
Was the ERM Crisis Inevitable?

By Bryon Higgins

European currency markets have been subject to recurring periods of turmoil since the summer of 1992. In the first wave of turmoil in September of 1992, the United Kingdom and Italy withdrew their currencies from the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS). In the second wave of turmoil in August of 1993, the ERM temporarily suspended the narrow bands within which exchange rates of remaining ERM currencies were allowed to fluctuate. Understanding the reasons for the ERM crisis is essential for predicting the future course of European economic, financial, and political developments—all of which could affect the U.S. economy into the 21st century.

According to one interpretation, the ERM crisis was caused by a combination of bad luck and bad policy decisions. This interpretation was offered by monetary officials in Europe in their analysis of the reasons for ERM turmoil in 1992 (European Community, Monetary Committee). The bad luck was the timing of the large external shock to European economies resulting from German unification and monetary union in 1990. This shock imposed severe strains on European economies and thus on the ERM because it led to

a divergence between the policy priorities in Germany and those in other EMS countries. These strains were exacerbated by inappropriate macroeconomic policy decisions that contributed to high inflation and budget deficits in some EMS countries—especially the United Kingdom and Italy. This interpretation of the ERM crisis leads to a relatively sanguine view that only minor modifications to the ERM system will allow a return to exchange rate stability as a step toward full monetary union in the European Community (EC) by the end of this decade, as envisioned in the Maastricht Treaty.

More skeptical analysts offer a much less sanguine interpretation of the crisis. They view the ERM as fundamentally flawed. Although not denying that German unification and unsound macroeconomic policies contributed to strains within the ERM, these analysts stress that the design of the system made it particularly vulnerable to such disruptive factors. Fundamental systemic changes would thus be required to achieve either exchange rate stability as a precursor to monetary union within the EMS.

The purpose of this article is to evaluate the reasons for the ERM crisis and the changes necessary to prevent a recurrence. The first section describes why Europeans want exchange rate stability and how they tried to achieve that goal before the new ERM evolved in the late 1980s. The second section analyzes the reasons the new ERM was vulnerable and how that

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vulnerability, while not making the crisis inevitable, nonetheless made the system susceptible to crisis. The final section evaluates prospective changes that might be necessary to reduce the vulnerability of the ERM.

DESIRE FOR EUROPEAN INTEGRATION AND EXCHANGE RATE STABILITY

The ERM crisis has led some to question whether exchange rate stability leading ultimately to monetary union is a feasible goal. Yet most European political leaders continue to express their determination to achieve that goal as soon as possible. This determination grows out of a long standing desire in Western Europe for greater economic, monetary, and political integration. The specific contribution of the ERM was intended to be greater stability of exchange rates among the currencies of EC countries.

Why Europeans want stable exchange rates

Europeans have a long history of trying to stabilize the exchange rates between their national currencies. Exchange rate stability is considered critical by member states of the EC for two reasons: 1) a history of exchange rate instability has led to economic hardship and social disruption, and 2) trade is important for economic performance.

The history of exchange rate instability in 1920s and 1930s has had an enduring effect on Europeans' perspective. Whereas exchange rates had been stable and European economies had prospered under the international gold standard in the third of a century leading up to World War I, exchange rate instability in the interwar period was accompanied by recurring financial crises and extreme economic hardship in Europe and elsewhere.¹ Ruinous inflation and massive unemployment were factors contributing to the rise

of Fascism and thus to the near destruction of Europe resulting from World War II. Both the floating exchange rates of the early 1920s and the managed exchange rates of the 1930s had proven disastrous for European prosperity and social cohesion. The commitment of most European leaders in the second half of the 20th century to exchange rate stability thus grows out of European experience in the first half of the century.²

A second reason Europeans desire exchange rate stability is that the national economies in Europe are highly interdependent. A major element of this interdependence is the extensive international trade conducted within Europe. Nations that rely heavily on imports and exports for prosperity are said to have *open* economies.

The degree of openness for EC countries is extremely high (Table 1). All of the EC member countries rely much more extensively on international trade than does the United States or Japan. For some of the smaller EC countries, their international trade approaches or even exceeds the total output in their economies.

The high degree of openness of European economies makes them very vulnerable to fluctuations in exchange rates. Depreciation in the exchange value of their currencies thus has a much larger impact on their domestic inflation than a similar depreciation of the dollar would have on U.S. inflation. Conversely, currency appreciation does much more damage to their economies, through reducing the competitiveness of firms and workers that produce for export, than a comparable dollar appreciation would have on the U.S. economy. Exchange rate fluctuations more seriously impair economic performance for European countries than for less open economies.

