2. The transition to European Monetary Union

2.1. Introduction

At the end of the 1980s new political initiatives to relaunch Economic and Monetary Union (EMU) among the member states of the European Union (EU) gained momentum. These initiatives culminated in the ratification of the Maastricht Treaty by the member states in the beginning of the 1990s. The Treaty formalizes three stages for moving towards monetary union. Before transition to the third, final stage, progress made in terms of economic convergence will be reassessed. Each country will be assessed individually before it is decided whether or not it can go forward to monetary union. The Protocol referred to in Article 109f of the Treaty sets out four criteria for transition to the third stage relating to inflation performance, budget positions, exchange rate stability and long-term interest-rate convergence, which need to be fulfilled before entry into the third stage. Nominal convergence, i.e. convergence of prices, is, thus, considered a precondition for further moves towards economic and monetary integration.

Taking into account solely of nominal macroeconomic convergence may, however, be insufficient. If a similar evolution of real economic activity across member countries of the third stage is not achieved, there is a threat of pronounced regional differences in unemployment, incomes and growth. Pronounced international income disparities would imply the danger of social and political tension and, correspondingly, of macroeconomic instability. The congruent behavior of real economic activity will, thus, be an important factor for monetary union in Europe. Moreover, the Maastricht Treaty itself determines in its Article 2 economic and social cohesion, and thus real economic convergence, as a policy goal of the Community. Thus, while not a strict technical necessity, real economic convergence would be economically and politically helpful for the working of monetary union.

In this chapter, I contrast nominal convergence, as foreseen in the Maastricht Treaty, and real economic convergence. The formulation of the convergence criteria and the gradual approach towards monetary union has been discussed both in academic and political circles. I therefore critically review the transition process and provide a review of several reform proposals noted in the literature. The chapter thereby aims to lay out the economic policy background of the subsequent empirical analyses.
The chapter is structured as follows. Section 2 reviews the design of the transition process to monetary union as laid out in the Maastricht Treaty. In Section 3, the rationale of the Maastricht Treaty's convergence criteria is discussed. In Section 4 characteristics of participants in a monetary union suggested by economic theory are put in contrast to the existing barriers formulated in the Maastricht Treaty. The theory of optimum currency areas is used to show that convergence of real economic activity will be an important issue for monetary union. Section 5 discusses several reform proposals noted in the literature, while Section 6 summarizes and concludes the chapter.

2.2. The design of the transition process towards European Monetary Union

The Maastricht Treaty designs a gradual movement towards monetary union in three stages. In the first stage, which began in July 1990, the member states of the European Monetary System (EMS) abolished all remaining capital controls. The second stage started on 1 January 1994. A new institution, the European Monetary Institute (EMI), was created, which is supposed to strengthen monetary co-operation between national central banks. The third stage, the introduction of a single currency, will take place in the beginning of 1999, at the latest.

The European Council solidified the conditions for the transition process towards a single currency in Madrid in December 1995. The quality and timetable follows largely the proposal made by the EMI in November 1996. First, the choice of the participants of EMU will be made by the heads of state and/or government as early as possible in 1998. The decision will be based upon reports prepared by the EMI and the Commission and will rely on macroeconomic data for the year 1997. Second, as soon as the starting date for stage three has been determined, and no later than July 1998, the executive board of the European Central Bank (ECB) will be appointed by "common accord" of the EU governments participating in stage three, on the recommendation of the Council, and after consulting the European Parliament and the Governing council of the ECB. The ECB will be established once the executive board has been appointed and will exercise its powers from the first day of stage three (Art.1091). The EMI will at the same time be liquidated, as the ECB takes over its functions.

The convergence criteria affect the decision making process through their influence on the reports made by the EMI and the Commission. The Council has repeatedly emphasized that the convergence criteria will be applied
strictly. Article 109j of the Maastricht Treaty contains four convergence criteria, which are explained in a protocol to the treaty:

1. **Achieving a high degree of price stability**, which the protocol interprets as meaning that: ... an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1½ percentage points that of, at most, the three best performing Member States in terms of price stability. Inflation shall be measured by means of the consumer price index (CPI) on a comparable basis...

2. **Achieving a sustainable financial position**, which the protocol interprets as meaning that: ...at the time of the examination the Member State is not subject of a Council decision ... that an excessive deficit exists.

3. **Maintaining the country's exchange rate within the normal EMS band**, which the protocol interprets as meaning that: ... the Member State has respected the normal fluctuation margins ... without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency's bilateral central rate against any other Member State's currency on its own initiative for the same period.

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**Fig. 2.1.: The timetable for the transition process to EMU.**

Source: Based on Deutsche Bundesbank.
4. Achieving a long-term interest rate indicative of durable convergence and of the country's participation in the EMS, which the protocol interprets as meaning that: ...over a period of one year before the examination a Member State has an average nominal long-term interest rate that does not exceed by more than 2 percentage points that of, at most, the three best performing Member States in terms of price stability.6

The decisions on entry into monetary union will take into account of the reports prepared by the Commission and the EMI, and the opinion of the European Parliament. The Commission and the EMI will base their recommendations on the fulfilling of the convergence criteria of Article 109j and on the fiscal "excessive deficits" criterion laid down in Article 104c for each individual country. It is important to note that the Council cannot stop the integration process. The Council has only to decide which countries are ready to enter the third stage and grant the authority of Art. 109k. All of the Council's decisions will be taken with qualified majority voting. No country will have the opportunity to exercise a veto. Thus, the Maastricht Treaty has created a transition-automatism to monetary union [see Kortz, 1996a,b]7. There is a way to postpone monetary union, as noted by Kenen (1992) and Thygesen (1993a), by deciding before 1998 to start stage three after January 1, 1999. It is not possible, however, to abandon or to stop the monetary integration process.8

It has been criticized that the formulation is rather slender and that there remains plenty of room for political interpretation [see, e.g., EMI, 1995; Hasse, 1995a; Schmidt and Straubhaar, 1995a,b]. Two examples may help to make the point: with respect to price stability, the formulation does not clarify whether the wording "at most, the three best performing member states" does not leave scope for judging price stability in relation to the performance of the two countries with the most stable prices or even to just the Member State with the best record in the past. There are also differences of opinion as to whether the 1½ percentage points are to be added to the average of the (one, two or three) reference countries or only to the inflation rate of the "worst" of them. Finally, the wording raises the question as to how "sustainable" price stability is to be assessed.

The criterion of exchange rate stability means that a member state must have "respected the normal fluctuation margins provided for by the Exchange Rate Mechanism of the European Monetary System without severe tensions for at least two years before the examination". After the widening of fluctuation margins from 2.2 per cent to 15 per cent on 2nd August 1993 as a result of "unprecedented exchange market pressures", the question arises as to which fluctuation margins are to be used as the reference point for measuring diver-
gence\textsuperscript{10}. The application of the Maastricht Treaty's convergence criteria will thus remain subject to discretion and a matter of contemporary politics. The discretion does only refer to the decision on the eventual "ins" and "outs", and not to the decision of whether entering the third stage or not.

Table 2.1: Convergence criteria of the Maastricht Treaty (1997)

<table>
<thead>
<tr>
<th>Maastricht Criter-</th>
<th>Budget deficit (in % of GDP)</th>
<th>Public debt (in % of GDP)</th>
<th>Consumer Price Index (in %)</th>
<th>Long-term interest rate</th>
<th>Membership in EMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crit-</td>
<td>-3.0</td>
<td>60.0</td>
<td>3.1</td>
<td>7.9</td>
<td>yes</td>
</tr>
<tr>
<td>rion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>-3.0</td>
<td>73</td>
<td>1.8</td>
<td>5.1</td>
<td>yes</td>
</tr>
<tr>
<td>Belgium</td>
<td>-2.9</td>
<td>127</td>
<td>1.9</td>
<td>6.2</td>
<td>yes</td>
</tr>
<tr>
<td>Denmark</td>
<td>-0.4</td>
<td>70</td>
<td>2.5</td>
<td>6.7</td>
<td>yes</td>
</tr>
<tr>
<td>Finland</td>
<td>-1.7</td>
<td>60</td>
<td>1.7</td>
<td>5.3</td>
<td>no\textsuperscript{1}</td>
</tr>
<tr>
<td>France</td>
<td>-3.2</td>
<td>57</td>
<td>1.3</td>
<td>6.4</td>
<td>yes</td>
</tr>
<tr>
<td>Germany</td>
<td>-3.4</td>
<td>63</td>
<td>1.5</td>
<td>6.1</td>
<td>yes</td>
</tr>
<tr>
<td>Greece</td>
<td>-5.7</td>
<td>105</td>
<td>7.2</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>Ireland</td>
<td>-1.1</td>
<td>76</td>
<td>2.0</td>
<td>6.9</td>
<td>yes</td>
</tr>
<tr>
<td>Italy</td>
<td>-3.7</td>
<td>123</td>
<td>2.5</td>
<td>7.7</td>
<td>no\textsuperscript{1}</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>0.0</td>
<td>7</td>
<td>1.8</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>Netherlands</td>
<td>-2.3</td>
<td>76</td>
<td>2.1</td>
<td>6.1</td>
<td>yes</td>
</tr>
<tr>
<td>Portugal</td>
<td>-2.9</td>
<td>68</td>
<td>2.6</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>Spain</td>
<td>-3.7</td>
<td>69</td>
<td>2.9</td>
<td>7.7</td>
<td>yes</td>
</tr>
<tr>
<td>Sweden</td>
<td>-2.5</td>
<td>79</td>
<td>2.1</td>
<td>7.1</td>
<td>no</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>-3.7</td>
<td>57</td>
<td>2.5</td>
<td>7.4</td>
<td>no</td>
</tr>
</tbody>
</table>

\textsuperscript{1}Finland and Italy joined the EMS in the end of 1996.


