	2.3	-2.2	-1.7	61/3	61,5	602	Y
Sweden	0.8	2.3	2. I	8.0	. 7.1	39	-2.9	-2.5	-781	77.6	76.5	
United Kingdom	29,	2.4	2.5	7.9	7.4	46.	3.5		56.2	57.0	56.5	10
Reference rate ^a	1.1a	3.1ª	3.0a	8,8a	7.8a	-3.0	-3.0	-3.0	60.0	60.0	60.0	Y

Source: EMI 1996b; 1997; EC 1996; OECD 1996; own calculations.

utmost importance because of the timetable for monetary unification. After the first possibility to start EMU was missed because the European Council of Heads of States or Government (henceforth: European Council) decided in 1996 that no majority of EU members has fulfilled the criteria, monetary union will start on January 1, 1999, with whatever states are eligible for membership. Therefore, the European Council has to take its final decision in early 1998 and the EMI will prepare the final convergence report based on actual data for 1997 at the beginning of 1998:² It is also of importance to include two sources for the forecasts because of political considerations. The EC is not neutral in the process but can be expected to have a pro-EMU position due to the fact of being an EU organization. In contrast, the OECD explicitly claims to be neutral with respect to European monetary integration.³

Tables 1 to 4 show that convergence measured by the individual criteria has been quite different since Maastricht. The inflation criterion is the one revealing the most clear cut trend towards convergence: the average for all 15 EU members (EU15) decreased constantly from 5.6 percent in 1991 to 2.4 percent in 1996. The most dramatic reductions in inflation rates can be observed with respect to the countries with the initially highest inflation rates (Greece, Portugal, Sweden, and the UK) and in Finland which became the country with the lowest inflation rate by 1996.

The picture for long-term interest rates is similar to the one for inflation rates concerning the general trend for lower interest rates. However, it differs in two

There will also be a report prepared by the EC. Both reports will be evaluated by the European Council of Ministers of Economics and Finance which, in turn, will forward a recommendation to the European Council of Heads of States or Government.

For the reason of non-comparability, the latest forecasts of the EC are not considered in Table 1 but mentioned throughout the text in the case that they differ from the results shown in the table.

respects. First, neglecting Portugal and Greece (not reported in Figure 2) which made the most pronounced progress towards lower long-term interest rates, the difference between the country with the highest rates (Italy) and the lowest rates (Luxembourg) hardly changed between 1991 and 1996. Second, the reduction of interest rates consistent with declining inflation rates was temporarily reversed during the years of the EMS crisis (except for Luxembourg).

The exchange rate crisis started with the devaluation of the Italian lira at September 14, 1992 and led to subsequent devaluations for the lira, the Spanish peseta, the Portuguese escudo, and the Irish punt as well as the demission of the lira and the British pound from the EMS and the abandonment of the ECU peg of Sweden and Finland. Finally, in order to prevent a devaluation of the French franc, the fluctuation bands were widened from 2.25 percent on either side of central parities to 15 percent in August 2, 1993. Obviously, the exchange rate crisis increased real interest rates until devaluation expectations were reduced by nominal devaluations. Since March 1995 when the Spanish peseta and the Portuguese escudo have been devalued, no changes in parities have taken place and exchange rate fluctuations calmed down. Consequently, long-term interest rates started to decline again in 1996 and Italy and Finland entered the EMS on the still generous terms of a 30 percent fluctuation band.

As a reflection of these facts, Table 1 reports that the state of and the perspectives for convergence with respect to the inflation and interest rate criteria are appropriate. Following the EMI convergence report, only Greece, Spain, Italy, Portugal, and the UK fail to meet at least one of both criteria. For 1997, both the EC and the OECD expect only Greece to report to high inflation and interest rates. Together with Sweden and the UK, Greece will also fail to meet

Figure 1 — Inflation Rates in the 15 EU Member States, 1991-1996 (annual change in percent)

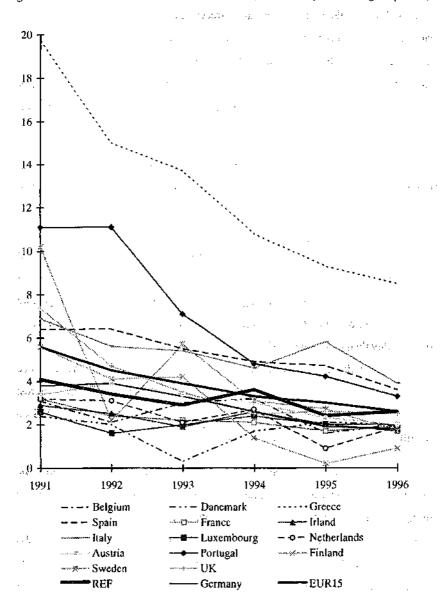


Figure 2 —Long-Term Interest Rates in the 15 EU Member States, 1991-1996 (percentage points)