Stability of exchange rates among the European currencies is particularly important for preventing inflation and unemployment. Over half of the total trade of EC countries is conducted with other EC countries. Appreciation of

the German deutsche mark relative to the Belgian franc, for example, would lead to rising unemployment in Germany and rising inflation in Belgium. German firms would have to cut back production and employment because German goods would become more expensive in Belgium, leading to a reduction in Belgian imports from Germany. The higher cost of those German goods that continued to be sold in Belgium would also raise Belgian inflation. Such effects are very large for Belgium and Germany because their economies are highly integrated through extensive trade.³ Moreover, the integration of European economies is likely to increase in the years ahead as the full effect of the "single market" program is realized.

The high and growing interdependence of EC economies thus reinforces the historical experience in convincing many Europeans that exchange rate stability is essential for prosperity in all EC member countries. Exchange rate stability is also viewed in Europe as a prerequisite for full monetary union, with individual national currencies to be replaced by a single currency for use in the EMS as envisioned in the Maastricht Treaty of 1992.

Precursors to the new ERM

The prospect of exchange rate instability in the EC recurred after the breakup of the Bretton Woods system in 1971. The EC, which was established in 1957, set out an agenda for economic and political integration in Europe.⁴ An important element of that agenda was exchange rate stability. This goal was achieved initially by EC members' participation in the Bretton Woods international monetary system established after World War II in order to prevent recurrence of the chaotic economic conditions of the interwar period. The system collapsed in 1971 after the United States, which had provided the U.S. dollar as the anchor of the system, was unable

Table 1

Degree of Openness

(Imports plus exports as a percent of GDP)

Belgium	136
Denmark	66
France	45
Germany	70
Ireland	117
Italy	36
Netherlands	99
United Kingdom	49
Japan	18
United States	22

Source: *International Financial Statistics*, IMF

to meet its commitments.

Without the dollar as an anchor, European monetary officials attempted to stabilize exchange rates within Europe through a system commonly referred to as the "snake." In this system, each country was committed to limiting fluctuations of its exchange rate to 2.25 percent vis-a-vis other member countries. Many major European countries were unable to do so, however. Recurring attempts by France, Italy, and the United Kingdom to stay in the system always failed. Only Germany and a group of small countries surrounding it were successful at stabilizing their exchange rates against each other. Volatility in other European exchange rates persisted.

To bring a halt to this volatility, central banks of EC members agreed in 1979 to form the European Monetary System. All original

members of the EMS other than the United Kingdom also agreed to participate in its Exchange Rate Mechanism. As with the snake of the 1970s, the ERM required that members' exchange rates remain within 2.25 percent (6 percent for the Italian lira) bands against each of the other EMS currencies. According to the terms of the ERM, each central bank was obligated to engage in exchange market intervention whenever market forces threaten to violate any of the bands. If the value of the French franc were to fall to the lower limit of its band against the deutsche mark, for example, both the Bank of France and the Bundesbank would be required to buy French francs as necessary to prevent the franc from breaching its target band relative to the deutsche mark. The consensus among empirical studies of exchange rates is that such intervention under the EMS rules did help stabilize European exchange rates relative to the volatility of the 1970s (Giavazzi and Giovannini).

Exchange rates in the original ERM, however, were far from immutable. Rates were realigned 11 times during the eight years after the formation of the ERM. The currencies involved and the magnitude of exchange rate changes resulting from these realignments are shown in Table 2. Most of the realignments in the early years of the EMS involved a revaluation—an increase in the foreign exchange value of a currency—of the deutsche mark and the Dutch guilder against the other ERM currencies. After 1982, the Belgian franc and Danish krone joined the other two strong currencies that appreciated relative to the weaker currencies of their ERM partners. These revaluations were often accompanied by devaluation—a decline in the foreign exchange value of a currency—of one or more of the weak currencies in the ERM.

Realignments in this period were necessary to compensate for differences in inflation rates among ERM members. Countries in the strong currency zone had much lower inflation throughout the period than did the weak currency coun-

tries (Chart 1). Germany was central to the strong currency zone not only because it was by far the largest of the countries but also because it had the most consistent record of low inflation. This record was largely due to the unquestioned commitment of the Bundesbank to price stability. The German hyperinflation of the 1920s had such disastrous economic and political consequences that the legislative mandate for the Bundesbank makes price stability the preeminent goal of German monetary policy. As a result of this credible commitment and history of relatively stable prices, the strong currency zone essentially includes ERM countries that are able to match the German performance in containing inflation. As explained below, pegging currencies to the deutsche mark is the primary means used in the EMS for “importing the credibility” of the Bundesbank. The strong currency countries can usefully be thought of, therefore, as those successful in staying in a deutsche mark zone of stability—that is, in avoiding the necessity to devalue their currencies relative to the deutsche mark.