In sum, economic convergence within the EMS member states is a precondition for further moves to economic and monetary integration. A long transition period is deemed as necessary to achieve convergence, since, it is argued, confidence in the permanence of EMU might be impaired if the economies of the participating countries would not converge sufficiently before their exchange rates were locked\textsuperscript{11}.

Presently, most forecasts conclude that the interest rate and the inflation rate criterion will be fulfilled by virtually all EU-member states (see Table 1). Only Greece is expected to exceed the inflation criterion. Five countries will not fulfill the exchange rate criterion, as it requires the participation in the EMS for two years in advance of the decision on participants in the union, thus since the
beginning of 1996. With respect to the budgetary criteria, member states have made large advances within recent years. The criteria will, however, most probably not be reached in 1997 by a large number of countries.

2.3. A critical assessment of the Maastricht Treaty's convergence criteria

The Treaty has established, as has been pointed out in the previous section, the need for a high degree of prior economic convergence as a precondition for the entry of each member state into EMU\(^{12}\). In this section, the economic rationale for the formulation of the convergence criteria is analyzed, focusing first on the monetary convergence criteria, i.e. those referring to exchange rates, interest rates and inflation rates and turning, thereafter, to the fiscal convergence criteria\(^{13}\).

2.3.1. Monetary convergence

The monetary convergence criteria are economically closely related. Several economic explanations have been stated in the literature. Begg et.al. (1991) suggest that the exchange rate criterion is the most important one, because the success of the EU countries in avoiding realignments during the run-up to stage three would be an adequate test of their ability to bear the costs of reducing inflation in stage three itself. Langfeldt (1992) similarly stresses the need to reduce the risk of realignments during stage two so as to confer credibility on the locking of exchange rates at the outset of stage three and thus protect the monetary union from exchange rate crises before it has moved to using the ECU as its single currency. However, the potential of self-fulfilling expectations and speculative attacks being unrelated to economic fundamentals is ignored. Expectations of a devaluation can actually lead to a devaluation by leading to capital outflows that exhaust a country's foreign reserves\(^{14}\). In particular, expectations of a final realignment before the entry into the third stage will pose a threat to exchange rate stability which will be most probably independent from convergent macroeconomic fundamentals [De Grauwe, 1994b]. Moreover, if financial markets come to believe that a country will belong to the group of "outs", they may require a premium for higher inflation rates or future devaluations. In contrast, if markets expect that the country will enter the third stage, they might require a lower rate of return. Divergent interest rates are to be expected in either case. For payoffs of investors to remain equalized, the exchange rate needs to move. Central banks have to intervene in order to keep the
exchange rate unchanged, thereby foreign reserves will be exhausted and speculative attacks will occur.

Lesch (1993) refers to monetary theories of exchange rates as economic foundation for the exchange rate and inflation rate criteria. Monetary exchange rate theories maintain that the nominal exchange rate is determined in the long-run by price differences across countries. A country with a relatively greater loss of purchasing power is subject to devaluation pressure; a country with a relatively smaller loss of purchasing power in contrast is subject to revaluation pressure. Central here is the purchasing power parity (PPP) relation, according to which, in the long-run, domestic and foreign price levels are related by the nominal exchange rate.

\[(2.1) \quad p_t = p_t^* \cdot e_t \]

where \(p_t\) and \(p_t^*\) denote the domestic and foreign price levels, respectively, and \(e_t\) refers to the nominal exchange rate. By differencing equation (1) we obtain the relative PPP condition.

![Figure 2.2: Inflation rate performance in selected EU countries](image)

Source: OECD Main Economic Indicators, Paris.
From equation (2), exchange rate movements are determined by inflation rate differentials. It follows essentially from these kind of models that convergent inflation rates are necessary for stable exchange rates in the long-run. At the same time, inflation cannot be influenced by the exchange rate. One extreme view that results from this argumentation, the so-called "coronation theory"\textsuperscript{16}, is that it would be necessary to wait for a full convergence of inflation before it is advisable to go to monetary union by irrevocably fixing exchange rates [Gros and Thygesen, 1992 pp. 473]\textsuperscript{17}.

Empirically, differences of inflation rates between EU economies have been reduced during the 1980's, as can be seen from Figure 2. France, Denmark, Ireland, in particular, but also Italy and Spain have reduced their inflation rates. The figure seems to suggest, however, that inflation rate convergence is associated with the existence of a fixed exchange rate system. Inflation rates during the 1960's have been low and similar within the Bretton-Woods exchange rate system. After the collapse of the Bretton-Woods system in 1973, levels of inflation rates have been rising in the 1970's until the EMS was introduced in 1979. If such a systematic relation indeed was to hold, as has been argued by Giovannini (1989), inflation rate divergence after the collapse of the EMS is to be expected.

Let's turn to the economic foundation of the interest rate criterion. Issing (1992) interpretes the long-term interest rate criterion as an additional, reassuring indicator for convergence of price stability and budgetary discipline\textsuperscript{18}. This argument is problematic, however, as has been pointed out by Lesch (1993), because it is unclear which inflation rate is expected by market participants. The average long-term interest rate incorporates the expected inflation rate. In the year before the adoption of a common currency the expected inflation rate will not depend on national monetary policies, but rather will be associated with the expected monetary policies of the future ECB. The actual inflation rate, in contrast, is more reflected in the short-term interest rate level. In other words, the long-term interest rate mirrors the credibility of the future ECB while the short-term interest rate reflects the credibility of the current national central bank. Economies with more than average inflation rates gain from imported credibility, which is however only the result of the supranationalisation of their monetary policies. The imported credibility reduces the level of long-term interest rates. Long-term interest rates may, according to this line of argumentation, converge more than justified by economic fundamentals. Convergence depends then
mainly on how market participants evaluate the probability of the economy to enter into the third stage.

The sources of differences between nominal interest rates at home and abroad can, in order to obtain a more systematic view on the international relation of interest rates, be summarized by the following equation:

\[ i_t = i_{t}^{*} + E_t(\Delta e_{t+k}) + \text{Risk}_t + \text{Dom}_t + \text{Bar}_t \]

where \( i_t \) and \( i_{t}^{*} \) are, respectively, nominal interest rates in home and foreign currency denominated assets of a given maturity; \( E_t(\Delta e_{t+k}) \) reflects future expected exchange rate changes; \( \text{Risk}_t \) constitutes the part of the differential due to the uncertainty in returns from investing in a foreign asset and to the risk of changes in the exchange rate over the period of the investment; \( \text{Dom}_t \) is the portion of the differential that is due to differences in the characteristics of the assets besides maturity, such as liquidity or tax treatment. \( \text{Bar}_t \) represents the part of the differential that is due to government policies and institutional imperfections (capital controls) that effectively impede financial flows across national jurisdictions. \( \text{Dom}_t \) and \( \text{Bar}_t \) are country-specific risks reflecting factors that may lead to imperfect substitutability between bonds denominated in different currencies.

If \( \text{Risk}_t, \text{Dom}_t \) and \( \text{Bar}_t \) are zero, or, in other words, if bonds that differ only in their currencies of denomination are perfect substitutes, equation (3) represents the classic uncovered interest parity condition. Uncovered interest parity states that the nominal interest differential between similar bonds denominated in different currencies must equal the expected change of the exchange rate over the holding period [e.g. Cumby and Obstfeld, 1984]. Equation (3) also shows that even when exchange rates are credibly fixed, so that \( E_t(\Delta e_{t+k})=0 \), interest rates can still differ across countries, due to country-specific risks like tax differences or default risk. It follows that nominal interest rate differentials may be of no greater use as precondition for monetary union. Observable long-term interest rate differentials reflect a number of different expectations, from default risk to debt maturity differences, which are not necessarily related to monetary integration.

In Figures 3 a) and b) short-term and long-term interest rate differentials of selected EU economies relative to Germany for the period 1979 to 1994 are displayed. The interest rate criterion of the Maastricht Treaty requires convergence only of long-term nominal interest rates. A positive value indicates a higher interest rate in the foreign country than in Germany. Most countries' interest
rates, both short-term and long-term, have been higher than the ones in Germany. Differentials of both rates have been reduced in recent years. While during the EMS crises, differentials, in particular, of short-term interest rates have increased, they have been reduced thereafter again. Long-term interest rates have converged in recent years, largely because of the elimination of capital controls in Europe in relation to the entry into the first stage of monetary union.

It is noteworthy that interest rates in Germany have been almost consistently below other economies' interest rates in Europe. This reflects the high reputation and credibility of the Deutsche Bundesbank, which is based on a long tradition of a relatively stringent and conservative monetary policy and on its political and economic independence. One motivation for the other countries to participate in the EMS, that has been mentioned frequently in the literature, is to import the credibility of the Bundesbank and to use a system of fixed exchange rates as an institutional constraint for their own monetary authorities.

![Figure 2.3: Interest rate differentials relative to Germany](image)

Source: OECD Main Economic Indicators, Paris.

The general idea of this argument is that authorities that have the discretion to alter the nominal exchange rate, will tend to abuse their power, introducing an
inflationary bias into the economy [e.g. Edwards, 1992]. Under plausible conditions, such as the existence of labor market rigidities that preclude the economy from reaching full employment, it will be optimal for the authorities to surprise the private sector through unexpected devaluations. By engineering these unexpected devaluations the government expects to induce a reduction in real wages and, thus, an increase in employment and a boost in output. In equilibrium, with rational private agents who take this information into account in forming their inflation expectations, the public will anticipate the devaluation surprises and hence render them ineffective. As a consequence, the inflation rates will be relatively high in the long-run, without a positive effect on employment. A key policy implication of this literature is that a way to gain credibility is by "tying the hands" of the authorities. A fixed exchange rate system may serve as such an institutional constraint that limits the scope for activist policies of monetary authorities. The adoption of a fixed exchange rate constrains governments ability to surprise the private sector through unexpected devaluations. Promises of monetary discipline become credible and private sector decisions do not elicit successive rounds of inflationary actions. Countries with a history of relatively high inflation, and correspondingly relatively low monetary reputation, thus entered the EMS in order to limit the scope for unexpected devaluations of their own monetary authorities.

