

RESEARCH PAPER

EUROPE AND THE MAASTRICHT CHALLENGE

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Abstract

The uncertainty caused by the exchange rate crises of 1992-1993 led to two questions: Is monetary union still feasible? What strategies are best for achieving convergence according to the Maastricht criteria? This article addresses these questions by examining the progress made by the five major European Union countries in satisfying the Maastricht criteria and the two crucial impediments facing these countries --disparities in real exchange rate convergence and fiscal imbalances-- and alternative strategies to deal with these impediments.

Overall, our analysis suggests that the prospects for monetary union are less gloomy than many analysts believe. We show that wide bands have been useful in limiting competitive disparities. We also argue for more general fiscal criteria set forth in the Maastricht treaty. Under these more general criteria, countries that reversed the path of debt accumulation and achieved a sustainable deficit would be admitted to the monetary union. Finally, under a multi-speed transition a small group of countries will form the initial core of the monetary union, and other countries will join over time.

Key words: European monetary union, Maastricht criteria, real convergence and fiscal imbalances.

When the European monetary system (EMS) was founded in 1979, one of its general goals was the promotion of monetary stability among its members. The Delors report in 1989 made this goal more explicit by establishing a blueprint for the creation of a European monetary union (EMU) with a common currency. Three years later, the Maastricht Treaty set specific criteria that members were required to meet in order to achieve a monetary union by the end of the century. Progress toward monetary union was soon interrupted, however, by the exchange rate crises of 1992-93. The ensuing uncertainty has raised two questions: Is monetary union still feasible? What strategies are best for achieving convergence according to the Maastricht criteria?

To address these questions, this article examines the progress made by the five major European Union countries in satisfying the Maastricht criteria. We then examine two crucial impediments facing these countries --disparities in real exchange rate convergence and fiscal imbalances-- and alternative strategies to deal with these impediments.

MEETING THE MAASTRICHT CRITERIA: WHERE DO THE EUROPEAN UNION COUNTRIES STAND?

The Maastricht Treaty, signed on February 7, 1992, establishes four economic convergence criteria that must be satisfied before the scheduled completion of EMU in 1999. These criteria, detailed in the exposition of Article 104c of the treaty, are as follows: (1) the inflation rate, measured by the consumer price index, cannot exceed by more than 1.5 percent that of the three economies with the lowest inflation rates; (2) long-term interest rates may not exceed by more than 2 percent the average comparable interest rates in the three countries with the

lowest inflation rates; (3) the general government budget deficit cannot exceed 3 percent of GDP, and the gross government debt must be less than 60 percent of GDP; and (4) currencies must remain within normal fluctuation margins without realignments for two years before monetary union.

The four convergence criteria set forth in the treaty have presented different degrees of difficulty for the countries seeking monetary union. Chart 1 displays the time paths of the inflation rates, interest rates, debt, and deficits of the five largest countries --Germany, France, Italy, the United Kingdom, and Spain-- from 1979, the year the EMS was founded, through 1995.

Clearly, most countries have made substantial progress in satisfying the inflation and interest rate criteria since the early 1980s. Despite recent depreciation in the Italian lira and Spanish peseta, the inflation criterion is close to being met, even in traditionally high-inflation economies (Chart 1, Panel A). By 1993, most countries were in compliance with the interest rate criterion, although over the last year, Italy and Spain have strayed somewhat from the specified standard (Panel B). The evidence in Chart 1 also suggests that the European Union countries are willing and able to take the necessary policy steps to meet these criteria. While some analysts have argued that the progress toward satisfying the interest rate criterion is an accidental outcome of Europe's recent recession, panels A and B make it clear that the dramatic decline in interest rates and inflation had begun as early as the mid-1980s, when the European Union nations adopted disinflationary policies.

By contrast, fiscal criteria depict a more troubling picture. After 1990, both the debt and the deficit ratios worsened for almost all countries (Panels C and D). This development is explored in detail in the second half of this article. First, however, we look at the problems that

arose with the fourth Maastricht criterion, the requirement that the exchange rates remain within “normal” fluctuation limits.