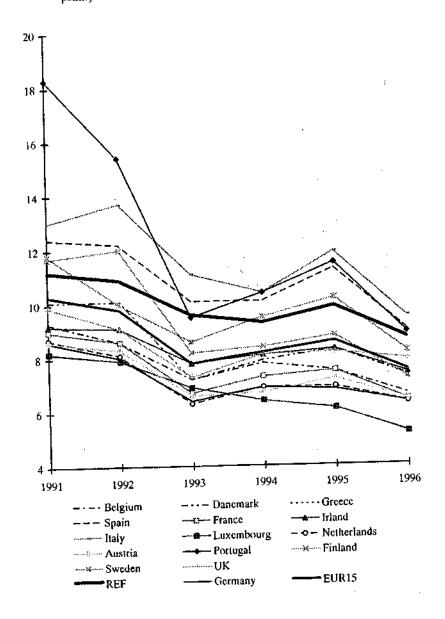


Figure 3 — Fiscal Balance in the 15 EU Member States, 1991-1996 (percent of GDP)

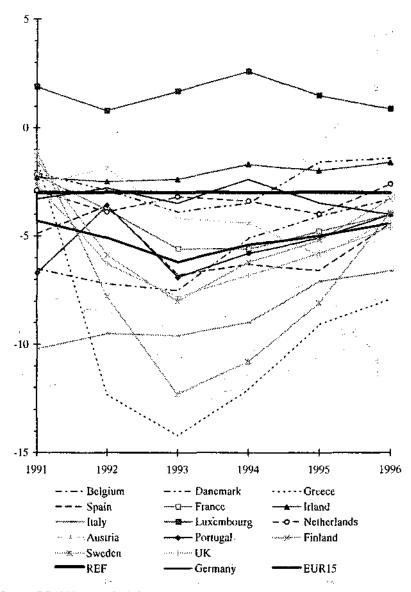
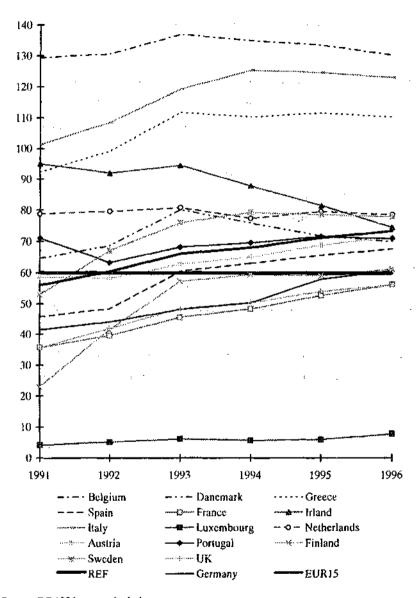


Figure 4 -- Public Debt in the 15 EU Member States, 1991-1996 (percent of GDP)



the exchange rate criterion because these three countries still do not participate in the EMS.⁴

Contrary to progress on the inflation and exchange rate front, fiscal indicators did not show a clear trend towards fulfilling the criteria. Figure 3 shows that fiscal balances rather deteriorated until 1993. Obviously, the EMS crisis led to a new policy scenario. Three explanations are at hand. First, the long period of absence of an exchange rate crisis in the EMS may have led to an attitude of looking at the agreement on building a monetary union as a self-fulfilling prophecy. Second, the countries with an initial deficit less than 3 percent may have thought that higher deficits would help to end the recession soon and would be easy to reduce afterwards. Third, countries with a high level of indebtedness may have thought that the criteria would not be interpreted in a strict sense if most countries would fail to meet them. None of these expectations has materialized and the trend towards higher fiscal deficits has been reversed since 1994 when it turned out that the anchor currency country Germany insisted on taking the fiscal deficit criteria very seriously. The most prominent examples of this general trend are Sweden and Greece. The most prominent exceptions being Luxembourg and Ireland with a permanent surplus, Germany which showed increasing fluctuations around the 3 percent rate, and Italy which permanently reduced the deficit starting from a very high level.

According to the Treaty, EMS participation under "normal conditions" is required for the last two years before the decision on EMU is taken. Therefore, the entry of Italy and Finland into the EMS in late 1996 would have been too late. However, the political reactions to these events seem to indicate that the exchange rate criterion will be interpreted in the sense that participation with wide bands and for two years before the start of EMU may be sufficient to fulfill the criterion.

The comparison between Figures 3 and 4 reveals that lowering fiscal deficits has not been large enough to achieve a lower level of public indebtedness. Italy exemplifies the lagged impact of an improvement in the current fiscal situation on the level of indebtedness. While the deficit decreased from 10.2 in 1991 to 6.6 percent of GDP in 1996, indebtedness increased from 101.4 to 123.4 percent of GDP. Only if the primary fiscal surplus (fiscal balance before interest payments) is sufficient to reduce the debt stock significantly and the interest burden decreases, fiscal consolidation can gain pace. This is demonstrated by the cases of Denmark and Ireland. These two countries have already been marked as cases of sufficient adjustment by both the EC and the EMI which means that although public debt is significantly above 60 percent of GDP the reduction of the debt ratio shows a sustainable convergence towards the reference rate.