A similar line of reasoning has been applied to analyze the economic rationale for the convergence criteria [De Grauwe, 1994a]. When the member states of the European Union, which are characterized by different reputations concerning inflation, decide to form a fixed exchange rate system, like EMU, the high-inflation countries import the credibility of the low-inflation countries and thereby most likely benefit from the reputation of the low-inflation countries. The low-inflation countries do not benefit from participation in the union and may, in contrast, be infected by the bad reputation of the high inflation countries. Thereby, the low-inflation countries may experience a welfare loss. Since the low-inflation countries may loose when they join the union, they seek to impose conditions for the participants of the union in order to avoid the welfare loss. Thus, the convergence criteria of the Maastricht Treaty are formulated, due to the interests of the low-inflation countries, in order to provide evidence that the high-inflation countries care about a low inflation rate in the same way as the low-inflation countries do and, in particular, as Germany does. This they do by bringing the inflation down to a common level. During this disinflationary process, a temporary increase in unemployment, due to a movement along the short-term Phillips curve, will be inevitable. This self-imposed suffering is added...
evidence for the low-inflation countries that economies like Italy are serious about fighting inflation. Once the proof is given, these economies can be left into monetary union. To use the Maastricht Treaty as such an institutional constraint on the political authorities and the fulfilling of the convergence criteria as evidence for future preferences of the authorities in high inflation countries would, however, if this was a motivation for the formulation of the convergence criteria, have been a misleading approach. The reason is that nothing in the formulation of the criteria can rule out strategic behavior of future member states [De Grauwe, 1995]. Countries may act opportunistically, i.e. they may pursue disinflationary policies today so as to gain access later. Once they are in the union, they may reveal their true preferences. The executive board of the ECB will be chosen by "common accord" of the EU governments participating in stage three. Thus, the board of governors may, as representatives of the participating countries, be subject to political influence. They will be able to influence monetary policy and to put the "hard-nosed" representatives in a minority position. In addition, even if the present governments of the candidate member countries are serious about inflation and submit themselves to the disinflationary process, they do not commit future national representatives in the ECB to the same monetary policy stance. Governments change, and so do preferences with respect to inflation. The fact that, for example, Italy has reduced its inflation rate in recent years so as to be accepted in the monetary union, will not bind the Italian representative in the ECB in the future to follow the same low inflation policies. At that time the policies of the present Italian representatives will have become irrelevant. The only relevant constraint after the entry into the third stage will be the fact that the ECB is politically independent and that its statutes commit the ECB to a stable monetary policy.

2.3.2 Fiscal convergence

The monetary convergence criteria are supplemented in the Maastricht Treaty by restrictions on public debt and public deficits. According to the Treaty, member states shall regard their economic policies as a matter of common concern (Article 103) and must coordinate them to achieve the community's objectives. Governments cannot, however, be penalized for failing to coordinate their policies. In contrast, if a non-sustainable financial position in the sense of Article 109j is found by the Commission, a complicated procedure is set in motion which may lead to serious consequences for the member states. Article 104c determines this procedure in response to excessive deficits. If a member state is
in a non-sustainable financial position, which is given when it exceeds the
reference values provided in the Protocol on the excessive deficits procedure -
60% of its GDP for the government debt and 3% of its GDP for the public deficit
- the Commission prepares a report for the Council. The Council decides on the
matter and may make corresponding recommendations to the member state
which are aimed to bring the situation to an end "within a given period". If the
member state does not respond appropriately to the recommendations of the
Council, they may be made public. Eventually, if the member state still fails to
put an end to the situation, the Council may apply one or more of four measures:
(i) The member state may be required to publish additional information before
issuing bonds and securities. (ii) The European Investment Bank may be advised
by the Council to reconsider its lending policy towards this member state. (iii)
The member state may be required to make a non-interest-bearing deposit until
the excessive deficit has been corrected. (iv) The Council may impose "fines of
an appropriate size" on the member state. It follows that, "in the long-run", the
violation of the excessive deficit criterion may lead to quite drastic consequences
for the economies. If a country fails to avoid an excessive deficit, due to Article
109j, it will also not be allowed to enter into the third stage. In contrast to the
monetary convergence criteria stated in Article 109j, which will be redundant,
the fiscal criteria will be of importance even after entry into the third stage. While
the fact that they are binding for member states, even after the adoption of a
common currency is, in principle, an advantage, there remain several problems
associated with the fiscal criteria. Indeed, the fiscal criteria have been subject to
substantial critique by economists [see Giovannini and Spaventa, 1991; Buiter, 1992; Goodhart, 1992; Hasse, 1992; Buiter et al., 1993; De Grauwe,
1994].

A look at the public debt rates of the present EU member states shows that
most countries will have great difficulties to fulfill the criterion. In 1990, at the
time of the beginning of stage one of monetary union, six countries had debt
ratios that exceeded the reference value. By 1993 this number had risen to 10
countries and in 1995 only four countries (France, Germany, Luxembourg,
United Kingdom) were below the public debt reference value. Thus, the public
debt situation has deteriorated in recent years. Indeed, for some countries the
fiscal criteria are out of reach for the foreseeable future.
Take the relation between government deficits and government debt.

\[(2.4) \quad \Delta b_t = g_t - t_t + (i - x - \pi) b_t - 1\]

where \(b_t\) is the debt to GDP ratio and \(\Delta b_t\) is the change in public debt relative to GDP, thus the public deficit (relative to GDP). \(g_t\) is the primary government spending as a percentage of GDP; \(t_t\) is the tax rate; \(i\) is the nominal interest rate; \(x\) is the rate of growth of real GDP and \(\pi\) is the rate of inflation. \((g_t - t_t)\) is then the primary deficit rate in the economy. If we combine the primary deficit rate with the interest payments on previously accumulated debt, we may rewrite equation (4) as in

\[(2.5) \quad \Delta b_t = \text{def}_t - (x + \pi) b_t - 1\]

where \(\text{def}_t = g_t - t_t + i b_t - 1\). Equations (4) and (5) give a dynamic relation between public debts and public deficits. To stabilize the government debt at 60% of GDP, the budget deficit must be brought to 3% of GDP if and only if the growth rate of nominal GDP is 5% [Buiter, 1992]. Based on these values, Figure 2.5 displays the simulated adjustment process for EU economies.

It will take long for the highly indebted countries to fulfill the fiscal criteria. For those countries with a current public debt that exceeds 100% of GDP, for ex-
ample, it will take more than 40 years to reach the reference value, provided that the annual deficit does remain at 3% of GDP\textsuperscript{24}. It is ex post somewhat surprising that such harsh fiscal criteria were accepted by the member states' governments. It may partly be explained by the fact that initially, in the end of the 1980's, the fiscal situation in most of the European countries was far better than now.

**Figure 2.5.:**

Public debt adjustment process in selected EU countries

![Graph showing public debt adjustment process in selected EU countries](chart.png)

Source: Own calculations.

Apart from the unrealistic determination of the fiscal criteria, an immediately obvious point for critique in the formulation of the convergence criteria refers to the arbitrary numerology [e.g. Buiter, 1992]. These numbers are not on reason, they could just as well have been values like 10 or 46\textsuperscript{25}. The arbitrary nature of the criteria is, however, to a large degree inherent in the methodology of imposing any numerically specified barriers of entry in advance of monetary union\textsuperscript{26}.

The problem of creative accounting, that is, for example, the invention of new fiscal programmes so that necessary expenditures can be placed "off budget" and therefore "put off ratio", is not tackled [Hughes Hallett and Scott, 1992]. Indeed, by using the nominal gross debt of the general government, in contrast to
the net non-monetary liabilities of the consolidated general government and central bank, the criteria encourage creative accounting [Buiter et al., 1993]. It is thus likely to be a relevant issue in the transition process. The public debt in Germany, for example, amounted to 50.2% of GDP in 1994 and jumped to 58.6% in 1995. The reason for this extraordinarily strong increase in the amount of public debt is not, or only to a minor extent, deficit spending by the German government in this year, but rather the belated change in the fiscal accounting system related to German unification. Bovenberg et al. (1991) emphasize that different financing of government pension obligations to its employees affect its long-run financial position. In the Netherlands, for example, supplementary civil service pensions are essentially funded, while in Germany and France public-sector pensions are essentially unfunded. While these differences may be taken into account statistically, they induce potential for accounting transfers. Moreover, the criteria do not make any allowances for cyclical factors or for growth of foreign assets. Growth rates of real GDP, for example, will continue to differ across countries in Europe. Convergence of living standards requires that poor countries grow faster than rich ones. Countries with a higher growth rate can indeed support a higher deficit-GDP ratio without solvency problems (see equation 2.5).

These points of critique refer largely to the particular formulation of the criteria. They could have been taken into account by policymakers relatively easily. In addition, however, there are several fundamental issues associated with imposing fiscal restrictions in advance of an introduction of a single currency, to which I turn next. The emphasis thus turns more to the economic rationale of fiscal restrictions in advance of monetary union per se. Two reasons have been noted for imposing fiscal restrictions in advance of EMU. One refers to an international externality associated with a country's public deficit, the other applies to the consequences of non-sustainable fiscal policies for the member states in a monetary union.