EXCHANGE RATES AND COMPETITIVENESS

Until 1992, the “normal” fluctuation bands cited in the Maastricht Treaty were interpreted as narrow bands (± 2.25 percent around the central parity). Member countries sought to stabilize their exchange rates within these narrow bands in order to reach nominal convergence. However, nominal exchange rate stability triggered short-term capital flows into high interest rate countries, and monetary authorities were not able to restrain prices (Giavazzi and Spaventa 1990). Distortions of competitiveness ensued, reflected in the real appreciation of the exchange rate in Italy, Spain, and the United Kingdom. Competitiveness problems culminated in the 1992-93 exchange rate crises: the currencies of these three countries and others came under heavy attack by investors and speculators and were subsequently devalued sharply.

What was learned from the events of 1992-93? First, it became apparent that equating normal bands with narrow bands had precipitated many of the problems that led to the exchange rate crisis. Taking corrective action, the European countries widened the bands to ± 15 percent for an indefinite period. Italy and England chose to withdraw from the Exchange Rate Mechanism (ERM) altogether and allowed their currencies to float. Second, France’s efforts to peg its currency to the German mark and stick to the long-term goal of realizing monetary union enabled it to weather the crisis better than other countries. We consider these points in more detail below.

Wide bands in the transition to monetary union

Although the fluctuation bands were temporarily widened to ± 15 percent in the aftermath of the 1992-93 exchange rate crisis, the European countries have never formally adopted the wide bands as the normal fluctuation margins stipulated in the Maastricht Treaty. However, because of the many advantages they offer over narrow bands, wide bands will be the exchange rate regime most likely to prevail until the first group of countries form the monetary union in January 1999.

When wide bands were first introduced in 1993, they were met with scepticism and were associated with the collapse of the EMU. Since then, the markets have come to accept wide bands because a strong argument can be made in their favor. One indicator of the effectiveness of a particular regime is its performance in limiting the volatility of exchange rates. A comparison of post- and pre-crisis periods shows that under the wide-margin regime, the stability of real exchange rates has improved remarkably, despite an increase in volatility of nominal exchange rates (Table 1). Wide bands have also alleviated the disparities in competitiveness that arose after 1993. As we have seen, the currencies of Italy, Spain, and the United Kingdom were devalued following the crisis. By contrast, France and Germany have seen their currencies appreciate since 1993 (Chart 2, panel 2c). These differences in real exchange rates gave countries with depreciating currencies a clear competitive advantage. Adoption of wide bands has helped to contain these differences by reducing volatility and limiting the depreciation of currencies.

The wide-band regime is a transitory arrangement, and it has proven to be a successful transition tool to EMU. The flexibility of this regime allows economies of different convergence rates to coexist, and to absorb nonfundamental and temporary shocks without affecting each other's convergence process. Chart 3 shows that since 1992 the European currencies can be

divided into two distinct groups. One group consists of core countries of the ERM such as France, Belgium, Denmark, the Netherlands. The other group includes weaker currencies that either were in the wide bands (Portugal, Spain) or floating (Italy and the United Kingdom). Despite the 1992-93 foreign exchange crises, the core countries were successful in maintaining stable and moderately volatile bilateral rates with the Deutsche mark. Helped by intra-marginal interventions, the regime has worked as a *de facto* soft margin narrow band within the larger official bands, and enabled the core countries to impose a two-way risk to speculators.

In contrast, weaker currencies experienced higher volatility and systematic depreciation against the Deutsche mark. Although the wide-band currencies on average depreciated less and had lower volatility than the floating currencies, they still need relative price flexibility to adjust to real shocks because their convergence process is not yet complete.

Thus, the need for relative price flexibility justifies maintaining wide bands for weaker currencies during their transition to the monetary union. Since the wide-band regime turned out to be a good compromise, most observers agree that all countries that are candidates for monetary union would benefit from entering the ERM with wide margins, which alleviate market disorders and convert the progress in real convergence into higher exchange rate stability (Bayoumi and Thomas 1994).

Strength of the Franco-German Link.

The second lesson that emerged from the 1992-93 exchange rate crisis is the value of the French-German exchange rate link. Many think that this link is likely to be the prerequisite for the achievement of the EMU. Panel 2a in Chart 3 shows that the nominal French franc-German mark

exchange rate has remained remarkably stable since September 1987. The decline in consumer price inflation (Chart 1, Panel 1a) reveals that exchange rate stability in France has been based on competitive disinflation. France conducted a consistent monetary policy by pegging to the German mark and sticking to the long-term goal of realizing the monetary union (Blanchard and Muet 1993). At the same time, the interest differential with Germany, and therefore the risk premium associated with the French franc, has been declining (Chart 1, Panel 1b), suggesting that the French policy has been slowly validated by financial markets despite the 1992-93 exchange rate crisis. The robustness of the Franco-German link in nominal exchange rate extends to the real exchange rate depicted in Panel 1b of Chart 3. Its modest variation since 1987 stands in contrast with the huge real fluctuations of the other currencies against the German mark, reflecting the integration of both economies.