For countries with inflation higher than in Germany, realignments were necessary to prevent real exchange rates—that is, market exchange rates adjusted for inflation—of the weak currencies from increasing too much. Such an increase in their real exchange rates would have impaired the competitiveness of goods produced in the weak currency countries. As a result, these countries would have experienced a decline in exports and an increase in imports, thereby producing trade deficits.⁵

While providing greater overall stability in exchange rates, the ERM in its first eight years allowed occasional realignments when necessary to correct for such economic fundamentals as differential inflation rates. This type of exchange rate system is commonly called a “fixed-but-adjustable” rate system. The timing and magnitude of realignments were typically negotiated by all members of the ERM to ensure that countries could not unilaterally devalue their

Table 2

Realignments in the ERM*(Percent change in bilateral central rate)*

Date	BLF	DK	DM	ESC ¹	FFR	IL ²	IP	DG	PTA ³	UKP ⁴
9-24-79		-2.86	+ 2.0	*					*	*
11-30-79		-4.76		*					*	*
3-23-81				*		-6.0			*	*
10-5-81			+ 5.5	*	-3.0	-3.0		+ 5.5	*	*
2-22-82	-8.5	-3.0		*					*	*
6-14-82			+ 4.25	*	-5.75	-2.75		+ 4.25	*	*
3-21-83	+ 1.5	+ 2.5	+ 5.5	*	-2.5	-2.5	-3.5	+ 3.5	*	*
7-22-85	+ 2.0	+ 2.0	+ 2.0	*	+ 2.0	-6.0	+ 2.0	+ 2.0	*	*
4-7-86	+ 1.0	+ 1.0	+ 3.0	*	-3.0			+ 3.0	*	*
8-4-86				*			-8.0		*	*
1-12-87	+ 2.0		+ 3.0	*				+ 3.0	*	*
9-13-92						-7.0				
9-17-92						*			-5.0	*
11-23-92				-6.0		*			-6.0	*
2-1-93						*	-10.0			*
5-14-93				-6.5		*			-8.0	*

Notes: 1. Portugal became a member of the ERM on April 6, 1992. 2. Italy suspended its membership in the ERM on September 17, 1992. 3. Spain became a member of the ERM on June 19, 1989. 4. UK became a member of the ERM on October 8, 1990, and suspended its membership on September 17, 1992.

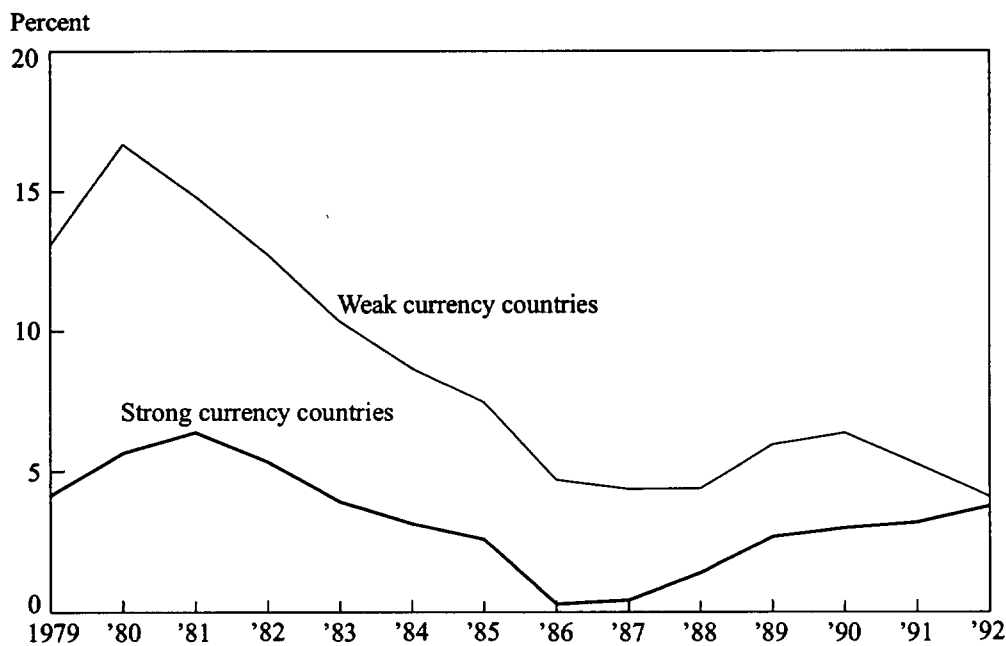
Other dates: ERM took effect March 13, 1979.