Table 1 also reflects the rather slow progress of convergence with respect to the fiscal criteria. Only Denmark, Ireland and Luxembourg are likely to fulfill both criteria in 1997. According to EC projections France could be added to the list and Germany and Spain would at least fulfill the deficit criterion. However, the figures for the 1997 deficits of 2.9 and 3.0 percent respectively give the impression that these estimates contain at least some wishful thinking.⁵ It has also to be considered that more and more countries switch to the art of "creative" bookkeeping: France counts a one-time transfer of cash from France Télécom to the government (0.5 percent of GDP), in exchange for the company's pension liabilities to be covered by the slate, Italy collects an "euro tax" (0.6 percent of GDP), which is to be partially refunded in future years, and Austria privatizes public debt by shifting it to quasi-fiscal budgets (about 4.5 percent of GDP)

⁵ The latest EC projections are even more optimistic: the UK is expected to keep its deficit below 3 percent (2.9); Finland is expected to reduce its indebtedness to a ratio below 60 percent of GDP (59.2). Moreover, Finland together with the Netherlands are proposed to be skipped from the list of countries with excessive deficits (Europe, No. 6961 (N.S.)).

according to opposition parties). At the same time, other countries like Portugal, Spain and Belgium resort to the short-term measure of privatizing public assets (Focus 25/11/96; the Economist 30/11/96). To sum up, only Luxembourg fulfills the criteria without any doubt, while Denmark and Ireland fulfill the criteria only due to sufficient adjustment. All other countries miss at least one precondition for EMU membership.

2. The European Central Bank (ECB)

The ECB will be at the heart of the European System of Central Banks (ESCB) consisting of the ECB and the National Central Banks (NCBs) (Gros and Thygesen 1992: Chapter 13). Given the German preference for a low-risk scenario, it would be no surprise if the Statutes of the ECB show strong similarities to the Bundesbank (Buba). This is indeed the case (Willms 1992: 217-221). However, the blueprint for the ECB also includes elements of the Federal Reserve System (Fed) of the United States (Walter 1993: 226-245).

Similarities to the Buba concept show up when looking at the decision making process, the implementation of monetary policy and the independence of the bank. The decision making process takes place in a Council in both the ECB (Governing Council) and the Buba (Bundesbankrat). These Councils consist of the members of the Executive Board (Direktorium in the case of the Buba) and the presidents of the regional central banks, i.e. the NCBs in the case of the ECB and the central banks of the German Länder (Landeszentralbanken). Each member of the Council has one vote and decisions are taken by simple majority. This seems to be quite similar to the construction of the Federal Open Market Committee (FOMC). However, the decisive difference is that the FOMC consists of 7 members of the Board of Governors and only 5 members from Federal Reserve Banks. This implies that the FOMC is dominated by the Board of Governors; whereas the Council of the ECB and the Buba are dominated by the

members of the regional central banks (assuming that a majority of EU members will participate in EMU).

In contrast, the implementation of monetary policy is highly decentralized in the US because it falls into the responsibility of the Federal Reserve Banks. In both the Buba and the ECB the Board is the main executive power. In Germany, the Direktorium implements all open market and foreign exchange market operations and leaves some discretion to the Landeszentralbanken only in the case of measures which have an exclusively regional impact. In the ESCB, the implementation of all measures of monetary policy falls into the responsibility of the Executive Board.

The same relationship between the Fed, the Buba, and the ECB shows up when analyzing the independence of the central bank. Members of the Board of Governors are appointed by the President of the US, controlled by the Banking Committee and by the Joint Economic Committee, and are obliged to target monetary policy at achieving not only price stability but also full employment, balance-of-payments equilibrium, and real growth. Additionally, the Fed has to support the general economic policy of the government. The latter is also the case for the ECB and the Buba, but only to the extent that the primary target, price stability, is not in danger. The two central banks are also similar with respect to financial and functional independence, i.e. they have own financial sources and they are not controlled by parliament. Additionally, the personal independence of the members of the Council is fairly guaranteed. In Germany, the appointment of a new member of the Direktorium involves the government, the Council of the Länder (Bundesrat) and the President of the Republic while the presidents of the Landeszentralbanken are appointed by the respective Länder. In the case of the ECB, the members of the Executive Board have to be appointed by the European Council (unanimous vote) and the presidents of the NCBs are appointed by the

respective countries according to their national procedure.⁶ Additionally, borrowing to the government is strictly prohibited for the ECB while they are only restricted for the Buba and allowed for the Fed. All in all, the ECB will be even more independent from political influences than the Buba presently is.

As was mentioned above, there are also some similarities between the ECB and the Fed. One similarity is the legal independence of the regional central banks, i.e. the Federal Reserve Banks and the NCBs. More important for practical monetary policy, the Chairman of the Board of Governors of the Fed and the President of the ECB have a quite strong position. They both represent the bank and have the decisive vote in the Board and in the Council in the case of a stalemate.

3. The Stability Pact

Although Germany convinced the other EU members to agree on rather demanding convergence criteria, to design the ECB according to the Buba blueprint, and to locate the monetary authority in Frankfort, discussions in Germany about the stability of the new currency did not come to a halt but rather swelled with time approaching the start of EMU. Finally, the German Council of Economic Experts (Sachverständigenrat) recommended the government to convince the European partners that a stable European currency needs an agreement on fiscal stability during EMU.

The main argumentation runs as follows (SVR 1995: 246-259). The fiscal criteria for entry into the EMU are not sufficient because they only provide an incentive for a consolidation of government finances in order to fulfill entry conditions

⁶ The terms of the members of the Executive Board is 8 years (they can not be reelected); the other members of the Governing Council should have a minimum term of 5 years. The members of the Direktorium and Rat including the president of the Buba have a maximum of 8 years (2 terms).

while renewed fiscal expansion is unrestricted after entry into EMU. This creates a problem for the stability of the common currency because market participants anticipate monetary policy to become more expansive in order to lower the real debt burden of highly indebted countries or even to bail them out. Although this has been explicitly excluded in the Maastricht Treaty, the credibility of excluding a bail-out is rated to be rather low. The intention of a Stability Pact is, therefore, to penalize excessive deficits in order to discourage governments from becoming expansionist. This should lead to an environment for the ECB which makes it easier to conduct a stable monetary policy.