Fiscal policies within one country may exhibit negative externalities for the other economies [e.g. Bovenberg et al., 1991]. The mechanisms involved may be described as follows. An expansionary fiscal policy in the domestic country, which is, with unchanged government revenues, associated with higher budget deficits, has two effects. On the one hand, in the short-run, it leads to an increase in aggregate demand and to higher output growth in the country. On the other hand, it implies a higher demand for capital and, with the supply of capital fixed, a higher rate of return on capital. A higher interest rate depresses investment demand and affects aggregate demand negatively. The higher public deficit will
force the government to raise taxes in the future, both to service the new debt created by the budget deficit and to cover the increase in interest payments on the existing stock of debt. This increase in taxes will reduce the future capital stock and future output growth, as far as taxes are distortionary. An increased interest rate in the domestic country will, with integrated capital markets, additionally affect the interest rate in foreign countries. Thereby foreign countries will have to bear part of the costs associated with the public deficit in the domestic country. In other words, there is a negative effect for the foreign countries in relation with a higher public deficit in the domestic country.

How likely to be relevant are these kind of externalities? De Grauwe (1989, 1994a) argues that they will be of relatively little importance. He points out that an increased demand for capital will in general be satisfied by the international supply of capital and will possibly not lead to a rise in interest rates at all. This view is based on the fact that world capital markets are becoming increasingly integrated and efficient, so that interest rates are becoming more and more equalized everywhere and no single country maintains the ability to affect them. Kenen (1995), however, argues that this argument applies only to small economies and that public debt in relatively large economies like Germany or Italy would probably affect the union's interest rate. The second argument for an international surveillance of national fiscal policies is associated with the solvency problem of sovereign debtors. A debtor is said to be solvent if his obligations are not larger than the present value of the revenue stream available to service them. This implies the solvency condition that the growth in nominal GDP, which determines the extra revenue stream available for servicing, must be at least as great as interest payments (see equation 2.5). A solvency problem of a member state of the EU, and in particular a default of a member state, it is argued, may involve international spillover effects. In general, if a government fiscal programme is not solvent, its options are either to raise taxes / cut expenditures to remain within the limits, to finance the deficits by money creation, or by transferring the responsibility for the debt to other governments or the central bank. The government may then be obliged to turn increasingly to the union's capital markets, driving the interest rate upward [Hughes Hallett and Scott, 1992]. In addition, it is feared that the new ECB may be forced to monetize the budget deficits, which would imply a higher inflation rate and an associated welfare loss for the other countries, or that the defaulting government may ask for a net transfer from the solvent governments. Moreover, a national debt default may have adverse systemic effects on the EU-wide financial system.
or its key components, the banking system and the payments system. A financial panic and liquidity crisis could be the result [Buiter et al., 1993].

The Maastricht Treaty intends to deal with the potential consequences of national default by including a "no bail-out" principle. Article 104b states that: "The Community shall not be liable for or assume the commitments of central governments, regional, local or other authorities, other bodies governed by law, or public undertakings of any Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A Member State shall not be liable for or assume the commitments of central governments, regional, local or other authorities, other bodies governed by public law or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project". That is, if a member government fails to service its debt, the defaulting country will bear the consequences of such a fiscal crisis itself. The Treaty thus attempts to prevent the negative consequences of one country's default through a binding precommitment of the member states to carry the sole responsibility for the own debt themselves.

The effectiveness of the no bail-out clause depends on whether it needs to be enforced, and whether it can be enforced. The need for enforcement of the rule is contested [see e.g. Scheide and Trapp, 1991]. If the Italian authorities, for example, were to continue issuing large amounts of debt, they would have to pay a growing sovereign risk premium on the Italian interest rate. Eventually, the Italian authorities would be unable to sell debt in any currency at any rate of interest. The risk premium is country-specific and is paid solely by the Italian government without affecting other countries. Thus, with markets pricing risk accurately, the default of a member state would not involve negative international spillover effects. While the ability of markets to evaluate risk accurately is contested, financial innovations and financial integration may contribute to increasingly accurate risk evaluations in the future. The ability to enforce the no bail-out clause may be restricted by political pressure. The defaulting government may ask the ECB to acquire debt or solely to adjust its monetary policy to the need for low interest rates. While the enforcement of the no bail-out clause depends ultimately on the political will to do it, the Treaty has made clear that to achieve a sustainable financial position is within the responsibility of national governments and of their own citizens. In addition, the political pressure to organize a bail out is not necessarily higher when indebted countries default while they are members of the union than while they are not. When, for example, Italy is not allowed in the union, one can expect that a default will also put a lot of pressure on the other EU members to bail out the Italian government [De...
Grauwe, 1996]. The effectiveness of the no-bail out clause is thus likely to be relatively low.

De Grauwe (1996) reformulates the time inconsistency problem of low-inflation policies in EMU due to government debt. The problem stems from the fact that an unanticipated component of inflation affects the nominal budget constraint, i.e. inflation that is higher than expected lowers the nominal debt burden. Fully anticipated inflation, in contrast, does not lower the debt burden. It follows that there is a trade-off between the tax rate and the inflation rate, i.e. an unexpected increase in inflation allows the government to reduce taxes while keeping the solvency constraint intact. This trade-off, however, holds only if inflation is unanticipated. In equilibrium, with rational private agents who take this information into account in forming their inflation expectations, the public will anticipate the inflation surprises and hence render them ineffective. As a consequence, the inflation rates will be relatively high in the long-run, without a positive effect on the debt burden. He emphasizes that the convergence requirements may lead to higher than necessary economic adjustment costs. The reason is that if a disinflationary strategy is not fully credible, an observed decline in inflation is not matched by a decline in the expected inflation. The debt burden is thereby increased. The authorities must therefore increase taxes just to prevent the debt to GDP ratio from increasing. Thus, the convergence requirement makes debt reduction more difficult when, as in the case of Italy, a credible anti-inflationary policy is difficult to follow. He concludes that the Maastricht convergence requirements increase the costs of the debt reduction.

While there are pros and cons, the economic case for the convergence criteria seems rather weak. The main arguments against the monetary convergence criteria may be summarized as follows. Exchange rate volatility is not the right indicator for economic convergence, since exchange rate movements may not be associated with macroeconomic fundamentals. In advance of monetary union financial volatility is to be expected, which may imply speculative attacks due to self-fulfilling expectations. The long-term interest rate criterion does not necessarily provide accurate information on convergence, since observable interest rates incorporate all sorts of expectations. Interest rates may be distorted by markets' expectations on the governments' own actions. With respect to inflation rates, the important determinant of price stability is the independence of the European Central Bank. The inflation rate criterion does not provide any additional guarantee with respect to price stability in the union. If the case for the monetary convergence criteria is weak, the economic rationale for the fiscal criteria is even weaker. Countries have to follow sustainable fiscal policies
irrespective of the monetary regime [Buiter and Kletzer, 1991]. There is indeed a
general conviction among economists that ex ante limitations on debts and
deficits are not an appropriate way to secure the sustainability of a financial
system. It seems most relevant to strengthen the applicability of the criteria after
the adoption of a common currency.

We may conclude, on the one hand, that macroeconomic stability in the
future monetary union may be achieved although the criteria are not fulfilled.
Public deficits, for example, in excess of the Maastricht Treaty's reference value
would not put a threat on the solvency condition of the government and,
correspondingly, on the stability of the union, as long as the rate of economic
growth in the country is sufficiently high.

On the other hand, the fulfillment of the criteria does not guarantee
macroeconomic stability in the future monetary union. If the ECB decides to
pursue an inflationary monetary policy, price stability would be endangered
although all criteria might have been fulfilled in advance. In other words, the
fulfilling of the convergence criteria is neither necessary nor sufficient for
macroeconomic stability in the future monetary union in Europe.

At the meeting of the European Council in Dublin in December 1996, the
heads of state have agreed on a stability pact, which is supposed to provide
additional security with respect to macroeconomic stability within the union. The
compromise reached between Germany and France does not incorporate fully
automatic sanctions in response to excessive deficits, as it was proposed by the
German government. The stability pact does, however, complement the rules
determined in the Maastricht Treaty by providing additional safeguards that aim
to secure macroeconomic stability in the union. In case of failure of a member
country to satisfy the stability criteria, sanctions in form of fines and non-
interest-bearing payments are defined. However, the formulation of the stability
pact does leave room for interpretation, which renders budgetary policies within
the union open to political discretion, as has been criticized by Siebert (1997) and
Vaubel (1997).

2.4. Convergence criteria and economic theory

In this section, the nominal convergence criteria of the Maastricht Treaty are
contrasted with convergence criteria suggested by economic theory. While we
have seen in the previous section that the economic rationale of the convergence
criteria is weak, in this section it is analyzed whether they address the
economically most relevant variables. I refer to the theory of optimum currency
areas (OCA) to derive "economic reference criteria", which can be compared to the criteria determined in the Maastricht Treaty. A currency area between two or more countries means that those countries agree to irrevocably fix their exchange rates. Thus, the central point about a currency area is that, when countries proceed to join one, they give up the possibility of allowing the exchange rate between their own currency and those of the other members of the union to vary. The formation of a currency union implies benefits and costs for the participating countries. The benefits stem mainly from having a single currency to use over a wider area. The underlying idea is that money, in general, facilitates transactions and thereby increases economic efficiency to a situation of barter. The social benefit derived from money is, moreover, enhanced by stability in its value, that is, by price stability. The widest possible use of a single money that exhibits such stability would minimize transaction costs and maximize its international role.

