

Chapter 20

Optimum Currency Areas and the European Experience

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The establishment of a common European currency and the debate over its possible benefits and costs was one of the key economic topics of the 1990s. As the discussion in this chapter points out, European monetary integration has been an ongoing process. Fixed exchange rates in Europe were a by-product of the Bretton Woods system. When strains began to appear in the Bretton Woods system, concerns arose about the effects of widely-fluctuating exchange rates between European countries. The 1971 Werner report called for the eventual goal of fixed exchange rates in Europe. Reasons for this included enhancing Europe's role in the world monetary system and turning the European Union (EU) into a truly unified market. Also, many Europeans hoped economic unification would encourage political unification and prevent a repeat of Europe's war torn history.

The first attempt at a post-Bretton Woods fixed exchange rate system in Europe was the "Snake." This effort was limited in its membership. The European Monetary System (EMS), established in 1979, was more successful. The original member countries of the EMS, included Germany, France, Italy, Belgium, Denmark, Luxembourg, the Netherlands, and Ireland. In later years, the roll of membership grew to include Spain, Great Britain, and Portugal. The EMS fixed exchange rates around a central parity. Most currencies were allowed to fluctuate above or below their central rate by 2.25 percent although the original band for the Italian lira and the bands for the Spanish peseta and the Portuguese escudo allowed for fluctuations of 6 percent in either direction from the central parity.

After attacks and realignments in its early years, the EMS grew to become more sturdy than its predecessors. The presence of small bands instead of pure fixed rates helped, as did the guarantee of credit from strong to weak currency countries. The presence of capital controls was quite important, but these were slowly dismantled. The EMS was, in some sense, simply a peg to the DM. Many felt that the dominant position of the DM had allowed other countries to import Germany's inflation fighting credibility and that this was another advantage of fixed rates in Europe.

Years of quiet ended, though, in 1992–1993. German reunification had led to higher interest rates in Germany (to fight inflationary pressures), but other countries were not in a position to follow the rate hikes. Fierce attacks followed and some countries (the United Kingdom and Italy) left the EMS in 1992 and the bands were widened to 15 percent in August 1993.

In 1986, the EU launched a more aggressive integration package known as "1992" that was intended to complete the internal market by 1992. To further that goal, a plan of European Economic and Monetary Union, which involved a single currency and was embodied in the Maastricht treaty, was begun, and by 1993 had been accepted by all EU countries. Reasons for pursuing a single currency included: furthering market integration, broadening the viewpoint of monetary policy by moving decision making from the Bundesbank to a European Central Bank, the difficulties in maintaining fixed rates with free capital movements, and finally, to support political unification.

A crucial aspect of EMU has been the goal of economic convergence embodied in the Maastricht convergence criteria and the Stability and Growth Pact (SGP). These agreements stipulate low deficits and debt to GDP ratios and are an attempt by low inflation countries to prevent free-spending counterparts from turning the euro into a weak currency. Eleven nations participated in the launch of the euro in 1999, with the United Kingdom and Denmark choosing not to join, Sweden failing the exchange rate stability criteria, and Greece failing all criteria (Greece joined two years later). The nations in the euro area have ceded monetary control to the European System of Central Banks (ESCB). The national central banks are now part of an overarching structure headed by the governing council of the European Central Bank (ECB). The ESCB is a very independent central bank with no political control and little accountability. Additionally, a new exchange rate mechanism has begun in which non-euro EU members peg to the euro.

There are both advantages and drawbacks to this decision to form a currency union. The theory of optimum currency areas provides a way to frame an analysis of the benefits and costs of a single currency. The benefits of a common currency are the monetary efficiency gains realized when trade and payments are not subject to devaluation risk. These benefits rise with an increase in the amount of trade or factor flows, that is, with the extent of economic integration. A common currency also forces countries to give up their independence with regards to monetary policy (at least those countries which are not at the “center” of the system). This may lead to greater macroeconomic instability, although the instability is reduced, the more integrated the country is with the other members of the common currency area. The analyses of the benefits and costs of membership in a common currency area are presented in the text chapter as the *GG* and *LL* schedules, respectively. The United Kingdom’s decision not to join the euro area (as summarized in Gordon Brown’s five tests) can be viewed as an application of this analysis.