FISCAL CONSOLIDATION IN PUBLIC FINANCE

Since differences in real exchange rates and competitiveness are eased by the continued use of wide margins, the fiscal criteria cited in the Maastricht Treaty are now the main impediment to monetary union. One drawback of these criteria is that they are rigidly fixed and do not take into account cyclical factors that may adversely affect public finances and government indebtedness during a recession. A better measure of fiscal stands would incorporate the growth potential of the economies. In this section we discuss some alternatives to the current debt and deficit criteria that are flexible but still provide sound fiscal discipline. Interestingly, while these alternatives depart from the specific numerical standards set forth in the Maastricht Treaty's exposition of Article 104c, they are consistent with the more general language found in other

parts of the document.

For *public debts*, countries might benefit from adopting the standard articulated in broad terms in the treaty's Article 104c. This standard holds that a country's debt-to-GDP ratio must be "sufficiently diminishing and approaching the reference level at a satisfactory pace" before the country can qualify for membership in the monetary union. Thus, a country that has been successful in reversing the path of debt accumulation would satisfy the debt criterion.

A shift to this more general criterion would expand monetary union eligibility. The top panel of Table 2 presents annual growth in government debt ratios averaged over five-year periods. The last two columns display the OECD estimates and forecasts of debt ratios for the years 1995 and 2000 based on the assumption of fiscal restraint by governments. According to the 60 percent rule, Italy and Spain would still not qualify for membership in the year 2000 despite fiscal restraint (column 5). However, if the standard of declining debt is applied, Italy might join the countries satisfying the debt criterion in the year 2000 (column 3).¹ Spain's situation, however, is unclear. Although the rate of increase in government debt is substantially slower, it does not reverse its positive path.

For *public deficits*, a criterion based on the sustainability of fiscal policy could be used in conjunction with the numerical criterion. A sustainable policy can be defined simply as a policy leading to a stable debt-to-GDP ratio. To see the relation between the debt-GDP ratio, the GDP growth rate, and inflation, consider the following nominal government budget constraint:

$$G_t - T_t + i_t B_{t-1} = \Delta B_t \quad (1)$$

¹The negative number for Italy in the subperiod 1995-2000 is obtained from a decline in the debt ratio for three consecutive years.

where G and T are government spending and taxes, i is the yield on government debt, B is the stock of outstanding debt at time t , and ΔB represents the change in debt to finance the deficit. Since it is more convenient to write the government budget constraint as a proportion to GDP, we can divide both sides of equation (1) by nominal GDP and obtain the following expression:

$$g_t - \tau_t + (i_t - \pi_t - \eta_t)b_{t-1} = \Delta b_t \quad (2)$$

where small-cap letters represent the same variables as before as a proportion of GDP. The only difference now is that the yield on government debt is adjusted for inflation and growth. Equation (2) can also be expressed in terms of the total financial deficit-GDP ratio, d_t , which is equal to the sum of the primary deficit ($g_t - \tau_t$) and interest payments $i_t b_{t-1}$:²

$$d_t - (\pi_t + \eta_t)b_t = \Delta b_t \quad (3)$$

If government stops accumulating debt, it satisfies the sustainability criterion in the long run, and the budget constraint becomes:

$$d_t = (\pi_t + \eta_t)b_t \quad (4)$$

Equation (4) says that a country would satisfy this criterion if its deficit-GDP ratio equaled the rate of growth of nominal GDP multiplied by the debt-to-GDP ratio.³ In other words, a country could roll over its debt without paying it back as long as the deficit is consistent with the

²If the deficit is partially financed by money creation then d is interpreted as the deficit adjusted for money creation and seignorage revenues that arise from it.

³See Blanchard et al. 1990, Aglietta and Uctum 1995, Uctum and Wickens 1996 for a dynamic analysis of sustainable fiscal policy in European countries.

long-run growth potential of the economy.