Bands: All fluctuation bands are ± 2.25 percent, except IL from March 13, 1979, to January 7, 1990 (± 6.0 percent); ESC, PTA, and UKP (± 6.0 percent). Effective August 2, 1993, fluctuation bands were widened to ± 15 percent for all ERM currencies, except DM and DG, which remain in a ± 2.25 percent band against each other.

Key: BLF = Belgian/Luxembourg franc, DK = Danish krone, DM = German mark, ESC = Portuguese escudo, FFR = French franc, IL = Italian lira, IP = Irish pound, DG = Dutch guilder, PTA = Spanish peseta, UKP = British pound sterling. * = not a member of the ERM.

Source: Computed from data in *European Economy: Annual Economic Report for 1993*, No. 54, Table 51, p. 231.

Chart 1
Inflation Rates in EMS Countries



Note: Strong currency countries are Germany and the Netherlands from 1979 to 1982; Germany, the Netherlands, Belgium, and Denmark from 1983 to 1992.

Source: Computed from International Monetary Fund data.

currencies merely to gain a competitive advantage for their export and import-competing industries. Experience in the 1930s had convinced Europeans that such competitive devaluations invited retaliation that led ultimately to monetary chaos and economic stagnation. Avoiding such devaluations was thus deemed essential to the success of the fixed-but-adjustable exchange rates that characterized the ERM from 1979 to 1987.

THE RISE AND FALL OF THE NEW ERM

The ERM began to change after 1987. By the early 1990s, it had been so transformed that some analysts came to refer to it as the "new ERM."

To understand what led to the ERM crisis in 1992-93, it is necessary to understand the factors that led to this transformation. While not making the crisis inevitable, these factors made the ERM so vulnerable that there was very little margin of safety to protect the system against policy errors or economic shocks.

The rise of the new ERM

Three factors were critical to the evolution of the new ERM: absence of realignments after 1987, removal of capital controls, and a timetable for monetary union.

In contrast to the frequent realignments in the

first eight years of the EMS, there were no realignments from January 1987 through mid-1992. One reason for this change was that inflation rates in the weak currency countries had progressively been lowered toward the lower inflation rates in the strong currency countries, as is evident in Chart 1. Moreover, the ability to reduce inflation in many EMS countries was attributable in substantial measure to the stigma attached to devaluation. The strength of a currency is widely viewed in Europe as a matter of national pride. Conversely, devaluations are seen as a shameful admission of economic weakness and imprudent national economic policies. Since devaluation in the ERM could only be avoided by lowering inflation to the rate in the deutsche mark zone, aversion to devaluation reinforced the commitment of central banks in weak currency countries to accomplish the goal of reducing inflation. Indeed, a commitment to the "franc fort" (or strong franc) became the centerpiece of French economic policy in the latter half of the 1980s. This strategy was so successful that French inflation was reduced from an average rate of over 11 percent in the first half of the 1980s to an average of about 3 1/2 percent in the second half of the decade. Avoiding devaluation relative to the deutsche mark thus became an important means of achieving the low inflation, which in turn would make future devaluation unnecessary. The ERM by the late 1980s had thus evolved from a fixed-but-adjustable rate system into a *de facto* fixed-rate system. This was the first step toward the new ERM of the early 1990s.

The second step toward the new ERM was the removal of capital controls. Capital controls were retained by most European countries until fairly recently. Such controls restrict international financial transactions, including the exchange of national for foreign currencies by individuals or firms. Although gradually liberalized in the 1960s, extensive capital controls were retained in EC countries other than Ger-

many and the Netherlands well into the 1970s. These controls were relaxed at varying rates during the 1980s but remained significant in many EMS countries until recent years. Italy, for example, did not remove most of its capital controls until 1988.

Capital controls were an important element in the success of the EMS during the 1980s.⁶ Limiting international capital flows reduced the downward pressure on the exchange rates of the weak currency countries before they had made enough progress toward lowering their inflation rates. Moreover, controls enhanced the effectiveness of central banks' interventions in currency markets, in part by insulating domestic credit markets from interest rate increases necessary to defend exchange rates. Capital controls were thus an instrument that enabled EMS countries to achieve the dual objectives of limiting exchange rate volatility and achieving a convergence in inflation rates toward that in the strong currency zone anchored by the Bundesbank.

This policy instrument was forfeited altogether in 1990. The Single European Act of 1986 set up timetables for achieving a single market in the EC for goods, services, and capital. The most publicized aspect of the Act was removing all remaining trade barriers within the EC by 1992—the so-called Europe 92 provisions. Less publicized were the provisions regarding the free flow of capital. According to the Act and the implementing EC directive adopted in 1988, all remaining capital controls were to be removed by most EMS members by 1990. The deadline was extended to 1992 for Spain and Ireland, and to 1995 for Portugal and Greece.