However, this position is not undebated even within Germany. Critical arguments are concerned about the need for such a regulation of fiscal policy making or fear that the Pact may be even counterproductive (Schweickert 1996: 198-204). Generally, the regulation of fiscal policy is only necessary for a stable monetary policy if some assumptions are fulfilled. First, it has to be assumed that monetary policy actually can reduce the debt burden via a surprise inflation. But such a surprise inflation can reduce real interest rates only in the short-run. It will at the same time increase the cost of refinancing public debt by increasing long-term interest rates and by shortening the term structure of public debt. This will make it rather difficult for a highly indebted country to convince other EMU members to share this burden. It is at least more difficult than for a national government to urge upon a national central bank.

Second, the argument in favor of a Stability Pact also assumes that each member of the Council of the ECB will represent her national preferences or the interests of her national government. This is an important argument because it has always been claimed by German politicians and economists that the independence of the Buba leads to the effect that new members of the Council rather quickly cease to represent the preferences of their respective supporting group and instead adopt

the preferences of the institution. But even if one follows the argument and assumes that members of the ECB Council will represent national preferences, the decision making process makes it rather difficult for highly indebted countries to influence monetary policy. This is because the six members of the Directorate have to be appointed by unanimous vote from the European Council which makes it rather likely that the members come from the more stability-minded countries. Together with the six presidents of their national central banks they represent twelve votes - the simple majority even with all EU members on board would be eleven votes. This implies that the more stable countries can easily dominate the decision making process.

Third, the proponents of the Pact also have to assume that the capital markets can not discriminate between borrowers with different credit standings and, therefore, can not force highly indebted countries to adjust early. However, it is to be expected that the ability of the capital market to fulfill this task will improve with currency unification because this step will eliminate exchange rate risks and improve capital mobility.

Finally, the Stability Pact could backfire because it makes explicit that there are considerable doubts whether or not the ECB can follow a monetary policy targeted at providing price stability in Europe. It therefore diminishes the credibility of the central bank. It also increases the pressure on monetary policy to achieve other targets like full employment if it effectively rules out the use of fiscal policy to a considerable extent. Moreover, it is likely to deepen recessions for countries with a deficit of close to 3 percent of GDP before recession. To prevent the deficit rising above the ceiling, the government would need to cut spending and raise taxes - aggravating the slowdown - or to pay a fine which even increases the need to cut spending and to raise taxes.

Notwithstanding these arguments, Germany proposed that governments failing to keep their budget deficits below 3 percent of GDP would have to place a deposit with the European authorities. If the excess borrowing continued, the funds would be forfeit. Fines would be calculated at the rate of 0.2 percent of GDP plus another 0.1 percent for every percentage point by which the deficit exceeded 3 percent of GDP, i.e. a deficit of 6 percent of GDP would have triggered the maximum fine of 0.5 percent of GDP. Had such a pact been in force in 1996, the fine for Germany itself would have been \$ 7 billion. In the end, Germany climbed down at the Dublin meeting in December 1996. The compromise named Stability and Growth Pact defines automatic exceptions rather than automatic fines (see Scheide and Solveen 1997a: 15-17). In case of an economic decline of less than 0.75 percent or economic growth the countries agreed that "as a rule" they will keep the fiscal deficit below 3 percent of GDP, i.e. the rules for "excessive" deficits (Art. 104c of the Maastricht Treaty) apply as before. In case of an economic decline between 0.75 percent and 2 percent, countries can plead "exceptional circumstances" in order to avoid a fine which may be as big as 0.5 percent of GDP. In practice this means that a procedure involving the EC and the Council of Ministers containing six steps is set in motion which provides considerable scope for political discretion. In case of an economic decline of more than 2 percent of GDP, EMU members will be free to allow themselves fiscal deficits above 3 percent of GDP, i.e. the provisions of Art. 104c do not apply at all.

It is reasonable to assume that such a pact is unlikely to be effective in constraining fiscal expansion but likely to undermine the credibility of the no-bail-out clause of the Maastricht Treaty. The pact is also a valuable bargaining chip for countries not fulfilling the public debt criterion. This is because the fiscal deficit criterion of 3 percent of GDP has been designed to lead to an automatic convergence of public debt levels towards the required 60 percent level

(assuming an average growth of nominal GDP of 5 percent). Hence, with deficits bound below 3 percent by the Stability and Growth Pact, public debt level will converge anyway somewhat in the future.

III. CONSEQUENCES OF EMU

1. Economic Costs

Economists have never been sure about economic costs of monetary integration which are related either to the process of transition to a monetary union or to running the monetary union itself (see DeGrauwe 1994: Chapter I). Some of the possible costs related to transition have already been mentioned in Chapter II. In order to be eligible for membership in EMU, potential members have to stabilize prices and to consolidate government finances first. This needs restrictive monetary and fiscal policies and it implies costs in terms of, at least temporarily, higher unemployment if relative prices do not adjust immediately. While there is little doubt about this fact, the problem is to relate these costs either to the sins of the past or to the current problem of transition to EMU. As there is little doubt about the costs of stabilization and consolidation, there is little doubt as well about the positive effect of stable prices and a consolidated budget on economic growth. Hence, countries with high inflation and high fiscal deficits would have had to bear economic costs in the future irrespective of the monetary integration process.