The major cost involved in participating in a currency area, or forming a monetary union, is foregoing the use of the nominal exchange rate as a tool for macroeconomic adjustment. In other words, when participating in a currency area, a country relinquishes an instrument of economic policy and loses its ability to conduct a national monetary policy. The size of this cost will depend on several factors; factors that have been suggested by the OCA theory. The theory of optimum currency areas has been developed originally in the 1960's and 1970's and compares the economic costs of a fixed exchange rate regime with the economic costs of a flexible exchange rate regime. By doing so, it obtains certain characteristics, or preconditions, of participants in a monetary union, which will be listed with a brief explanation of their rationale below.

(i) Factor mobility

Countries with a high degree of factor mobility are considered suitable candidates for monetary integration, since factor mobility is a substitute for exchange rate flexibility in international adjustment to shocks. If wages and prices are sticky, real exchange rate depreciation can only be accomplished through nominal exchange rate changes. However, depreciation would be ruled out if the two regions were part of a monetary union. Therefore, Mundell (1961) argued that unless factors of production can freely move between regions, shifts in demand facing a region relative to another may lead to unemployment in the absence of flexible exchange rates.

(ii) Wage and price flexibility

When shocks have asymmetric effects across countries, a movement of the real exchange rate is required to restore macroeconomic equilibrium. If wages and prices were to adjust instantaneously, they would induce a prompt re-equili-
brating response of the real exchange rate and there would be no loss from relinquishing the nominal exchange rate. Thus, when prices and wages are flexible between regions, the transition towards adjustment between regions is less likely to be associated with unemployment in one region and inflation in another, diminishing the need for exchange-rate adjustment and the introduction of a single currency is facilitated. Masson and Taylor (1993) point out that it is important to distinguish between two types of wage and price flexibility: real and nominal. Changes in a nominal price like the nominal exchange rate are a substitute for domestic price or wage changes, and may facilitate real adjustment. In the limiting case of perfect real wage rigidity, for instance, due to complete indexation of wages, employment and net exports would be unaffected by nominal exchange rate changes. In the other limiting case of perfect flexibility of real wages, the freedom to modify the nominal exchange rate can be helpful in the case of nominal wages being sticky but redundant in the case of nominal wages or prices themselves being flexible enough to do the job of altering real exchange rates. In other words, the usefulness of changes of the nominal exchange rate in response to asymmetric shocks depends on the nature of the rigidity. While the nominal exchange rate may be used in a case of a nominal rigidity, it is of no help in the case of a real wage rigidity.

(iii) Fiscal integration

Budgetary transfer payments between two countries help reduce the negative effects of shocks on real economic activity. When a country joins a monetary union, fiscal policies become an important stabilization instrument for member governments to react in response to asymmetric shocks. Indeed, with monetary policy not being feasible in a fixed exchange rate system, fiscal adjustments remain the sole macroeconomic policy instrument. Fiscal adjustments need not involve discretionary policy, but rather can be the result of the operation of automatic stabilizers. A possible complement is a system of fiscal taxes and transfers between members of a currency union, thus a form of fiscal federalism. Currency areas are therefore optimum if there is also a willingness to undergo fiscal integration and hence to centralize a significant part of the national budgets to the European level\textsuperscript{36}. In addition, if such a centralization of the national government budgets in a monetary union is not possible, national fiscal policies should be used in a flexible way. The fiscal convergence criteria of the Maastricht Treaty do, however, reduce the fiscal flexibility for member governments and thereby put an additional limitation on member states macroeconomic policies.

(iv) Openness of the economy
Open economies tend to be suited for systems of fixed exchange rates, as exchange rate movements have relatively weaker effects on real competitiveness. In order to maintain external balance in the face of an asymmetric shock, resources in a fully employed economy must be shifted toward production of traded goods and away from non-traded goods sectors. The smaller the non-traded goods sector, the larger the exchange rate change needed to transfer a given amount of resources, and the larger the movement in internal prices that would result. Open economies thus tend to prefer fixed exchange rate arrangements as exchange-rate changes in such economies are not likely to be accompanied with significant effects on real competitiveness. This criterion also implies that smaller countries are better suited for monetary union than large countries.

(v) The degree of commodity diversification

If a country produces a wide variety of goods, and shocks occurring either to the supply side or as shifts in relative preferences, then the effect of any shock on output will be less than the effect on individual sectors. Diversified economies are thus regarded as better candidates for monetary union, since a high level of diversification offers protection against the effect of shocks specific to particular sectors.

(vi) Similarity of inflation rates

If inflation rates are similar, a smooth flow of current account transactions can be expected. Consequently, monetary unions are optimum if the inflation rates in member states are similar.

(vii) The degree of goods market integration

Terms-of-trade shocks have a symmetric impact in countries with similar production structures, so that the exchange rate is redundant as an adjustment instrument. Accordingly, countries with similar production structures are better candidates for monetary union.

(viii) Volatility of real exchange rates

As the aforementioned characteristics are difficult to quantify, it has been suggested that the volatility of real exchange rates should be used as an all-embracing criterion for admission to a monetary union. The smaller real exchange rate fluctuations have been in the past, the better suited a country is for membership of a monetary union.

(ix) Political factors

Finally, the political desire for monetary integration is emphasized as a deciding factor for the success of monetary union.
To summarize, exchange rates can be fixed, and a monetary union is optimal, according to the theory of optimum currency areas, if the structure of the economies is "similar" and if goods and labor markets react flexibly to real economic changes\textsuperscript{37}. If these theoretical characteristics of an optimum currency area are compared with the nominal convergence criteria laid down in the Maastricht Treaty, a striking discrepancy between economic theory and political reality is to be noticed. The Maastricht convergence criteria are nominal criteria, whereas the characteristics suggested by economic theory relate to real economic activity\textsuperscript{38}. It has therefore been argued that real economic convergence is an important prerequisite for EMU [see e.g. Heylen et.al 1995; Schmidt and Straubhaar, 1995]\textsuperscript{39}. If real economic convergence does not occur, the argument goes, and if economic and monetary union prevents individual regions from taking specific economic measures in order to respond effectively to shocks, there is a danger of pronounced regional differences in unemployment, incomes and growth. In addition, Heylen and Van Poeck (1995) emphasize that an EMU encompassing partners with unequal real performance may experience much conflict about the stance of monetary policy of the union's central bank. All other things being equal, member states with a high unemployment rate will argue for a more expansionary policy than countries with a low unemployment rate, which will lead to differences in opinion as to the correct way to conduct monetary policies. Goodhart (1995) argues that politicians may blame depression on EMU and will start to advocate the retreat from monetary union, which will endanger the political and economic stability in the EU. Moreover, the Maastricht Treaty itself determines real economic convergence as a policy goal of the Community. In its Article 2, the Treaty includes economic and social cohesion as a fundamental principle the Community seeks to respect. Article 130a states that: In order to promote its overall harmonious development, the Community shall develop and pursue its actions leading to the strengthening of its economic and social cohesion. In particular, the Community shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least-favoured regions, including rural areas. It follows that real economic convergence in the European Union is desirable both for economic and juridical reasons. While not a technical necessity, real economic convergence is helpful for the working of the monetary union.
2.5. Reconsidering the transition process

The Maastricht Treaty has determined a transition-automatism that will lead to monetary union of at least two countries by the end of the decade. If the Maastricht convergence criteria are, however, largely inconsistent, as has been argued in the previous sections, and, furthermore, are unlikely to help in advancing EMU for all but a few member states, it remains to think about better ways to achieve EMU. The proposals made by economists range from imposing additional hurdles in advance of European monetary union in order to make the existing entry barriers more effective to a de facto abandonment of the Maastricht Treaty convergence criteria. In this section, some of the main reform proposals are presented.

Several suggestions for reform have argued in favor of alternative, and additional, convergence criteria. It is maintained that, because the present convergence criteria do not guarantee macroeconomic stability, additional indicators need to be used. De Grauwe and Gros (1991) and Gros and Thygesen (1992) propose the adoption of an overall "EMU indicator", which takes into account of a broader macroeconomic framework. They argue that the inclusion of supplementary economic indicators in the Commission and EMI reports, based on Art. 109j, is evidence that there will also be efforts to see the main convergence criteria in a broader macroeconomic framework. The value of the indicator is given by the sum of five variables: inflation (CPI), public sector deficit in per cent of GDP, the public debt surplus (in per cent of GDP) needed to bring the national debt to GDP ratio to the reference value of the Treaty within ten years, the unemployment rate, and the external current account balance in per cent of GDP. The proposed indicator differs from the formal convergence criteria of the Treaty in three aspects: first, it uses an absolute standard in all respects rather than relative inflation measures, second, by aggregating the various indicators extra creditable performance in one respect is allowed to compensate for deficient performance in other respects and, third, it incorporates explicitly convergence of real economic activity.