However, despite being sustainable, the policy of setting the deficit-GDP ratio at a rate that keeps the debt-GDP ratio constant is not compatible with the declining debt criterion required by the Maastricht Treaty. Thus, a fiscal rule that would be consistent with the joint requirement of declining debt and a sustainable deficit is that the deficit-GDP ratio should be below the debt-GDP ratio adjusted for nominal GDP growth:

$$d_t \leq (\pi_t + \eta_t) b_t \quad (5)$$

The condition expressed in (5) would not only satisfy the sustainability criterion but also the declining debt requirement. The debt-reducing sustainable deficit criterion operates much like wide bands in providing the economy the flexibility it needs during crises. It gives room to maneuver to the economy, while a 3 percent rule chokes off the recovery, as has recently happened in most European countries. It provides an upper and a lower bound to the deficit depending on where the economy is in the cycle. If economic activity is slowing, the government can use the upper bound and let the deficit be equal to the growth-adjusted debt-GDP ratio (debt stabilizing policy). When the recovery takes off, the government can bring the deficit below the debt-GDP ratio and satisfy the lower bound (debt reducing policy).

The new deficit criterion is intuitive yet rigorous. It puts an upper limit on the government deficit consistent with the economic cycle. This requirement, in turn, ensures that the government will not crowd out private investment by absorbing private savings. If investment and saving are roughly equal, the government deficit does not put upward pressure on interest rates.

The new deficit/debt requirement would fulfill the spirit, if not the letter, of the Maastricht Treaty. In Article 109j, the treaty requires "achieving a sustainable financial position" while effecting convergence in long rates. In Article 104c, paragraph 3, the treaty specifies that should a country not fulfill the numerical criterion, "other relevant factors" will be taken into account (including the country's medium-term economic and budgetary position) in evaluating the sustainability of a country's financial status. In addition, since the sustainability rule excludes seignorage revenues (or inflation tax), it does not allow monetization of the debt and is, therefore, consistent with the inflation criterion of the treaty.

Thus, the concept of the sustainable deficit In conjunction with a declining debt ratio is not less strict than the 60 percent rule but consistent with a growth path that leads to an equilibrium of saving and investment at a given interest rate. It is also compatible with the German position that (i) countries' fiscal policy should have no negative effect on interest rates, and that (ii) the credibility of the future European Central Bank should not be affected by governments' solvency problems.

The new rule requires the deficit and the debt ratios to be related by a proportion equal to or less than the growth rate of nominal output. The lower panel in Table 2 compares the deficit performances of the five countries in 1995 and 2000, using both the 3 percent rule and the new rule. The calculations for 2000 are based on OECD forecasts of inflation, growth, debt-to-GDP ratios, and deficit-to-GDP ratios, under the assumption that these countries conduct policies in line with the convergence criteria.

In 1995, the sustainable deficit is about 3 percent for Germany and the United Kingdom, above 4 percent for Italy and Spain, and less than 3 percent for France (column 2). The diversity

in these numbers is explained by cross-country differences between nominal GDP growth rates, the debt-GDP ratios and the underlying primary balances. For example, Italy's substantial sustainable deficit-GDP ratio is due to its high debt-GDP ratio (126 percent) which is supported by an equally high nominal GDP growth (7 percent).⁴

All countries except Germany violate the 3 percent rule (column 1). However, Italy joins Germany in satisfying the sustainable deficit rule. Moreover, since both countries' total deficit-GDP ratios are below their respective sustainable deficit-GDP ratios, their debt-GDP ratios are declining, thus fulfilling the debt criterion as well. The other countries' total deficit-GDP ratios are above the sustainable levels, suggesting that they must impose fiscal discipline on government finances for the next five years if they are to qualify for membership in EMU.

Assuming that all countries follow tight policies, under the 3 percent rule Italy will still not be entitled to membership for the monetary union by 2000 (column 3). Under the new criterion, however, all five countries qualify to enter the monetary union this year, including Italy. All deficit-GDP ratios in the year 2000 are expected to be less than the sustainable deficit-GDP ratios (column 4), which means that the debt-GDP ratios are declining as well.

The two alternative fiscal criteria analyzed above allow candidate countries a more realistic fiscal discipline without penalizing those with an initial high indebtedness and/or those adversely affected by cyclical conditions.

⁴Italy has been running primary surpluses throughout the 1990s and is expected to continue doing so to the year 2000. These surpluses will lead to a cumulated 12 percent decline in the debt-GDP ratio between 1995 and 2000.