A different problem of transition stems from the fact that economic performance and market expectations are interdependent. This means that interest rates on public debt of the highly indebted countries were lower if there were no doubts about their eligibility as member of the monetary union. Consequently, fiscal consolidation and price stabilization would have been much easier. Basically, this is the concept of an external anchor for domestic monetary policy and the idea to

import credibility of a stable country. But this concept has an important caveat. Announcements of stabilization and consolidation may not be time-consistent, i.e. once a country is eligible for membership in the monetary union there may be no incentive to further stick to preannounced policy reforms. In this sense, one may look at the Maastricht criteria as a chance for countries in need for reform to overcome the resistance of important pressure groups and to push reforms which increase the growth perspectives of the country.

Once being a member of a monetary union, economic costs may arise due to the fact that the exchange rate is no longer available as an efficient instrument for the adjustment of investment and production to a changing economic environment. However, the exchange rate is only an efficient instrument in this sense if (1) an economic shock is country specific and if (2) there is some exchange rate illusion to be exploited (Vaubel 1988; Bofinger 1994). The general validity of both assumptions can be doubted. With further progress in European integration of goods and factor markets, the patterns of production, consumption and investment become less and less country specific which implies that shocks are more likely to be either sector specific or affect a region rather than a country. With further progress in European integration of goods and factor markets, workers and employees should also have become more aware that a devaluation of the exchange rate reduces real wages because it raises the price of traded goods, a substantial component of the consumption basket. With less exchange rate illusion, wages, the most important component of non-traded goods prices, will react to devaluations thus neutralizing the effects on real wages and on the real exchange rate, i.e. the relative price of traded goods to non-traded goods.

If these arguments are true at least to some extent, it again becomes difficult to evaluate the costs of EMU. While the assumptions of country specific shocks and exchange rate illusion lead to high costs, there may also be net benefits if the

elimination of the exchange rate instrument enforces decentralized wage bargaining structures. Clearly, if available this is the first best instrument from a purely-economic perspective.

Another source of cost related to EMU may be the independence of the ECB which for most countries of the EU makes a significant difference to their national arrangements where the central bank often is an integral part of the overall demand management to smooth business cycles. To the contrary, the ECB is expected to give priority to price stability irrespective of the state of the real economy. Again, there are two possible interpretations to this situation. The proponents of an active monetary and fiscal policy would argue that the elimination of monetary policy as an instrument to influence the business cycle puts more pressure on fiscal policy to fulfill this task. Hence, there is a need for a centralized or at least harmonized European fiscal policy or a rather lax interpretation of the ECB's target system. The proponents of a passive monetary and fiscal policy would, of course, interpret the independence of the central bank as an advantage because they do not believe in the possibility to smooth business cycles by monetary policy or by a more active fiscal policy than implied by the built-in stabilizers. More important as a task for fiscal policy is to provide a policy package adequate to attract investment and to foster structural adjustment. This, however, rather needs a strictly decentralized fiscal policy in order to allow governments to compete, i.e. for institutional competition.

Generally, the debate can be reduced to an argument between two economic concepts. While the adoption of an Keynesian view assumes exchange rate illusion and leads to the support of an active use of exchange rate, monetary and fiscal policy to guide real adjustment, the neo-classical view denying the existence of exchange rate illusion gives first priority to wage adjustment as well as decentralized structures for wage bargaining and fiscal policy decisions.

2. Political Implications

An independent opinion poll in Europe's leading countries (United Kingdom, France, Germany, and Italy) on the issue of European Integration revealed significant differences in the perception of the consequences of a single currency (Handelsblatt, Le Figaro, L'Espresso, The Daily Telegraph cited in Handelsblatt 10/1/97 - answers in percent).

Support for the common currency

Italy: 71; France: 61; Germany: 43; United Kingdom: 26.

· Common currency has positive effects

Italy: 58; France: 53; Germany: 16; United Kingdom: 20.

A first interesting result is that the percentages of support are lowest for the United Kingdom. While this is hardly surprising given the outsider position of the country in the entire negotiation process, the results for the second question shows that the support mainly stems from people thinking that the common currency will have positive effects while this percentage is much lower in all other countries. This result is consistent with the assumption that the British calculus is mainly an economic one. People are only ready to forgo national independence if there is a clearcut economic advantage in the offing. Sweden and Denmark join the United Kingdom in this group of countries which may be referred to as outsiders to the process of monetary integration. Hence, they do not participate in the EMS and/or have an opt-out clause for participation in EMU. They are also the strongest proponents of the concept of decentralized policy making for the EU.7

⁷ If not otherwise cited, information on the individual countries is due to series of articles in the Handelsblatt (Währungen im Eurotest) and Der Tagesspiegel (Wer will den Euro?).

As a second result, Italians are most emphatic about the common currency. This is hardly surprising because the country represents a group of countries which may be labeled the convergence group, i.e. countries which initially have been far from fulfilling the criteria for entry into EMU but have made substantial progress during the recent years. Ireland, Finland, Portugal, Spain, and to some extent even Greece join Italy in this group of countries. These are the countries which expect the highest net benefits from participating in EMU primarily because it consolidates their stabilization efforts.