Forfeiting this instrument had dramatic implications for monetary policy within the EMS. Economic theory suggests that an economic policy instrument can be used to achieve only one goal. If monetary policy is used to pursue domestic economic goals, for example, it is not available to pursue the goal of limiting exchange rate fluctuations. Some other policy instrument must

be used for that purpose, as capital controls had been by many EMS countries in the 1980s. Eliminating capital controls while retaining fixed exchange rates thus entailed losing the prospective use of national monetary policies in the EMS to achieve the domestic objectives in each member country. Alternatively, without full convergence of national monetary policies toward the low inflation in the deutsche mark zone, exchange rate stability in the ERM could not be maintained. The inevitable tension resulting from this choice between domestic policy objectives and stable exchange rates led to what two economists termed, "The Unstable EMS" (Eichengreen and Wyplosz, 1993a).

Partially in recognition of this tenuous state of affairs, the member states of the EC in 1989 agreed to transform the EMS into a full monetary union with a single currency. In doing so, they accepted the recommendation in the report of a committee headed by Jacques Delors. The Delors Report recommended the need for greater convergence of economic policies and performance during the transition to monetary union: "With full freedom of capital movements and integrated financial markets, incompatible national policies would quickly translate into exchange rate tensions..." (Committee for the Study of Economic and Monetary Union, page 11). The implication of this concern was that the transition period before adopting a single currency should be of limited duration. Although the precise timing would not be known until later, it was generally thought that monetary union would become a reality before the turn of the century.

A timetable for monetary union was the third and final step in the transformation of the ERM to a vulnerable system. This timetable was formally adopted in early 1992 with the signing of the Maastricht Treaty. It stipulated that national currencies of EMS member states would be eliminated in favor of a single currency for all EMS members—with the possible exception of the United Kingdom, which reserved the right to retain

the pound. This move to monetary union was scheduled to occur no later than January 1, 1999.

The short time frame for monetary union had major implications for financial market participants. They had become accustomed to choosing portfolios after taking account of exchange rate risk, requiring a higher yield on securities denominated in currencies that might be devalued. The agreement of EMS members to move rapidly toward monetary union increased the conviction among international investors that devaluations would not occur. Yet interest rates remained much higher in some EMS countries than others. Investors thought they could earn high returns on the high-yield currencies—such as the Italian lira—without incurring exchange rate risk. Because they relied on convergence of economic performance among EMS countries, such investment decisions were termed "convergence plays." According to one estimate, "total capital flows involved in such convergence plays could well have been in the neighborhood of \$200-\$300 billion" (Goldstein and Mussa).⁷ These and other international financial transactions were facilitated by financial innovations and technological improvements that dramatically increased the degree of international capital mobility during the 1980s.

Such massive capital flows added yet greater vulnerability to the new ERM. Funds that flowed in one direction, in response to the belief that there was convergence of economic policies and performance among EMS countries, could just as freely reverse direction if such convergence came to be doubted. Such doubts were in fact major factors leading to the downfall of the new ERM.

The fall of the new ERM

Doubts about convergence arose from two sources. The first was the divergent domestic policy objectives that arose due to German unification. The second was doubts about ratification of the Maastricht Treaty.

The unification of Germany in 1990 led to serious strains in the EMS for a variety of reasons. One important reason was the method of financing the costs associated with unification. The German government chose to finance a large portion of these costs through borrowing. As a result, the German government went from a budget surplus in the year before unification to a deficit of over \$150 billion deutsche marks in the year after (Clausen and Willms). As is often the case, the change in the government budget was mirrored by a change in the balance of trade. The large current account surplus Germany enjoyed before unification was rapidly transformed into a sizable deficit afterward. Such rapid swings in trade balances are typically accompanied by significant changes in exchange rates—as in the United States in the early 1980s. In the German case, there was a need for real appreciation of the deutsche mark against the currencies of its major trading partners, mainly other EMS countries, to produce the current account deficit that was the necessary counterpart to the import of foreign capital needed to finance unification. The German government indeed proposed a realignment in EMS parities to accomplish this objective, with the deutsche mark being revalued relative to other EMS currencies. But Germany's EMS partners rejected this proposal because they had vowed not to devalue their currencies against the deutsche mark. The French were reportedly particularly averse to a realignment, arguing that it would be interpreted as abandonment of the franc fort centerpiece of their economic policy.