Table 2.2. and Figure 2.6. display the composition of the EMU indicator for 1994. The figure shows that there is a group of about seven countries with quite "good" macroeconomic performance, consisting of Germany, Austria, Denmark, the Netherlands, France, Ireland, and the United Kingdom. Implicitly, Luxembourg is to be added, because it is not included in the figure due to its...
### Table 2.2.: EMU indicator (1994)

<table>
<thead>
<tr>
<th>Country</th>
<th>Budget deficit</th>
<th>Debt indicator</th>
<th>CPI</th>
<th>Unempl. Rate</th>
<th>Current account deficit</th>
<th>EMU indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>4.20</td>
<td>-1.33</td>
<td>3.00</td>
<td>6.00</td>
<td>1.10</td>
<td>12.97</td>
</tr>
<tr>
<td>Belgium</td>
<td>5.30</td>
<td>5.60</td>
<td>2.40</td>
<td>10.00</td>
<td>-4.80</td>
<td>18.50</td>
</tr>
<tr>
<td>Denmark</td>
<td>4.20</td>
<td>-0.36</td>
<td>2.00</td>
<td>10.20</td>
<td>-2.80</td>
<td>13.24</td>
</tr>
<tr>
<td>Finland</td>
<td>4.60</td>
<td>-1.92</td>
<td>1.10</td>
<td>18.70</td>
<td>-2.40</td>
<td>20.08</td>
</tr>
<tr>
<td>France</td>
<td>5.70</td>
<td>-3.07</td>
<td>1.70</td>
<td>11.30</td>
<td>-0.80</td>
<td>14.83</td>
</tr>
<tr>
<td>Germany</td>
<td>2.70</td>
<td>-2.88</td>
<td>3.00</td>
<td>7.30</td>
<td>1.80</td>
<td>11.92</td>
</tr>
<tr>
<td>Greece</td>
<td>13.10</td>
<td>3.41</td>
<td>10.90</td>
<td>10.20</td>
<td>0.80</td>
<td>38.41</td>
</tr>
<tr>
<td>Ireland</td>
<td>2.30</td>
<td>1.27</td>
<td>1.90</td>
<td>17.70</td>
<td>-7.90</td>
<td>15.27</td>
</tr>
<tr>
<td>Italy</td>
<td>9.70</td>
<td>4.64</td>
<td>3.90</td>
<td>11.80</td>
<td>-1.50</td>
<td>28.54</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3.80</td>
<td>-0.10</td>
<td>2.80</td>
<td>10.00</td>
<td>-1.80</td>
<td>14.70</td>
</tr>
<tr>
<td>Portugal</td>
<td>7.10</td>
<td>-0.90</td>
<td>5.30</td>
<td>6.10</td>
<td>1.60</td>
<td>19.20</td>
</tr>
<tr>
<td>Spain</td>
<td>6.80</td>
<td>-1.60</td>
<td>4.70</td>
<td>22.40</td>
<td>1.00</td>
<td>33.30</td>
</tr>
<tr>
<td>Sweden</td>
<td>11.20</td>
<td>0.07</td>
<td>2.20</td>
<td>7.70</td>
<td>-0.40</td>
<td>20.77</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6.80</td>
<td>-2.89</td>
<td>2.50</td>
<td>9.40</td>
<td>0.40</td>
<td>16.21</td>
</tr>
</tbody>
</table>

**Figure 2.6.: EMU indicator (1994)**

Source: Own calculations.

A large current account surplus, which would make appear it belonging to a group of its own. This group is quite homogeneous in terms of the EMU indicator, which ranges from 11.92 for Germany to 16.21 for the United Kingdom.
This group is followed closely by Belgium and Portugal, with the EMU indicator ranging between 18.5 and 19.2. Belgium has well-known problems with its public deficit, although it outperforms most other countries in terms of inflation and with its large current account surplus. Finland and Sweden follow closely. These two countries, however, are the first countries to perform weaker than the average value of the EMU indicator, which is 19.8.

After these groups there is a gap before the rest of the EU economies, Italy, Spain and Greece, follow with values for the EMU indicator between 28.5 and 38.4. The poor position of Italy is due to its poor public deficit and public debt performance. The situation is similar for Greece. Spain's poor performance in the EMU indicator is mainly due to its high unemployment rate.

The EMU indicator does provide a different picture of the convergence performance in Europe than the convergence criteria of the Maastricht Treaty. While the convergence criteria of the Maastricht Treaty would have been fulfilled by only two countries in 1994, Germany and Luxembourg, the EMU indicator suggests that a larger group of countries exhibit homogeneous macroeconomic performance. Depending on the concrete line to be drawn, a first group of countries in the third stage might consist of eight, may be even twelve EU countries.

Recently, in the spring of 1995, the British Government demanded "structural convergence", which aims at the inclusion of real convergence criteria. In their view, the fulfilment of real economic criteria should be a requirement for progress to further stages of integration in addition to the monetary and fiscal convergence criteria explicitly laid down in the Maastricht Treaty. The claim for real convergence criteria has been based on Article 109j, where it says that "the results of the integration of markets, the situation and the development of the balance of payments on current account and an examination of the development of unit labor costs and other price indices" be taken into account of when assessing progress towards convergence, which leads the British Government to consider the Maastricht criteria as "a necessary but not a sufficient condition to justify a single currency". Or as the governor of the Bank of England, Eddie George, for example, suggested in a speech in Paris on 31st January that differences in unemployment - whether cyclical or structural - should be taken into account before deciding whether to push ahead with EMU.

The British attempt to define real economic convergence criteria did not, however, go beyond the additions mentioned above. A far more concrete proposal for real economic criteria was published in March 1995 by the British branch of the US investment bank Goldman Sachs. They argue that Article 109j
suggests not only that the EU should examine differences in real exchange rates from their long term equilibria, along with any balance of payments difficulties which this might entail, but also that the phrase "the results of the integration of markets" could be construed to include other real factors, such as the unemployment rate or the rate of growth of GDP. According to this proposal, the following four real conditions should be met in addition to the monetary and fiscal criteria in order to be able to participate in EMU.

(i) The current economic growth rate of an economy should not diverge by more than ±1.5 percent from its long-run growth rate. The long-run growth rate is measured as the average over a 10-year period. This criterion is intended to ensure that the economic cycles of member countries are roughly synchronized.

(ii) A country's unemployment rate should not be more than 2 percentage points above the average of the EU. This is intended to ensure both that the amount of cyclical slack in different countries is similar and that the rate of structural unemployment - the NAIRU - in each country is close to the EU average. If the gap between the unemployment rate and the NAIRU is similar in each country, and the NAIRUs themselves are close together, we would observe that unemployment rates would be close together.

(iii) The deficit of the current account of the balance of payments should not exceed 2 per cent of GDP. This should primarily prevent EMU from causing a collapse in the exports of particular economies, because the devaluation option is then no longer available.

(iv) Competitiveness in relation to Germany must not have deteriorated by more than 10% since February 1987, the date of the last voluntary realignment. This criterion is designed to ensure that only countries, whose real exchange rate is close to the long-term equilibrium level, can join EMU.

Table 3 shows the extent to which the EU countries fulfil the real convergence criteria proposed by Goldman and Sachs. The degree of cyclical synchronization, as measured by the degree of convergence of real GDP, is quite high. A majority of member states would meet the criterion.

Similarly, with respect to the current account, this would not impose a problem for any of the countries, as no one is at present recording a deficit of more than 2 per cent of GDP. On competitiveness, those countries which fail the suggested criterion (Italy, Luxembourg, Sweden and Finland) all have greater competitiveness against Germany than permitted, mainly because of the post-ERM depreciations of the peripheral currencies in the last couple of years. This seems to be, according to Goldman and Sachs, less dangerous for a monetary union than the opposite case, even if it were to persist. With respect to unem-
ployment rate differences, most countries would meet the criterion, although there are wide differences in unemployment rates between Germany (7.3%) and several other member states, including France, Italy, and Spain, where unemployment rates are well into double digits.

To take into account of real convergence criteria would not throw up new obstacles for EMU. Strict numerology would suggest, as with the convergence criteria of the Maastricht Treaty, that only Germany and Luxembourg would have passed all preconditions in 1994.

Table 2.3: Real convergence criteria

<table>
<thead>
<tr>
<th></th>
<th>Real GDP growth within 1.5% of long-run growth rate</th>
<th>Unemployment rate (1994)</th>
<th>Current account deficit in % of GDP (1994)</th>
<th>Competitiveness against Germany (Feb. 1987 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>2.3</td>
<td>7.3</td>
<td>-1.8</td>
<td>----</td>
</tr>
<tr>
<td>France</td>
<td>2.4</td>
<td>11.3</td>
<td>0.8</td>
<td>108.3</td>
</tr>
<tr>
<td>Italy</td>
<td>2.4</td>
<td>11.8</td>
<td>1.8</td>
<td>123.9</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>3.9</td>
<td>9.4</td>
<td>-0.4</td>
<td>93.9</td>
</tr>
<tr>
<td>Spain</td>
<td>1.8</td>
<td>22.4</td>
<td>-1.0</td>
<td>109.5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.4</td>
<td>10.0</td>
<td>1.8</td>
<td>108.3</td>
</tr>
<tr>
<td>Belgium</td>
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<td>10.0</td>
<td>4.8</td>
<td>103.9</td>
</tr>
<tr>
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<td>4.6</td>
<td>10.2</td>
<td>2.8</td>
<td>103.1</td>
</tr>
<tr>
<td>Portugal</td>
<td>1.0</td>
<td>6.1</td>
<td>-1.6</td>
<td>---</td>
</tr>
<tr>
<td>Greece</td>
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<td>10.2</td>
<td>-0.8</td>
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<tr>
<td>Ireland</td>
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<td>Luxembourg</td>
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<td>3.3</td>
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<tr>
<td>Finland</td>
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<td>Sweden</td>
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<td>113.9</td>
</tr>
<tr>
<td>Austria</td>
<td>2.8</td>
<td>6.0</td>
<td>-1.1</td>
<td>105.5</td>
</tr>
</tbody>
</table>

1 Long-run growth rate is defined as the average growth rate between 1984 - 1994
2 Competitiveness to Germany within 10% range of the level in February 1987 (the date of the last "voluntary" realignment). Higher numbers indicate better competitiveness relative to Germany.

Source: Goldman Sachs (1995)

In other words, whereas the EMU indicator points to a broader group of countries than adherence of the Maastricht Treaty's convergence criteria would suggest, the adoption of real convergence criteria would not have much of an influence on the eventual participants in EMU. According to the broader
interpretation of Goldman Sachs, a core group of countries - Germany, France, Luxembourg, Austria and the UK - would qualify on virtually all measures, be them real or nominal.