In the convergence group, Ireland and Portugal are clearly the star performers. Especially Ireland was able to use the momentum created by the requirement to fulfill the convergence criteria to foster stabilization and consolidation. A social pact resulted in a low growth of wage costs and in the possibility to restructure the fiscal budget. Consequently, Ireland became an example for fiscal restriction creating economic growth, i.e. it has net benefits, even in the short-run provided that a country implements an adequate reform package. Spain, Italy, and Greece share a similar performance with respect to stabilization but have been unable to translate this into strong and sustainable economic growth and a reduction of unemployment.

Irrespective of their individual performance, all countries in the group have shown a strict commitment to the process of monetary integration even when bearing economic costs in terms of high interest rates and high unemployment - the most extreme example in this respect is Spain. Except for Greece, they object attempts by more stable countries to discuss scenarios of a core monetary union - the most extreme example in this case is Italy.

This indicates that the motivations for these countries are also of a political nature. To some extent they want to break with a traditionally strong dependence from their neighbors in both economic and political terms. This is especially true

for Ireland (versus the United Kingdom) and Portugal (versus Spain): Additionally, there are purely political reasons for participating in European integration on all levels like external security in the case of Finland and the consolidation and safeguarding of the democratization process in the case of Portugal and Spain.

The other two countries included in the opinion poll, France and Germany, clearly belong to the core group, i.e. they will either participate or EMU will not come to operation. The Netherlands, Belgium, Luxembourg, and Austria also belong to this group of countries which - together with Denmark - form the D-mark zone. As can be seen from the results above, the perception of the monetary union differs significantly between the two countries. Obviously, 27 percent of the Germans support the common currency although they do not think that it will have positive effects. But this positive engagement is not sufficient to yield a majority for the Euro. This result basically reflects the fears on the part of Germany that the French view of monetary policy will finally succeed notwithstanding the Maastricht criteria, the independent ECB, and the Stability Pact.

Although there is no evidence there are some facts which feed such fears. France has been able to occupy key positions in the monetary unification process - the head of the European statistical office which has to approve controversial budget measures and the commissioner for monetary affairs who is responsible for the EC's convergence report. France is also the strongest proponent of an active exchange rate and fiscal policy as well as of a strong influence of governments on the decisions of the central bank (The Economist 21/12/96; FAZ 24/1/97). In this respect, it launched an initiative to form a council for stability in which the finance ministers should discuss the coordination of fiscal policy and the design of the common exchange rate policy. Recently, this position also gained

prominent support by the former president Giscard d'Estaing who argued in favor of a devaluation of the franc and even the D-mark before entry into EMU in order to regain competitive strength. Additionally, resistance against a restrictive fiscal policy is strongest in France.

On the other hand, the French position is rather isolated when looking at the other core countries. Fiscal consolidation in the Netherlands, in Belgium, and in Austria has by now not provoked significant resistance and the Netherlands are among the countries strongly supporting a strict interpretation of the convergence criteria. Their main motivation is that they want to participate in designing and implementing a monetary policy which they followed in the past and which they are unwilling to change.

III. TRANSITION TO EMU

In a formal sense, the scenario for monetary unification is fairly fixed (EMI 1995):

- Phase I (- Dec. 98): Preparations for EMU including the decision by the European Council on the membership and the establishment of the ESCB.
- Phase II (Jan. 99 Dec. 2001): The ECB will start conducting its single monetary policy in the European Currency, the Euro.
- Phase III (Jan. 2002 June 2002): The ECB will start issuing Euro banknotes and exchanging the national banknotes and coins against Euros.
- Phase IV (July 2002): Monetary unification is complete with the Euro banknotes becoming the sole legal tender in the European currency area.

This scenario requires a political decision on the membership as well as technical and legal measures in order to implement EMU.

1. Membership and Alternatives for Non-Members

Given the debates on the measures for reducing the risks related to the introduction of a so-called new currency and on the best design for economic policy in order to reduce the costs of a common currency, it remains fairly unclear which countries will join EMU in 1999 and which countries will have to wait either participating in EMS II or staying completely outside the formal monetary integration process. In the end, the political decision has to be taken in 1998 by the European Council with a qualified majority, i.e. with a minimum sum of votes of 62 out of 87. In order to develop some scenarios, Table 2 divides the EU members into three groups defined above: the core group, the convergence group, and the outsider group. It also relates the votes of the country groups to their fulfillment of the convergence criteria.

A first scenario may be described as the opt-out scenario. If Germany would try to postpone EMU by arguing that a strict interpretation of the convergence criteria is necessary this is likely to be successful. Based on EC projections 4 countries will comply with all criteria giving a sum of 18 votes only. Additionally, the Netherlands, the United Kingdom, Sweden and Denmark may join this position either because they are convinced by the argument or because they prefer to delay the introduction of a strong European currency in their neighborhood. These countries easily form a blocking minority of 32 votes, i.e. it would be impossible for the other countries to go ahead without them.