The *GG-LL* framework is applied to the question of whether Europe is an optimum currency area. An illuminating way to frame the question is to compare the United States to Europe. The evidence that Europe is an optimum currency area is much weaker than the evidence supporting the notion that the United States is an optimum currency area. Trade among regions in the United States is much higher than trade among European countries, though a box in the chapter considers to what extent a common currency might increase trade. Labor is much more mobile within the United States than within Europe. Federal transfers and changes in federal tax payments provide a much bigger cushion region-specific shocks in the United States than do analogous EU revenues and expenditures.

The chapter concludes by considering the future of EMU. The facts that the EU is probably not an optimum currency area, that economic union is so far in front of political union, that EU labor markets are very rigid, and that the SGP constrains fiscal policies will all present challenges to Europe’s economy and to its policy makers in the years ahead.

■ Key Terms

Define the following key terms:

1. Optimum Currency Area _____

2. European Monetary Union _____

3. Fiscal Federalism _____

4. Monetary Efficiency Gain _____

5. Economic Stability Loss _____

6. Credibility Theory of the EMS _____

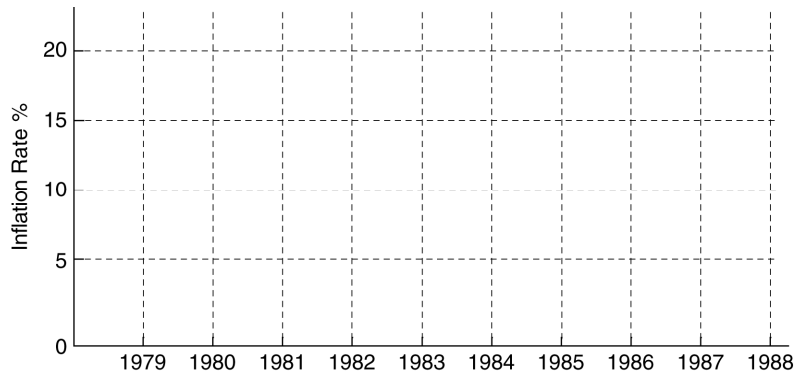
7. Maastricht Treaty _____

■ **Review Questions**

1. One often-cited success of the European Monetary System is the convergence in inflation rates among its members since the EMS began in 1989. Below are the annual CPI inflation rates for a number of the EMS countries. Plot these rates on the graph on the next page and then answer the questions that follow.

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
France	10.8	13.3	13.4	11.8	9.6	7.4	5.8	2.5	3.3	2.7
Germany	4.1	5.4	6.3	5.3	3.3	2.4	2.2	-0.2	0.3	1.3
Italy	14.8	21.3	19.5	16.5	14.6	10.8	9.2	5.9	4.7	5.0
Ireland	13.2	18.2	20.4	17.1	10.5	8.6	5.4	3.8	3.1	2.1

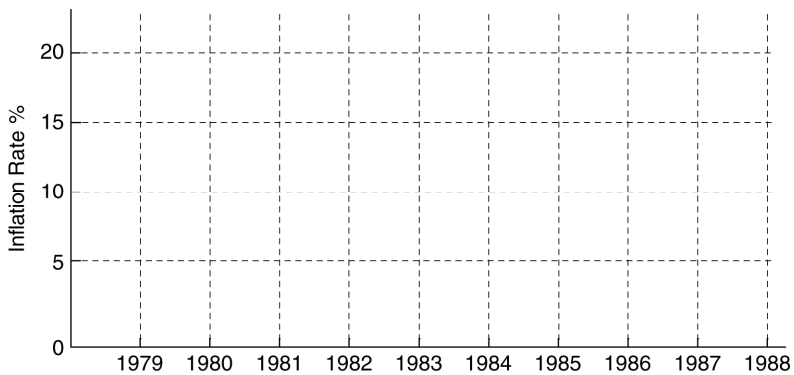
a. What happens to the inflation rates in each country over the 1980s? If you were to pick a country as the one which the others followed, which would it be, based upon the data?



- b. Explain how the relationship of the data to the argument that the EMS is an asymmetric system. Which of the four countries listed above serves as the center?

- c. Below are data for inflation rates in the United States and the United Kingdom, which were not members of the EMS in the 1980s. In the graph below, plot these inflation rates, as well as the inflation rate for the EMS's center country.