CONCLUSION

We have argued that *wide bands* have been useful in limiting competitive disparities. They are likely to reduce fluctuations in the floating currencies and prevent the stable currencies from being hurt by competitive devaluation of the floating currencies. Most policymakers believe that the wide bands will prevail throughout the transition. Officially adopting the wide bands as normal and reintegrating floating currencies into the ERM would benefit the system overall. For this reason, both the European Monetary Institute Council and the European Union Council have advised maintaining the wide bands.

We have also argued that the more general *fiscal criteria* set forth in Article 104c of the Maastricht Treaty should be used in conjunction with the numerical criteria outlined elsewhere in the document. Under these more general criteria, countries that reversed the path of debt accumulation and achieved a sustainable deficit would be admitted to the monetary union. Clearly, such a change would allow more countries to qualify for acceptance.

A third strategy for achieving monetary union, *a multispeed transition*, has now been widely accepted. Under a multispeed transition, a small group of countries will form the initial core of the monetary union, and other countries will join over time. We have seen that France has succeeded in keeping its currency closely linked to the German model. Based on the exchange rate criterion, France is likely to be among the countries in the core group.

Overall, our analysis suggests that the prospects for monetary union are less gloomy than many analysts believe. Although policymakers in most countries must continue their efforts to strengthen convergence, the formal acceptance of wide exchange rate bands, more general fiscal criteria, and a multispeed transition could ease the achievement of monetary integration.

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Table 1: Volatility of Exchange Rates against DM
(Period Standard Deviation)

		Feb. 73- Dec. 79	Jan. 80- Mar. 83	Apr. 83- Sep.87	Oct. 87- June 92	July 92- Aug. 93	Sep. 93- May 95
Nominal Rates	France	10.2	8.6	4.9	0.8	1.3	1.6
	Italy	17.9	8.8	9.2	2.0	14.2	11.8
	U.K.	16.4	6.5	13.7	5.7	8.2	5.1
	Spain	17.3	11.2	13.3	4.6	12.5	6.6
Real Rates	France	5.1	3.5	2.5	0.9	1.3	0.8
	Italy	5.9	3.1	2.0	2.8	6.6	2.0
	U.K.	6.8	6.7	7.5	4.2	6.0	2.1
	Spain	9.1	4.3	4.6	6.1	6.1	0.7

* Real rates end in Jan.95.

Source: Bank of International Settlements, and authors' calculations.

Table 2: Fiscal Criteria

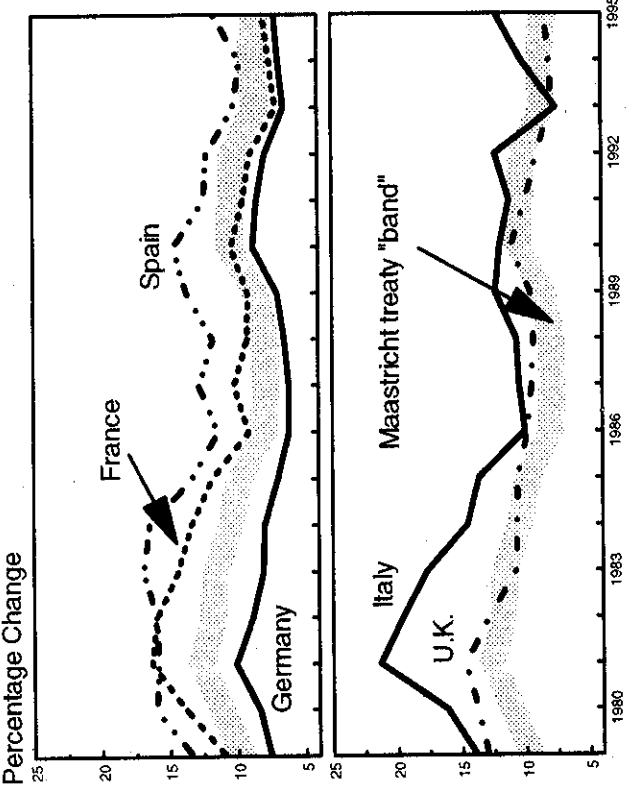
Government Debt-GDP Ratio					
	Growth Rate (Percentage change over previous year, period average)			Level	
	1980-1990	1991-1994	1995-2000	1995	2000
Germany	3.2	3.9	2.3	62.5	56.9
France	2.3	8.7	1.7	59.5	53.5
Italy	4.6	5.7	-2.0	122.1	111.1
U.K.	-4.1	14.2	-0.8	53.4	47.4
Spain	10.3	9.3	1.8	66.5	70.1