Excluding both possibilities that Germany tries to opt-out and that all criteria have

Table 2 — Votes in the European Council in Relation to Fulfillment of Convergence Criteria

All countries		Countries passing inflation, interest rate and exchange rate criteria	Countries additionally passing fiscal balance criteria	Countries additionally passing public debt criteria
Core Group				
Germany	10	Germany	(Germany)	•
France	10	France	(France)	
Netherlands	5	Netherlands	Netherlands	
Belgium	5	Belgium	Belgium	
Austria	4	Austria	Austria	(France)
Luxembourg	2	Luxembourg	Luxembourg	Luxembourg
	36	36	16 (36)	2 (12)
Convergence Group	<u>. </u>			
Italy	10			
Spain	8	Italy		
Portugal	5	Spain	(Spain)	
Greece	-5	Portugal	Portugal	
Ireland	3	Ireland	Ireland	
Finland	3	Finland	Finland	Ireland
Trituid	34	29	11 (19)	3
Outsider Group		٠.		
United Kingdom	10			•
Sweden	4		•	•, • •
Denmark	3	Denmark	Denmark	Denmark
Denmark	17	3	3	3
	لبئث	<u> </u>		· .
	87	68	30 (58)	8 (18)
		Qualified Majority 62	Blocking Minority: 26	
() = According to E0	C csti	mations, if different to OEC	D estimations.	

Source: See Table 1; own calculations.

to be fulfilled in a strict sense, Italy is likely to play the decisive role. As shown in Table 2, a qualified majority is possible if the two fiscal criteria are neglected. Both the EC and the OECD estimated that the convergence group, with the exception of Greece, will meet the other criteria. If the core group joins this group this would account for sufficient votes to form a qualified majority.

However, if only the deficit criterion is added to the list of relevant criteria, Italy is most likely to be out and to join the group of countries voting against a small EMU. Even assuming that Germany, France, and Spain will meet the deficit criterion, it will be difficult for political reasons to allow Spain and Portugal to participate while Italy has to stay out. Hence, EMU would shrink to the core group plus Ireland and Finland, a group of countries which would need the votes of all outsiders plus Greece to go ahead.

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Just some years ago, the idea to restrict entry into EMU by promising a later entry, e.g. in 2002 with the physical introduction of the new currency, was highly plausible. But now the progress of convergence outside the core group has already reached a level which makes it more or less impossible to imagine a scenario of a small EMU formed by the core group (see Scheide and Solveen 1997b: 5-6). In addition, the negotiations on the design of EMS II do not indicate that such a scenario would be acceptable for countries like Italy, Spain, and Portugal. The agreements in Dublin show that the new system will have rather unattractive features for countries relying on the external anchor approach: the bands will be wide, the obligations on the part of the ECB to intervene in favor of EMS II currencies will be fairly restricted, and the interference of the ECB into national exchange rate policy will be far-reaching. It is therefore plausible that

Even if the latest optimistic projections of the EC would become reality, the countries passing all criteria would be Luxembourg, the Netherlands, Denmark, Finland, and Ireland, a group of countries which accounts for only 16 votes in the European Council and which hardly constitutes reasonable currency area.

especially the Southern European countries lose a substantial part of the credibility they gained by the market perception of their likely entry into EMU. Interest rates, debt service, and, hence, public deficits would rise. A rise of interest rates, e.g., by 0.5 percentage points will imply an increase in Italy's fiscal deficit of 0.6 percentage points. This would imply that entry in 2002 would be harder to achieve than entry in 1999. Hence, the countries of the convergence group will in all likelihood put up maximum political pressure for being taken in if EMU starts.

Alternatives for non-participating countries are rare because any unilateral narrowing of bands, e.g. to the former 2.25 percent deviation to either side, would immediately invite speculative attacks. Therefore, the Currency Board or a parallel currency seem to be the only alternatives at hand. In a currency board, the monetary base in national currency has to be fully backed by foreign exchange reserves, e.g. in Euro. Without the help of the ECB, this is difficult to achieve. With a parallel currency approach the non-participating countries would introduce the Euro as a legal tender perfectly substitutable to their national currency. Given a more or less floating exchange rate, the market would then decide on the portfolio held by the private sector.

2. Technical and Legal Aspects of Transition

Most technical and legal requirements for EMU have to be fulfilled already at the end of Phase I. But the implementation of these measures will only gain speed after the European Council will have decided on membership. However, the general requirements have already been laid down. They are related to the supply of the new currency (EMI 1995, EC 1995).

First, the instruments and the targets for monetary policy have to be defined. The targets for monetary policy will be a mixture of both a money supply target and a

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direct inflation target. The EMI also already outlined a model for the conduct of a European monetary policy (EMI 1996a). The main instruments will be a variety of open market policies which are complemented by lending and borrowing facilities forming a corridor around market interest rates. Minimum reserves requirements will be of minor importance. These policies, have still to be harmonized in order to exclude any possibilities for arbitrage due to institutional differences.

Second, the statutes of national central banks have to become compatible with the statutes of the ESCB. This requires their independence in the first place. Up to now, only the Danish Central Bank passes this test and even the Bundesbank still fails to meet all requirements of independence (EMI 1996b: Annex 1): the government can postpone the implementation of the Bundesbankrat, the minimum term for the members of the Council is less than 5 years, and the priority for achieving price stability is not stated clearly. In addition to independence, NCBs have to be ready to act as an agent of the ECB.

Third, public authorities have to provide a legal framework to be in place so as to ensure the status of the Euro and its irrevocably fixed conversion rates against national currencies. During Phase II and III the legal framework has to guarantee the freedom to transact on either national or European monetary units. This should allow the private sector to optimize an individual transition schemes. Therefore, it is also to be guaranteed that in Phase II contracts in national currency will be converted into contracts in Euro using the conversion rate, while the contracts as such remain their full validity in law. The difficult question will be how to translate this into a legal text so that it is binding for non-EMU and even non-EU inhabitants.