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
U.K.	13.4	18.0	11.9	8.6	4.6	5.1	6.1	3.4	4.2	4.8
U.S.	11.3	13.5	10.4	6.2	3.2	4.3	3.6	1.9	3.7	4.0



- d. Discuss how the data for the United Kingdom and the United States may offer evidence for an alternative to the hypothesis that inflation convergence in Europe was due to the EMS.

2. The average value of the European Currency Unit (ECU) in 1979 was 2.51 Deutschemarks, 5.83 French francs, and 1139 Italian lira. In 1985, after a number of realignments, the ECU was worth 2.23 Deutschemarks, 6.80 French francs, and 1431 Italian lira.

a. Fill in the following table:

	1979	1985
DM/lira	_____	_____
DM/franc	_____	_____
franc/lira	_____	_____

- b. Fill in the bilateral real exchange rates among the three countries in the following table using the data above and the following data on the CPIs in France, Germany, and Italy. Also calculate what the real exchange rates in 1985 would have been if there had never been any realignments and the nominal exchange rates in 1985 were the same as those that were in place in 1979.

CPI in:

Year	France	Germany	Italy
1979	100	100	100
1985	179	128	233

Bilateral Real Exchange Rates:

	1979	Actual 1985	If No Realignment
DM/lira	100	_____	_____
DM/franc	100	_____	_____
franc/lira	100	_____	_____

- c. How do your calculations demonstrate the need for realignments in the early years of the EMS?

3. At the end of August 1992, the pound was worth 2.8 Deutschemarks. Strains in the EMS were evident at that time.

a. Suppose that there was a 25 percent chance that the pound would be devalued within the year to 2.6 Deutschemarks and a 75 percent chance that the DM/pound exchange rate would be maintained. What was the expected value of the DM/pound exchange rate in August 1993?

b. What was the necessary difference between one-year interest rates on pound deposits and DM deposits at that time?

- c. In early September 1992, comments by the Helmut Schlesinger, the head of the German Bundesbank, made it clear that German policy was less likely to ease. This meant that Britain, which was already suffering from high unemployment, could not expect much in the way of German monetary expansion. The cost of staying in the EMS therefore rose for Britain. Suppose that in the wake of Schlesinger's comments the likelihood of Britain staying in the EMS (at 2.8 DM/pound) fell to 50% while the likelihood of the devaluation of the pound to 2.6 Deutschemarks by August 1993 rose to 50 percent. What was the new expected value of the DM/pound exchange rate in August 1993?
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- d. What is the new spot DM/pound rate if the probability of Britain leaving the EMS (and the exchange rate going to 2.6 DM/pound) rose to 50 percent and if the interest rate differential was 2 percent (with the pound-denominated securities paying the higher rate)?
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4. Suppose that the voters of Quebec are to decide whether to keep the Canadian dollar as their currency or instead to establish a new currency called the Quebec franc. The Quebec franc would float against the Canadian dollar. Determine whether each of the following factors makes the establishment of the Quebec franc more or less economically desirable from the point of view of the citizens of Quebec.

- a. The dominant language and culture of Quebec differs from that of the rest of Canada. This makes the establishment of the Quebec franc (more/less) desirable because
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- b. Most of Quebec's trade is with the province of Ontario. This makes the establishment of the Quebec franc (more/less) desirable because
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- c. Most of Quebec's income is derived from services and manufacturing while the economies of western Canada and the maritime provinces in the east are dominated by agriculture and fishing. This makes the establishment of the Quebec franc (more/less) desirable because
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- d. The extent of fiscal transfers from the central government to the provincial governments is smaller than the analogous transfers between federal and state governments in the United States. This makes the establishment of the Quebec franc (more/less) desirable because

- 5. There is debate within Europe about widening the membership of the EU and subsequently the euro zone. Suppose the two countries of Scandia and Cyrillica each wanted to become members of the euro area. Use the *GG-LL* analysis developed in the text to determine how each of the following factors affects the comparative net benefits to Scandia and Cyrillica of replacing their own domestic currency with the euro.

- a. The industrial structure of Scandia is much more similar to that of Germany and France than is the industrial structure of Cyrillica.

- b. A large opposition party in Cyrillica is against surrendering their own currency for cultural reasons, while there is near unanimity in Scandia in its commitment to joining the euro zone.

- c. Citizens of Scandia hold a greater proportion of their portfolio in euro area investments than do citizens of Cyrillica.