Actual/Forecasted Deficit Ratio and Sustainable Deficit Ratio				
	Deficit in 1995	Sustainable deficit in 1995	Deficit in 2000	Sustainable deficit in 2000
Germany	2.3	3.0	1.9	3.1
France	5.0	2.4	1.6	2.7
Italy	7.8	8.8	3.5	8.3
U.K.	4.2	2.8	0.1	2.7
Spain	6.2	4.7	2.9	4.9

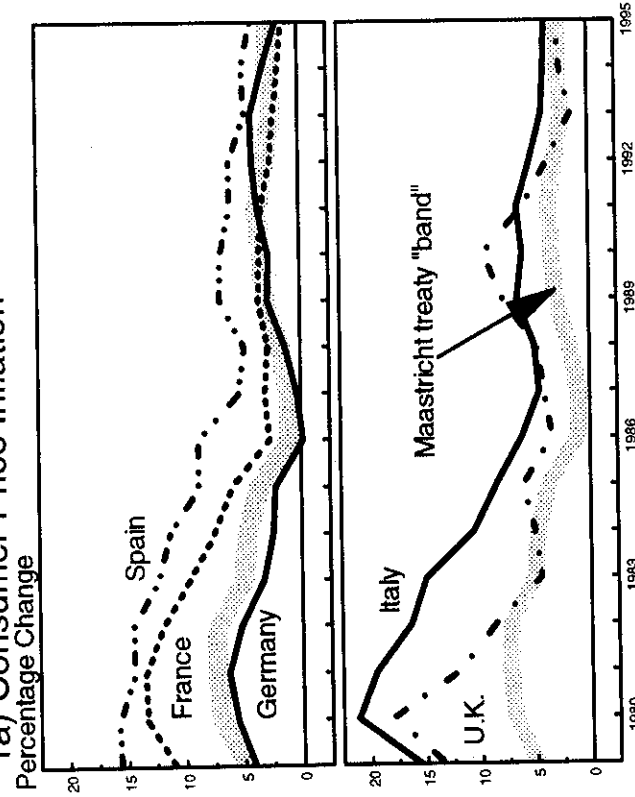
Source: OECD Economic Outlook, 56, December 1994, 58, December 1995, and authors' calculations.