Without a general realignment of nominal exchange rates, the only remaining way to accomplish the necessary increase in the real exchange rate for the deutsche mark was for German inflation to exceed that of its trading partners for a while. Indeed, German inflation did accelerate following unification. The higher inflation resulted in part from the sharp swing toward expansionary fiscal policy but was also probably

spurred by a temporary spurt in monetary growth resulting from monetary unification. The Bundesbank responded to the rising inflation threat as it had in the past—by adopting a restrictive monetary policy that caused German interest rates to increase substantially. This came at a particularly inopportune time for many other EMS countries, which were increasingly concerned about recessions in their domestic economies. To maintain their exchange rate parities, many EMS countries were forced to keep interest rates higher than would have been called for by purely domestic economic considerations. This disparity between the policies followed by the Bundesbank and those urged by its EMS partners led many financial market participants to doubt whether some ERM members would be willing to defend their exchange rates with high interest rates. Such doubts further increased the vulnerability of the new ERM.

Doubts also arose at about the same time whether the Maastricht Treaty itself would be accepted. According to the terms of the Treaty, it could go into effect only if approved by all EMS members. In June 1992, the Danish people rejected the Treaty in a referendum. Moreover, opinion polls suggested the French people might do the same in a September referendum. Lack of popular support thus threatened to block the process leading to monetary union. If so, further devaluation would be more likely for currencies that might prove to be overvalued in real terms.

The most vulnerable currencies were those of countries that experienced a deterioration in their competitiveness due to continued high inflation after the last EMS realignment in 1987.⁸ Consumer prices in Italy, for example, had increased 33 percent in the five years since the last realignment, compared with only 13 percent in Germany and 16 percent in France. As a result, the real exchange rate of the lira had appreciated substantially, thereby threatening to perpetuate the large current account deficits Italy had experienced since 1987. Investors who had previously

acquired high-yielding lira assets assuming that the lira would not be devalued suddenly realized that assumption was no longer safe. Unwinding of convergence plays—that is, selling of lira-denominated bonds—thus intensified the downward pressure on the lira on foreign exchange markets in the summer of 1992. Despite heavy intervention and an increase in the discount rate by Italy's central bank, such pressure persisted into September—intensified by speculators who were betting the lira would have to be devalued. Selling pressure also developed on the British pound as investors concluded that it, too, was overvalued. Despite massive intervention by the Bank of England, the British government was forced to withdraw sterling from the ERM on September 16. The Italian government pulled the lira out of the ERM a few hours later, and Spain devalued the peseta. Having discovered the vulnerability of the EMS, financial market participants sold other currencies perceived to be candidates for devaluation. The resulting pressures by May of this year forced Portugal, Ireland, and Spain to devalue their currencies. The ERM was in the first stage of a crisis.

The crisis reemerged in the summer of 1993. The deepening recession throughout most of Europe led to increased calls for central banks to lower interest rates. They could do so without weakening their currencies, however, only as rapidly as the Bundesbank was willing to ease its policy, which was still geared to lowering domestic inflation. In part because of the differential impact of German reunification, the domestic priorities in Germany were very different from those in France and most other EMS countries. Yet fixed exchange rates required that there be a single monetary policy. As unemployment in the EC mounted, popular support for maintaining high interest rates to protect the exchange rate eroded. Even some politicians called for abandoning the exchange rate in favor of focusing on reducing unemployment. Speculators began to bet that domestic priorities would ultimately win

out despite governments' pledges to the contrary.

Exchange rate pressures intensified after the Bundesbank failed to cut its discount rate on July 29. Massive intervention by the Bank of France, the Bundesbank, and other European central banks failed to stabilize exchange rates.⁹ As a result, EC finance ministers meeting in an emergency session the following weekend were forced to give up temporarily in their attempt to keep EMS exchange rates within narrow bands. Instead, currencies remaining in the ERM were permitted to fluctuate in a range of 15 percent of other member currencies. The bands are so wide that some commentators view the current ERM arrangement as a de facto floating-exchange-rate system. Moreover, although the wider bands are described as temporary, there is no agreement on how or when a return to narrow bands might be feasible. Those European officials who advocate early return to the narrow bands presumably believe that the new ERM was fundamentally sound and that reinstating it with only modest changes could therefore avert another ERM crisis.

Those who think the ERM crisis was not inevitable point to alternative policy decisions that might have averted the crisis. The list of such policy actions is both long and varied: Italy and the United Kingdom could have chosen to lower their inflation rates sooner; France could have accepted the German proposal for a realignment in order to cope with the asymmetric effects of German unification; the German government could have limited the inflationary effects of unification by following a less expansionary fiscal policy; or Bundesbank officials could have lowered interest rates more rapidly to accommodate the domestic needs of their EMS partners.