While the introduction of additional convergence criteria could provide for more credibility, it is contested whether they would be in line with Article 109j of the Maastricht Treaty. Although Article 109j indicates that a broader macroeconomic framework will be taken into account, the adoption of specific real convergence criteria, as in the proposal by Goldman Sachs, would probably involve a revision of the Maastricht Treaty.

Several proposals aim to strengthen the institutional setting in the European Union. The economic rationale comes from the aforementioned issues of time-inconsistency and credibility. De Grauwe (1996) suggests to define and enforce a procedure for removal of the board of directors of the ECB should it fail to maintain price stability. Such a procedure would ensure future price stability, he argues, and would make the future ECB more accountable.

Gros (1995) suggests that countries that fail to satisfy the budgetary norms would not obtain a voting power on the board of directors of the ECB. Thus, his proposal foresees that countries like Italy and Belgium would be accepted into the union. However, as long as their budgetary house is not in order, these countries would not be allowed to take part in the decision process of the ECB. As a result, there should be less fear that heavily indebted countries may push the ECB to pursue too expansionary policies.

Hasse (1995b) makes a similar proposal. He argues that the excessive deficits procedure as determined in Article 104c of the Treaty is not sufficient to ensure budgetary discipline in EMU and suggests, as an extension to the procedure, a temporary suspension of the voting right of the government representative in the Council of Ministers. He proposes to extend the catalog of sanctions to be applied in the case of an excessive deficit in Article 104c as follows: - temporary suspension of the voting rights in the Council.

Kenen (1995) proposes to use the debt criterion to condition the deficit criterion, not, as present, to stand beside it. A low debt-country might be made to satisfy the present test - a budget deficit not larger than 3 percent of GDP. A high-debt country might be made to satisfy a more stringent test - a deficit not larger than, say, 2 per cent of GDP. It would not be necessary, he argues, to alter the indents in Article 104c, which pertain to the existing deficit criterion, but the qualifications concerning the trend in the debt ratio could be dropped. These changes are self-balancing, in that a high-debt country would have to run a smaller budget deficit. In addition, he proposes to change the present price-
stability test, which is in terms of relative inflation convergence, into an absolute one: A country's inflation rate must not exceed the smaller of two numbers: the one based on the showing of the three best performers and the other fixed at a certain percentage per year. Under this test, stage three can not start automatically in 1999 unless two or more countries have inflation rates below, say, 2½ percent. Thus, this kind of absolute restriction on inflation rate performance would contribute a more stringent test on prior nominal convergence.

De Grauwe (1994b) invokes the principle of free choice and suggests to let each country decide whether it wants to join. The Community would declare that the monetary union will start at a specific point in time. Each country would then be free to join the union. Such a principle allows Europe, as he argues, to surmount the obstacles to EMU. If, for example, Germany would feel that it is not in its national interest to join the union and to abolish the mark, it would be free to stay out. More generally, member economies may evaluate the costs and benefits of their entry into monetary union. Authorities, assuming that they maximize a macroeconomic social welfare function, can calculate the risks associated with core-periphery tendencies and may then decide, whether it makes sense to participate in the union or not. A monetary union based on free decision of participants would constitute, per definition, an optimum currency area. No government would decide to enter into the third stage if the costs exceed the benefits for the country. The principle of free choice is not without problems, however, as noted by De Grauwe himself. Incomplete information and myopia may distort the decisions of member governments, which may additionally be influenced by domestic political pressure. Incentives for strategic behavior of political authorities also exist. High-inflation countries have, because of gains from lower inflation and efficiency gains from monetary union, an incentive to join the union. In contrast, for low-inflation countries, the participation in such a union becomes unattractive. Low-inflation countries will not want to be part of such a union if the welfare loss of the additional inflation exceeds the efficiency gains of the union. While free choice is an appealing notion, political and juridical aspects leave some doubts. Member states of the European Union, except for the United Kingdom and Danmark, are, however, in principle, obliged to enter monetary union. Straubhaar and Schmidt (1996), therefore, argue that while the principle of free choice is economically appealing, it is politically unrealistic. In contrast, they propose a broad interpretation of the Maastricht Treaty's convergence criteria. In principle, they argue, each country should be able to join monetary union as soon as it wants. Each country may evaluate, if it is at all in its national
interest to participate. However, the "necessary preconditions" according to Art. 109j need to be taken into consideration.

Overall, a number of different reform proposals have been stated in the literature. One set of proposals suggests to implement additional convergence criteria in order to make the convergence requirements more consistent with the goal of macroeconomic stability. However, taking explicitly into account of additional criteria would probably involve a formal revision of the Maastricht Treaty. Another set of proposals is directed towards strengthening monetary and fiscal institutions. To solve the aforementioned time-inconsistency problems of monetary and fiscal policies, a strengthening of the ECB, in particular, is considered necessary. Finally, a self-selected monetary union is proposed. However, for political and juridical reasons, free choice does not seem to be a feasible policy option.

2.6. Concluding remarks

In this chapter, the transition process towards European monetary union is reviewed and the economic policy background of the subsequent empirical analyses discussed. The chapter started with a review of the design of the transition process as layed out in the Maastricht Treaty. The process is characterized by its long transition period and by its restriction on nominal macroeconomic indicators as barriers to entry into monetary union. It is emphasized that the Maastricht Treaty has created a transition-automatism to monetary union.

The subsequent analysis of the Maastricht Treaty's convergence criteria proceeds in two steps. First, the economic rationale of the convergence criteria is examined and, second, its restriction on nominal macroeconomic variables as barriers to entry is contrasted to characteristics of participants suggested by economic theory.

The main points of critique referring to the economic rationale of the criteria can be summarized as follows. Exchange rate volatility may not be the right indicator for economic convergence, since exchange rate movements are not necessarily determined by macroeconomic fundamentals. In advance of monetary union financial volatility is to be expected, which may imply speculative attacks due to self-fulfilling expectations. Expectations of a final realignment may lead to speculative crises before the final date. The long-term interest rate criterion does not necessarily provide accurate information on convergence, since observable interest rates do incorporate all sorts of expectations. Interest rates may indeed be
distorted by markets' expectations on the governments' own actions. With respect to inflation rates, the important determinant of price stability is the independence of the European Central Bank. The inflation rate criterion does not provide any additional guarantee with respect to price stability in the union.

The case for the fiscal criteria is similarly weak. Countries have to follow sustainable fiscal policies irrespective of the monetary regime. It is generally bad economic policy to apply rigid numerical restriction irrespective of the concrete situation of an economy. There is indeed a general conviction among economists that ex ante limitations on debts and deficits are not an appropriate way to secure the sustainability of a financial system. To secure a sustainable financial situation within EMU it seems most relevant to further strengthen the applicability of fiscal restrictions after the adoption of a common currency.

To derive "economic reference criteria", I refer to the theory of optimum currency areas. This theory implies that exchange rates can be fixed, and a monetary union is optimal, if the structure of the economies is "similar" and if goods and labor markets react flexibly to real economic changes. Moves towards monetary integration should therefore be undertaken if, first, the real economies of participating countries react to changes with similar rapidity and flexibility and, second, both the geographic and occupational mobility of labor is high. If these theoretical characteristics of an optimum currency area are compared with the nominal convergence criteria laid down in the Maastricht Treaty, a striking discrepancy between economic theory and political reality is to be noticed. The Maastricht convergence criteria are nominal criteria, whereas the characteristics suggested by economic theory relate to real economic activity. Thus, based on economic theory, the most relevant characteristics of participants in a monetary union refer to their real economic structure. Apart from being economically relevant, real convergence turns out to be desirable for political and juridical reasons, as Article 2 of the Maastricht Treaty itself includes social and economic cohesion as a fundamental principle the Community seeks to respect.

We conclude that while the transition process will probably culminate in the adoption of a common currency of at least two countries in Europe by the end of the century, the convergence strategy will not contribute to secure macro-economic stability in the future union. On the one hand, the monetary convergence criteria refer only to the transition period and their fulfillment is, therefore, irrelevant for future price stability. On the other hand, the budgetary norms, apart from being economically inconsistent, may be difficult to enforce due to political pressure. The concentration on nominal convergence is mistaken, because it does not take into account of real economic activity that will be most
relevant once the monetary union is achieved. Real economic divergence may lead to political pressure particularly in low-income, high-unemployment countries to increase public spending, which would contribute to higher public deficits and may involve a non-sustainable financial position in these countries. A non-sustainable financial position may, in turn, be associated with negative external effects on other member states. While the introduction of real convergence criteria would probably require a revision of the Maastricht Treaty, being therefore a non-feasible policy device, real economic convergence, as for its relevance in the monetary union, deserves to be assessed in more detail in order to evaluate the prospects of European monetary integration more carefully.
Endnotes

1 Here, as in the rest of the dissertation, I use the terms "third stage" and "European Monetary Union" interchangeably.

2 This section draws heavily on Kenen (1995).

3 The gradual approach to monetary union has been subject of critique from economists. See, e.g., De Grauwe (1994a), Dornbusch (1990). It has been argued that a quick move to monetary union would be a major regime change and would thus induce the changes in economic behavior required for convergence. On the earlier debate between "monetarists", who argue in favor of a kind of shock therapy, and "economists", who support the gradual approach, see Giovannini (1990a), Gros and Thygesen (1992).

4 The goals of stage one were [Gros and Thygesen, pp.350]: first, the member states should have taken steps towards independence of their central banks. Second, steps to prevent the monetary financing of public-sector budget deficits in each member state had to be taken. Third, all restrictions on capital movements were supposed to be removed. Fourth, all member states should have taken measures which would enable them to take part in the EMS. The passage to stage two was originally supposed to require the achievement of these goals.