Fourth, the conversion rates have to be defined at the beginning of Phase II. Hence, exchange rates will have to be locked at the start of 1999. Exactly how they will be locked poses something of a dilemma (see Lehment and Scheide 1995 for a detailed discussion). If the authorities leave the fixing of rates until the last moment, speculation may cause a lot of exchange rate turbulence in the very months or weeks before EMU starts. If instead the rates were announced in advance, everything would depend on the credibility of Europe's monetary authorities. If they retain the market's confidence, speculation could help pinning exchange rates at the preannounced levels; if not, the preannounced parities might be attacked just as the old EMS was - with similar results. The problem will continue, and perhaps worsen, once exchange rates have been fixed "irrevocably", at whatever parities, at the start of 1999. Suppose the French franc is swapped for D-marks completely and the ECB will order marks and stop francs to be issued. Would France and Germany go along with this? Any suspicion that they will not would become self-fulfilling.

IV. SUMMARY

The main challenges for European monetary integration are easy to summarize:

- The lack of consensus on the interpretation of the convergence criteria strict versus lax.
- The lack of consensus about the blueprint for economic policy making in an European currency area - centralized versus decentralized, active versus passive monetary and exchange rate policy.

The interpretation of the convergence criteria will decide on the entry into the European Monetary Union (EMU). The dilemma is that a small monetary union including the countries which have been successful in forming a D-mark zone is not likely to find a qualified majority in the European Council of Heads of States

or Government in early 1998, while a large monetary union can win a majority of votes but fails to meet the fiscal criteria.

The interpretation of economic policy complementing the ECB's attempt towards stabilizing a European price level will decide on the costs of the single currency. From a purely economic point of view this would have been the more relevant question to be discussed right from the start of the EMU project. From a political point of view, this provides the set up for a tough competition - at least in the theatre of economic diplomacy (see Siebert 1997 for a discussion of policy options).

However, there are not only reasons to doubt a smooth transition to and a smooth functioning of EMU. The Statutes of the European Central Bank (ECB) go well beyond the already high standards set up by the US Federal Reserve, System and the German Bundesbank in providing independence to the members of the Executive Board and the Governing Council. Additionally, the need for convergence has created some momentum for economic reform in peripheral countries like Ireland, Portugal and to a lesser extent, Spain and Italy. Especially the governors of the central banks have shown a firm commitment to price stability. This provides some hope for the case that a large monetary union, including the core group of countries belonging to the D-mark zone and the countries which successfully converged to this group in recent years, will struggle to convince international capital markets that the Euro will be a strong currency.

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V. LITERATURE

- Collignon, Stefan (1994). Das europäische Währungssystem im Übergang Erfahrungen mit dem EWS und politische Optionen, Wiesbaden.
- Bean, Charles R. (1992). Economic and Monetary Union in Europe, *The Journal of Economic Perspectives* 6 (4): 31-52.
- European Monetary Institute (EMI) (1995). The Change over to the Single Currency, Frankfurt/Main.
- (1996a). Annual Report 1995, Frankfurt/Main.
- (1996b). Progress Towards Convergence, Frankfurt/Main.
- (1997). Annual Report 1996, Frankfurt/Main.
- DeGrauwe, Paul (1994). The Economics of Monetary Integration, Oxford.
- European Commission (EC) (1995). Green Paper on the Practical Arrangements for the Introduction of the Single Currency, Brussels.
- -- (1996). Statistical Annex of European Economy, Directorate for Economic and Financial Affairs, Brussels.
- Gros, Daniel, and Niels Thygesen (1992). European Monetary Integration, London/NewYork.
- Lehment, Harmen, and Joachim Scheide (1995). Der Fahrplan für die Europäische Währung: Noch erheblicher Handlungs- und Klärungsbedarf. Kiel Discussion Papers 259. Institute of World Economics, Kiel.
- Organization for Economic Cooperation and Development (OECD) (1996). OECD Economic Outlook, Paris.
- Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Lage (SVR) (1995). Im Standortwettbewerb, Jahresgutachten 1995/96, Stuttgart.
- Scheide, Joachim, and Ralph Solveen (1997a). Before EMU Starts: Economic Policy Stimulates Recovery in Europe. Kiel Discussion Papers 294. Institute of World Economics, Kiel.
- (1997b). Auf dem Weg zum Euro Szenarien für Zinsen, Wechselkurse und Konjunktur. Kiel Discussion Papers 292. Institute of World Economics, Kiel.

- Siebert, Horst (1997). Zu den Voraussetzungen der Europäischen Währungsunion. Kiel Discussion Papers 289. Institute of World Economics, Kiel.
- Schweickert, Rainer (1996). Harmonisierung versus institutioneller Wettbewerb zur Sicherung realwirtschaftlicher Anpassung und monetärer Stabilität in der Europäischen Währungsunion, Beihefte der Konjunkturpolitik (44): 181-212.
- Walter, Christian (1993). Das Federal Reserve System, die Deutsche Bundesbank und das Europäische System der Zentralbanken / die Europäische Zentralbank im Vergleich, Starnberg.
- Willms, Manfred (1992). Internationale Währungspolitik, München.