While these and other policy actions would certainly have altered the nature and timing of the crisis, it is less certain that a crisis could have been averted altogether. The new ERM was inherently fragile and thus susceptible to any bad luck or mistaken policy choices. An analogy may

illustrate the point. Assume someone embarks upon a trip with only enough gasoline in the car to reach his destination if weather conditions are ideal. If the car were to run out of gas when a strong head wind is encountered, would the driver be justified in blaming bad luck when he has to walk the last few miles? The driver's misfortune was not inevitable, but it could not be said to be totally unexpected. His plan was faulty in that it allowed no margin of safety.

So, too, was the new ERM faulty. Only if this lesson is learned can the EMS members decide whether and how to proceed to monetary union.

CONCLUSION

Since the new ERM was inherently susceptible to shocks, fundamental changes may well be required to avert future exchange rate crises in the EMS. Problems in the EMS resulted because capital controls were eliminated before EMS countries were willing to surrender the autonomy of national monetary policies, as is required to maintain fixed exchange rates with full mobility of capital across national boundaries. Although there is no consensus on how to reform the ERM, such reform must entail either reducing capital mobility, accepting a single monetary policy for all ERM members, or allowing exchange rates to adjust to the divergent policies and performance among countries.

Perhaps the least attractive of these alternatives in the near future is for ERM members to adopt a single monetary policy—either by returning to narrow bands around fixed parities or by a rapid move to monetary union.¹⁰ Reducing unemployment is likely to remain the overriding goal in most European countries other than Germany for the next few years. For these countries, surrendering the autonomy of monetary policy would require governments to acquiesce in rising unemployment in order to stay on the timetable for monetary union in the Maastricht Treaty,

which is itself increasingly unpopular throughout Europe. Since this has proven to be unpalatable in 1993, there is little reason to believe it would be acceptable in 1994 or 1995. A return to a system with the same flaws as the new ERM might thus invite further exchange rate crises, which some believe would threaten the very existence of the EMS.

Reform of the ERM is more likely to be a combination of greater exchange rate flexibility and some limits on capital mobility. The greater exchange rate flexibility could be achieved in part through France and other ERM countries taking fuller advantage of the current 15 percent bands, allowing their currencies to depreciate temporarily against the deutsche mark. Alternatively, a general realignment—possibly including the pound and lira—might be used to establish a parity grid that would more nearly reflect current circumstances. Appreciation of the deutsche mark relative to other EMS currencies would help Germany achieve its goal of reducing inflation, while also benefiting countries whose primary goal is reducing unemployment. Subsequent realignments could then be used to reflect economic fundamentals after the shock waves of German unification have subsided.

If such realignments were to be accompanied by narrowing of the bands, some modest restrictions on capital mobility might well be necessary. One proposal is to require noninterest bearing deposit requirements for open foreign exchange positions (Eichengreen and Wyplosz, 1993b). Such requirements would raise the cost to speculators and insulate domestic credit markets, thereby enhancing the ability of central banks to defend parities without undesirable effects on domestic credit markets.

If indeed the ERM evolves along these lines, monetary union in Europe by the turn of the century as called for in the Maastricht Treaty seems improbable. But the resulting restoration of stability in the EMS could lay the groundwork for monetary union in the 21st century.

ENDNOTES

¹ The linchpin of the gold standard before the war had been the credibility of governments' commitment to balance of payment equilibrium through adjustments induced by gold outflows or inflows at fixed parities. This commitment was called into question as European and other governments suspended the gold standard under the pressures of war finance and inflation. Moreover, the war wrought fundamental economic, social, and political changes that undermined the credibility of the gold standard. Among the most important was wider dispersion of political power as the franchise was extended to working classes throughout Europe. As a result, reducing unemployment increasingly came to be an important goal of governments in many countries. Because economic policy could no longer be directed solely to balance of payments equilibrium, commitment to the gold standard was increasingly questionable. All of these factors made it impossible to restore the gold standard and the currency parities that prevailed before the war. As a result, exchange rates were allowed to float.

² That experience also helps explain the European view that monetary union and political integration are inextricably linked.

³ The most nearly comparable situation for the United States would be the exchange rate between the U.S. dollar and Canadian dollar. The United States and Canada have extensive trading relationships, too.

⁴ A year after its inception, the EC adopted another policy that also was to have a significant long-run impact. The Treaty of Rome that established the EC committed EC members to a common agricultural market. This market became a reality in 1964 and formed the basis for the Common Agricultural Policy (CAP) in the EC. Because of the details of administering the CAP, exchange rate fluctuations within the EC raised agricultural prices in Europe, thus promoting excess production and higher budget costs for subsidizing agricultural production. In part because exchange rate changes jeopardized the smooth functioning of the common agricultural market, the EC in 1965 stated that, "the task of the Community institutions is now to render internal devaluations and revaluations impossible or unnecessary, instead of merely difficult or unlikely" (Giavazzi and Giovannini, p. 9). With the exception of revaluation of the deutsche mark and the Dutch guilder in 1961, a further revaluation of the deutsche mark in 1969, and devaluation of the French franc in 1969, the task of achieving exchange rate stability in the EC was largely successful throughout the 1960s.