5 See Monticelli and Vinals (1993) for an analysis of the institutional design of the ECB.

6 The Treaty goes on to say that the reports of the Commission and the EMI shall also examine the situation and development of the balances of payments and the development of unit labour costs and other price indices. This passage has been used to justify the examination of real convergence criteria, as will be discussed in more detail in section four.

7 This, however, implies that a government may be obliged to enter the third stage although it possibly evaluates the economic costs to be higher than the economic benefits for its country. In such a case, the Maastricht Treaty would impose a kind of irrational behavior on the economy and on its citizens.

8 Kenen (1995) points out that Germany cannot decide for itself whether to participate in stage three. While all decisions affecting the start of stage three will be taken by qualified majority voting, one decision thereafter, on the fixing of the values of the national currencies in terms of ECU, requires unanimity. The German government may thus be able to keep the monetary union from getting under way. Gros and Thygesen (1992, pp.392) note that the member states could, in principle, decide to renegotiate the EMU Treaty within the framework of the International Governmental Conference in 1996. They argue, however, that going back on the EMU Treaty would be a loss of momentum and prestige for European integration hard to imagine.

9 Two protocols have been attached to the treaty, for Britain and Denmark, allowing them to opt out of stage three.

10 Thygesen (1993b), for example, considers the present, wider bands as "normal" in the sense of the Maastricht Treaty. Crowley (1996) argues that the exchange rate criterion has been virtually dropped by the EMI.

11 The German Council of Economic Advisers (1995) interprets the convergence criteria as a means to secure the functioning of the then newly created monetary system, to provide credibility for the European Central Bank, and to establish the Community as a "Stabilitätsgemeinschaft", directed towards overall macroeconomic stability [Sachverständigenrat, 1995, pp.246].

12 For economic analyses of the transition process, see, e.g., Giovannini (1990a,b), Froot and Rogoff (1991), Mussa (1991).

13 The convergence criteria have been widely analyzed by economists. De Grauwe (1994a) contains a comprising analysis. Other analyses include Begg et al. (1991), Fratianni et al.


16 This view was labelled "economist" in the earlier debate on European monetary integration.

17 The Maastricht Treaty refers only to relative convergence of prices, i.e. relative to the three best-performing member states in terms of price stability. It has been argued, however, that absolute convergence of prices would have been more appropriate, because member states may still be threatened by absolutely too high inflation. See, e.g., Bean (1992) and Neumann (1992).

18 This was indeed the rationale for including the criterion, as has been argued by Bini-Smaghi et al. (1994).

19 For formal econometric evidence on credibility and interest rates, see, e.g., Lindberg and Söderlind (1992), Rose and Svensson (1993) for empirical evidence, Svensson (1994) for a survey on exchange rate based stabilization.

20 The classic references are Kydland and Prescott (1977), Barro and Gordon (1983a, b), and Rogoff (1985). For a survey of credibility and monetary policy games, see Blackburn and Christensen (1989); for a theoretical analysis of the EMS, see Giavazzi and Pagano (1988). See also Wagner (1995).

21 The influence depends on the degree of economic and political independence of the ECB. There is a general conviction among economists, as the statute of the ECB resembles the one of the Bundesank, that no reason to expect the ECB to be more subject to political influence than the Bundesbank exists. See e.g. Fratianni and Von Hagen (1992), Gros and Thygesen (1992), Monticelli and Vinals (1993), Vinals (1994).


23 The solution of the difference equation (5) is given by

\[ b_t = \left( b_0 - \frac{\text{def}_t}{(x+\pi)} \right) (1-x-\pi)^t + \frac{\text{def}_t}{(x+\pi)} \]

The first term on the right-hand side of this equation refers to the out-of-steady state behavior while the latter term refers to the steady state behavior of public debt. Public debt is stabilized when the latter term equals 0.6. Correspondingly, if we substitute 0.03 for the deficit, we need a rate of growth of nominal output of 0.05, thus 5% p.a, in order to achieve long-run stabilization of public debt.

24 See also Pauly (1996) for additional simulation experiments.

25 De Grauwe (1994b) suggest that the numbers were chosen so as to fit to the German economy, since during the 1980s the steady state debt level implied by Article 104c was consistent solely for Germany.

26 Buiter (1992) evaluates the fiscal criteria as follows: "It should be obvious (but unfortunately does not appear to be so) that elevating these reference values (or indeed any reference values) to international norms or standards is unadultered economic nonsense, and dangerous nonsense to boot".
The formulation of the criteria does give room for interpretation though, which may be used to take into account of these factors. However, no explicit adherence is made in the Treaty.

The systemic effects and the influence on the international financial system could, as noted by the authors, be limited through international action that would need to relieve the defaulting government of its debt burden.

Goldstein and Woglom (1992) provide empirical evidence for lacking ability of municipal bonds markets to anticipate the crisis of New York city in the 1970's. Frenkel and Goldstein (1991) point out that it is empirically not clear whether governments are sensitive to higher borrowing costs.

In general, since government debt is denominated in nominal terms, unanticipated inflation is a lump-sum tax on debt holders. Therefore, a low-inflation policy is not dynamically consistent as long as the government has nominally denominated debt [Calvo, 1978].

See Begg et.al. (1991), Bovenberg et.al. (1991), Kenen (1995), Van der Ploeg (1991), Wyplosz (1991). Eichengreen and Von Hagen (1995a,b) argue that only if monetary union was accompanied by fiscal centralization, a need for fiscal restrictions as a concomitant of EMU would arise.


The following chapter contains a literature review and an empirical analysis of optimum currency areas in Europe.

For surveys on the early literature on optimum currency areas, see Ishiyama (1975) and Tower and Willett (1976). More recent surveys are De Grauwe (1994a), Masson and Taylor (1993), and Tavlas (1993).

See Tavlas (1993) and the references therein.

The federalistic structure of Europe in relation with EMU has been subject of intense discussion among economists [e.g. Von Rompuy et.al. (1990)]. Empirical studies have tended to compare the fiscal structure of the United States with Europe, analyzing the extent to which the federalistic systems may be used for stabilization and cohesion purposes. Sachs and Sala-i-Martin (1992) found that in the United States the automatic income redistribution effects in the US offsets about 40% of regional income variations. Von Hagen (1992), using an alternative methodology that allows to separate a cohesion from a stabilization effect, obtains a stabilization effect of about 9 cents per US$. Bayoumi and Masson (1994) estimate the stabilization effect to be 31% and the cohesion effect at 22%. Italianer et.al. (1993) obtain 17% for the stabilization effect. It follows from these studies that fiscal redistribution effects are important in the United States. It is clear that in Europe the potential for these kind of fiscal stabilization and cohesion is not given. The EU budget is far too narrow and effectively restricted for these purposes. Bayoumi and Eichengreen (1994) provide simulations that suggest that for the US, state budgets provided about 14 per cent of the fiscal offset to income fluctuations. Von Hagen and Hammond (1995), however, show that stabilizing asymmetric shocks around a common trend may amplify the variance of GDP for some member countries. They conclude that the EU is indeed better off without a fiscal stabilization system.

The "new" theory of optimum currency areas incorporates modern concepts like rational expectations and a long-run Phillips-curve. The evaluation of the costs and benefits thereby changes. However, as the basic principle relating to the characteristics of participants remains unchanged, I do not go into detail of these additions. For analyses of these approaches, see Tavlas (1993), and De Grauwe (1994).

The view that real convergence is a prerequisite for a monetary and customs union would also follow from the belief that the geographical location of economic activity is subject to centripetal forces arising from closer economic integration. Such forces might be due, for
example, to the attractiveness of an already highly industrialized center - with an established infrastructure and other positive external economies - for the location of economic activity [Myrdal, 1957; Perroux, 1959]. More recent work on geography and trade confirms that centralization, which would imply economic divergence, is more likely the greater the size of available economies of scale and the greater the size of the mobile manufacturing sector. Centralization, and real economic divergence, is less likely the greater the size and importance of transport costs [e.g. Krugman, 1991; Krugman and Venables, 1995]. For an application of these theories to the case of European monetary integration, see Krugman (1993).

For an opposing view, see Buiter (1995).

Only reform proposals that are related to economic convergence as precondition in the EU are reviewed. Therefore, neither the reduction of the "democratic deficit" in advance of monetary union, claimed by Williamson (1993) and Eichengreen (1994) nor the choice of the band width is taken into account [Ohr, 1996].

These variables can be added because they are all dimensionless, i.e., they are all ratios or rates of change [see Gros and Thygesen, 1992 p.469].

See, for example, the speech by Prime Minister John Major on 3rd February, quoted in: Neue Zürcher Zeitung (foreign edition), No.31, of 8th February 1995.


In general, time inconsistency problems may be solved by either of four ways [Romer, 1996]: (i) reputation, (ii) delegation, (iii) punishment equilibria, and (iv) incentive contracts.

See also Hasse (1996), where a fiscal cooperation oriented towards budgetary discipline is proposed.

One drawback of this idea is, however, that it would, arguably, contribute to make the actions of the Council less accountable and could thereby lead to reduced political support for EMU. See Williamson (1993), who argues that the "democratic deficit" helps to explain the decline in political support for EMU.

Italianer (1993) proposes to change the reference values. Article 104c of the treaty instructs the Council of Ministers, acting unanimously on a proposal from the Commission, to adopt 'the appropriate provisions' to replace the protocol that contains the reference values for deficits and debt. He interprets this passage to mean that the Council can change the reference values.

Eichengreen and Frieden (1993) similarly view a dash to EMU as the first-best scenario on economic grounds. Alesina and Grilli (1993) argue, based on a formal model, that if a self-selected group of countries form a monetary union, they will have an incentive to exclude other countries that are not as strongly committed to price stability. This would lead to divisive forces associated with such a multi-speed approach.