Chart 1: Maastricht Convergence Criteria

1b) Long Term Interest Rates**

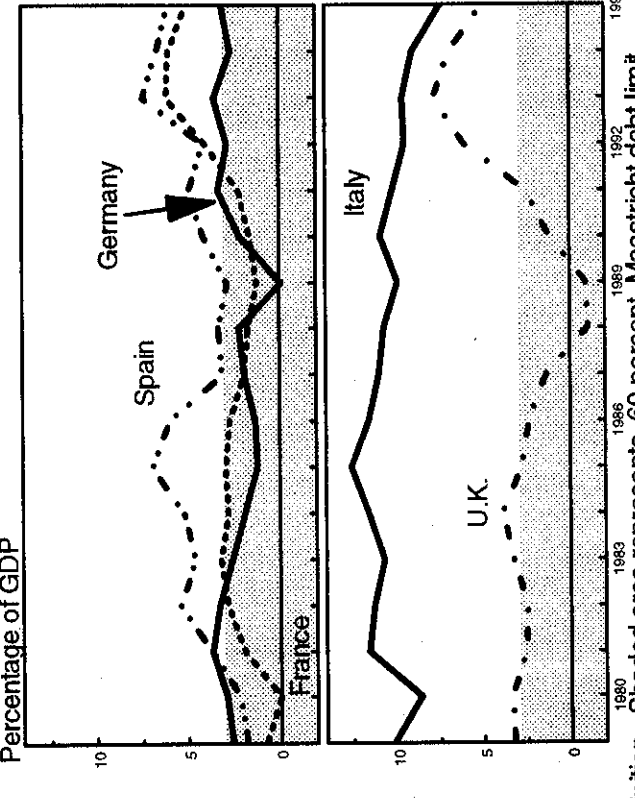


1a) Consumer Price Inflation*

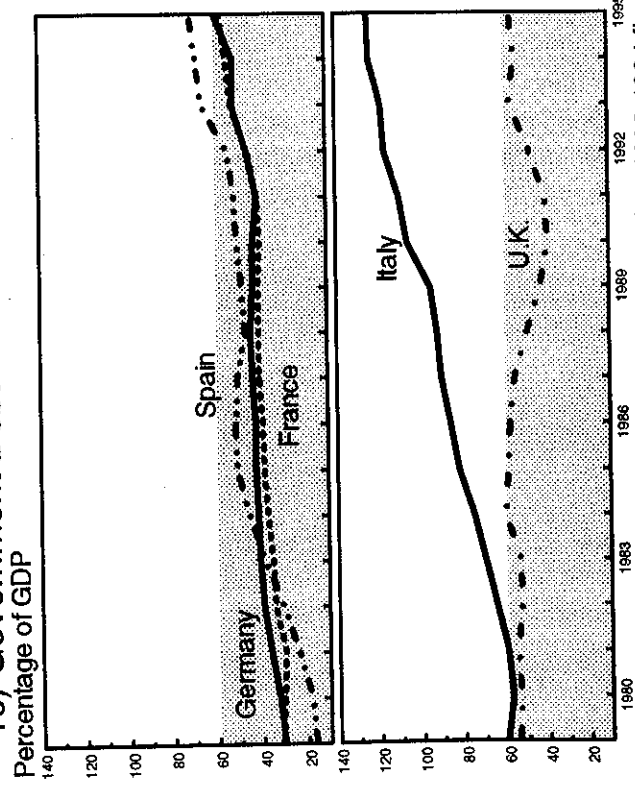


* Shaded band represents average of three Maastricht members with lowest inflation rates, plus 1.5 percent
 ** Shaded band represents average interest rate of three Maastricht members with lowest inflation rates, plus 2.0 percent