- d. Cyrillica produces a set of goods very different from those produced in the EU while Scandia produces a more similar set of goods; therefore, there is a greater potential for trade between the euro area countries and Cyrillica than between the euro area countries and Scandia.

6. As the text describes, the ECB's policy will be set by a board consisting of seventeen members, six from the executive board and the eleven heads of national central banks. Alternatively, in the United States, the central board (the Board of Governors) has seven out of twelve votes on the policymaking committee. Use these details regarding the functioning of the ESCB to answer the following questions.
- What facets of the models we have created make this voting procedure potentially problematic?

 - What about the voting makes the accession of new countries to the euro area more problematic for a country like Germany than when new countries joined the EMS?

 - One promised benefit of the euro was low inflation and stable monetary policy. Was that a valid promise?

■ Answers to Odd-Numbered Textbook Problems

- The stability of the EMS depended upon the ability of member countries' central banks to defend their currencies. The level of foreign currency reserves to which a central bank has access affects its ability to defend its currency; the larger the stock of reserves, the better positioned a central bank is to defend its currency. Credits from the central bank of a strong-currency country can help a weak-currency central bank defend its currency by putting at its disposal more reserves when its currency is threatened. Participants in the foreign exchange market may be less apt to speculate against a weak currency if they know there are ample reserves in place to defend it.
- A 3 percent difference on the annual rate of a five-year bond implied a difference over five years of $1.03^5 = 1.159$ (that is 15.9 percent). This means that the predicted change in the lira/DM exchange rate over 5 years was far above the amount that would be consistent with the maintenance of the EMS bands. Thus, there was little long-term credibility for the maintenance of the EMS band with these interest differentials on five-year bonds.
- A favorable shift in demand for a country's goods appreciates that country's real exchange rate. A favorable shift in the world demand for non-Norwegian EMU exports appreciates the euro (and hence the Norwegian krone) against noneuro currencies. This adversely affects Norwegian output. The adverse output effect for Norway is smaller the greater the proportion of trade between Norway and other euro-zone countries (and therefore the smaller the proportion of trade between Norway and noneuro-zone countries).

7.
 - a. While in the ERM, British monetary authorities were obliged to maintain nominal interest rates at a level commensurate with keeping the pound in the currency band. If this obligation were removed, British monetary authorities could run an expansionary policy to stimulate the economy. This would cause the pound to depreciate vis-à-vis the DM and other currencies.
 - b. Writers at the *Economist* believe that expected future inflation will rise in Britain if it leaves the EMS which will cause nominal interest rates to rise through the Fisher effect.
 - c. British policy makers may have gained credibility as being strongly committed to fight inflation and to maintain the pound's value through Britain's membership in the ERM since they were willing to allow the British economy to go through a protracted slump without resorting to a monetary expansion which would have jeopardized their membership in the ERM.
 - d. A high level of British interest rates relative to German interest rates would suggest high future inflation in Britain relative to that in Germany by the Fisher relationship. Higher British interest rates may also result from a relatively higher money demand in Britain (perhaps due to relatively higher British output) or relatively lower money supply growth in Britain than in Germany.
 - e. British interest rates may have been higher than German interest rates if British output were relatively higher. The smaller gap at the time of the writing of the article cited may reflect relatively poor British output growth over the past two years. Also, German real interest rates may have risen because of the increased demand for capital for investing in eastern Germany after reunification.

9. A single labor market would facilitate the response of member countries to country-specific shocks. Suppose there is a fall in the demand for French goods which results in higher unemployment in France. If French workers could easily migrate to other countries where opportunities for employment were better, the effect of the reduction in demand is mitigated. If workers could not move, however, there is a greater incentive to devalue the franc to make workers more competitive with respect to workers in other countries. EMU's success, in many respects, depends on the ability of labor markets to make the adjustments that can no longer be made by the exchange rate. The absence of a unified labor market would mean all adjustments would have to come through internal wage adjustments, a difficult prospect.

11. When the euro appreciated against China's currency in 2007, EU countries that compete with China in third country export markets should have seen a larger drop in aggregate demand as various customers may have switched to the suddenly relatively cheaper Chinese products. Germany should be hurt less than Greece given the assumptions in the question. If Greece had its own currency, it may have allowed its currency to depreciate against Germany slightly so that it had a smaller appreciation against China. This may have mitigated the effects on its exporters.