⁵ To see this, assume that the bilateral exchange rate

between the Italian lira and the German mark had been kept at the original 457 lira to 1 deutsche mark ratio when the EMS was formed in 1979. Further assume that in 1979 a bottle of comparable German and Italian wines sold for 30 deutsche marks in Germany or 13,710 lira. If the domestic price of Italian and German wine increased the same as other consumer prices in those countries, by 1987 the price of Italian wine would have risen to 35,577 lira. In contrast, the price of German wine would have increased to only 17,508 lira. Italian wine would thus have become twice as expensive as German wine. Many consumers in Italy (and elsewhere in Europe) would thus start drinking less Italian wine and more German wine because relative prices have shifted in favor of German wine. To prevent such relative price changes from distorting trade and production patterns throughout Europe, the Italian lira must be devalued relative to the deutsche mark to reflect the higher Italian inflation rate.

To fully offset inflation differentials, the exchange rate between the lira and the deutsche mark would have had to rise to 1,059 by 1987. Instead, only part of the differential was offset by the eight EMS realignments involving the lira-deutsche mark exchange rate from 1979 to 1987. As a result of these realignments, the official parities in the EMS following the last realignment in 1987 implied a lira-deutsche mark exchange rate of 721. Even at this exchange rate, the relative price of Italian wine would have increased and provided some incentive to shift consumption toward German wine. The strength of the incentive was not nearly so great as it would have been without any realignments, though. One reason for only partially accommodating inflation differentials through realignments was to ensure that inflation was reduced in weak currency countries. Fully accommodating such inflation would have led to rapid depreciation of the lira, thereby raising the lira price of imports so much that lowering the overall inflation rate would have been even more difficult.

⁶ Giavazzi and Giovannini present evidence that French and Italian controls were indeed successful at insulating domestic credit markets from international financial market pressures in periods before devaluation of their currencies. Under both systems, domestic residents were prohibited from borrowing and lending abroad.

⁷ One possible reason that rates remained higher than might seem justified in some EMS countries is that investors saw the exchange risk as being shifted from private investors to governments. The increase commitment of European governments to avoiding devaluation of their currencies implied a commensurate increase in the commitment to defend parities at all costs—including massive intervention.

Even if ultimately unsuccessful, such interventions could allow investors enough time to sell their high-yield assets before the devaluation occurred. The central banks acquiring the assets would then bear the losses rather than the private investors. In retrospect, this belief that governments bore the currency risk rather than private investors seems to have been justified.

⁸ The United Kingdom did not join the ERM until 1990. However, government policies from 1987 to 1990 were geared toward maintaining sterling exchange rates relatively stable relative to other EMS currencies, especially the deutsche mark.

Other currencies that "shadowed" the ERM without being members also experienced serious problems in the summer of 1992. In particular, the Finnish markka and Swedish krona came under attack due to market participants' views that prevailing exchange rates were unrealistic in light of the shocks their international trade positions experienced after the dissolution of the Soviet Union. Both currencies were ultimately allowed to float—the markka on September 8 and the krona on November 19. According to a survey of foreign exchange traders, however, the developments related to these currencies were peripheral to the ERM crisis (Eichengreen and Wyplosz, 1993a, pp. 95-98).

A full account of the events surrounding the September 1992 ERM crisis is given in "World Economic Outlook," IMF, 1993.

⁹ The precise amount of the intervention is not known. That it was massive, perhaps even unprecedented, is clear though. The Bundesbank alone reports having expended DM 60 billion during July 1993 for exchange market intervention, mostly to support the French franc (Deutsche Bundesbank, *Monthly Report*, August 1993).

¹⁰ There are two additional reasons to rule out a rapid move to monetary union. First, few if any EMS countries will be able to meet the strict criteria for monetary union laid down in the Maastricht Treaty in the near future. According to these criteria, a country joining the European monetary union must have low inflation, budget deficits, debt, and long-term interest rates and must have kept its currency within its narrow ERM bands for at least two years. None of the EMS countries currently meets all of these criteria.

Second, the institutional and logistical framework for monetary union is not in place. This framework is to be developed by the European Monetary Institute (EMI), which is to begin work January 1, 1994. Such thorny issues as the design of the notes and coins that will constitute the common currency will have to be worked out before monetary union could become a reality. One particularly nettlesome issue in this regard is which and how many languages will be printed on the new European currency units. The EMI is the precursor to the European Central Bank, which will conduct the monetary policy for all members of the monetary union.

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