1d) Government Deficit****



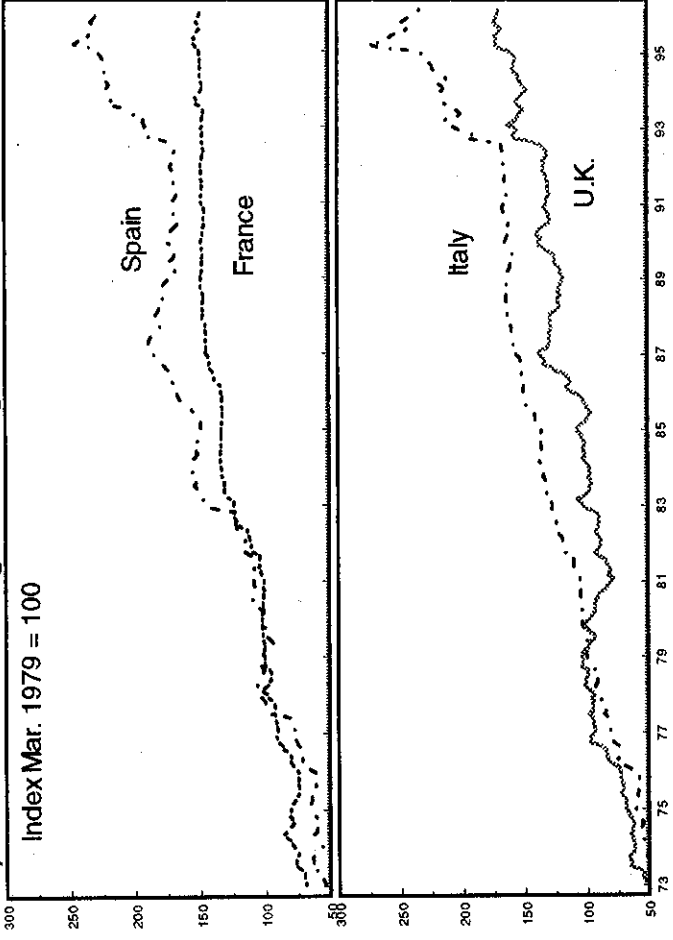
1c) Government Debt***



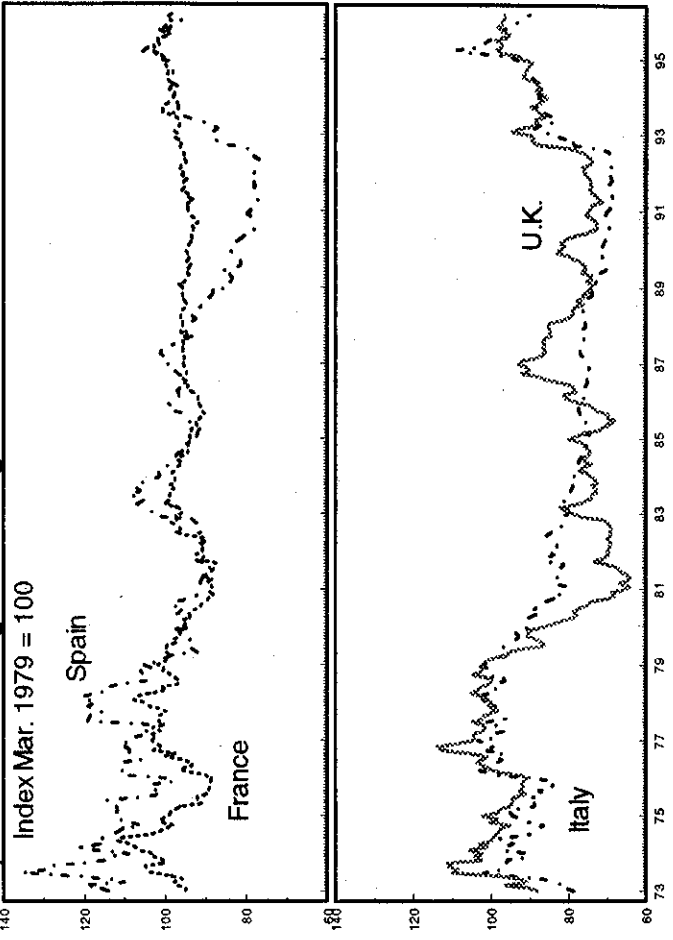
*** Prior to 1990, standard national account definition, 1990-1994 figures use Maastricht definition. Shaded area represents 60 percent Maastricht debt limit.
 **** Shaded area represents the 3 percent Maastricht deficit limit.

Chart 2: Exchange Rates

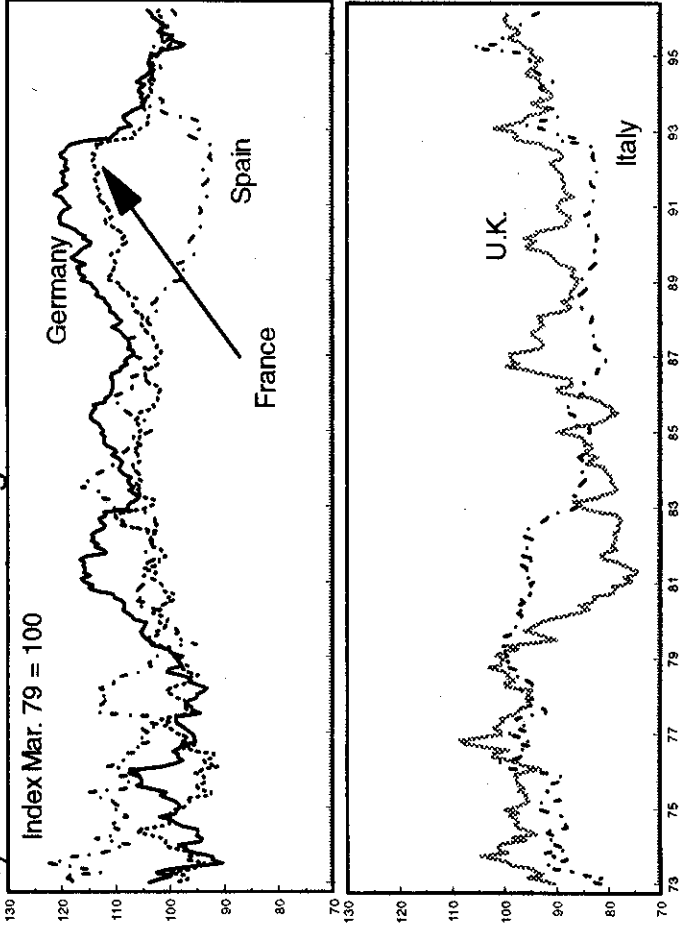
2a) Nominal exchange rates against DM



2b) Real exchange rates against DM



2c) Real effective exchange rates*



* Exchange rates deflated by CPI of EC countries (weighted by the same GDP shares)

Chart 3: Volatility and Depreciation of Nominal Exchange Rates against DM

July 1992 - May 1996

(percentage change over previous month, period average)

