Many economists and policymakers have argued that most ERM countries could minimize exchange-rate volatility and enhance economic stability if the ERM were expanded to include the United States. The ERM and policy coordination, however, exemplifies the difficulties of achieving agreements on many of these points. Implementing target zones on a wider scale would be all the more difficult. Differences in preferences, policy objectives, and economic structures account in part for these difficulties. More fundamentally, however, coordination of macroeconomic policies will not necessarily benefit all participants equally, and those that benefit the most may not be willing to compensate those that benefit least. In the ERM, Germany is less inflation-prone than the other ERM countries and is reluctant to cooperate at the risk of increasing its inflation rate. Similarly, if benefits to the United States from coordination of macroeconomic policies with the other industrial countries are small, the United States may be reluctant to relinquish its policy independence, which is a necessary condition for an effective coordination of policies and for the maintenance of target zones. Until the participant countries can agree on these issues, realignments of ERM currencies, and worldwide exchange-rate fluctuations, will be unavoidable.

### Conclusion
As this brief review has suggested, the success of any target-zone arrangement for exchange rates depends on the ability of participant countries to agree on many facets of policymaking and implementation. The slow progress of the European Community toward the ERM and policy coordination, however, exemplifies the difficulties of achieving agreements on many of these points. Implementing target zones on a wider scale would be all the more difficult. Differences in preferences, policy objectives, and economic structures account in part for these difficulties. More fundamentally, however, coordination of macroeconomic policies will not necessarily benefit all participants equally, and those that benefit the most may not be willing to compensate those that benefit least. In the ERM, Germany is less inflation-prone than the other ERM countries and is reluctant to cooperate at the risk of increasing its inflation rate. Similarly, if benefits to the United States from coordination of macroeconomic policies with the other industrial countries are small, the United States may be reluctant to relinquish its policy independence, which is a necessary condition for an effective coordination of policies and for the maintenance of target zones. Until the participant countries can agree on these issues, realignments of ERM currencies, and worldwide exchange-rate fluctuations, will be unavoidable.

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**Economic Commentary**

Lessons from the European Monetary System

by Nicholas V. Karamouzis

The ERM countries have adjusted the central rates 11 times since the establishment of the EMS. With the most recent adjustment in January 1987, for example, was mostly intramarginal and generally was not accompanied by changes in nations’ monetary policies. Germany, in particular, made only small adjustments to monetary policy in response to the exchange-rate pressures. Consequently, the intervention failed to contain speculation, and a realignment became unavoidable.

There are other problems. If a target zone arrangement does not include all major currencies, it may be vulnerable to exchange-market pressures emanating from outside. On occasion, exchange-rate stability in the ERM has been compromised by exchange-rate volatility of nonparticipating currencies vis-à-vis the ERM currencies.

In particular, the Deutsch mark tends to appreciate against other European currencies when the dollar depreciates. The January 1987 realignment in the ERM, for example, was necessitated in large part because the Deutsch mark caused the mark to appreciate relative to the other currencies in the ERM. Such re- alignments become necessary because international investors do not hold all ERM currencies in equal proportions in their portfolios and because of economic and financial differences among the ERM countries.

To deal with this phenomenon, the ERM countries need a common policy response to external disturbances in general and to the dollar in particular. For example, an upward adjustment of interest rates by the ERM countries, except Germany, could have helped divert part of the capital flows that moved into Deutsch marks into other ERM currencies.

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**The Operating Components of the ERM**

The Exchange Rate Mechanism consists of four major components: the European Currency Unit, the parity grid, the convergence indicator, and the credit facilities. Because we are interested in the exchange-rate management of the ERM, we briefly discuss the European Currency Unit and then focus on the parity grid and the divergence indicators.

The European Currency Unit (ECU) is a composite currency, consisting of fixed amounts of 10 European currencies. The quantity of each country’s currency in the ECU reflects that country’s relative economic strength in the European community. The ECU functions as an unit of account, as a means of settlement, and as a reserve asset for the member countries. It has received growing use as a unit of account and as a means of payment in private transactions. Since the ECU is a composite currency, the exchange value is less prone to large exchange-rate swings than are individual currencies.

Three short-term credit mechanisms enable one to borrow from the ERM central bank at below market rates, then finance from another to finance exchange-market intervention. The Very Short-Term Lending Facility provides an unlimited amount of very short-term credit to finance intervention at the compulsory intervention margins. The Mobilization Mechanism permits temporary exchanges of official ECU’s for currencies, mainly to finance intra- marginal intervention, or intervention to influence exchange rates within the permissible bands. The Short-Term Monetary Support provides credits based on a member’s balance of payments and foreign-exchange reserve position. The European Monetary Cooperation Fund coordinates and facilitates all transactions. Official ECU’s serve as a means of settlement in these transactions. Each central bank deposits at least 20 percent of its gold and dollar reserves with the European Monetary Cooperation Fund in exchange for official ECU’s.

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**The Parity Grid**

Subject to the agreement of all the participants, each member of the exchange-rate mechanism determines a central exchange rate for its currency, which is denominated in currency units.

The recent realignment in January 12, 1987, the ECU central rate has been decreased by 7.52152 European francs, 7.85212 Danish kroner, 2.05833 Deutsche marks, 6.90463 French francs, and 2.30943 Dutch guilders, in
They are: Belgium-Luxembourg, Denmark, Italy, and the Netherlands. EMS refers to countries participating in the Exchange Rate Mechanism.

The narrow band shows the position of each ERM currency relative to the strongest currency in the group. It expresses the weakest currency’s market exchange rate vis-à-vis each participant currency as a percentage deviation from the weak currency’s central rate vis-à-vis each participant currency.

Chart 1 shows the relative position of ERM currencies against the Belgian franc, on May 26, 1987. As the chart indicates, the Danish kroner was the strongest currency in the ERM on that day, with the Danish kroner/Belgian franc central rate deviated 1.87 percent from the Danish kroner/Belgian franc central rate.

Continuing our example, if the Danish kroner should strengthen against the Deutsche mark by more than 2.25 percent margin on either side of these central cross exchange rates, except Italy which has 6 percent margin.

The Divergence Indicator

One number of the ERM must intervene when its currency reaches the 2.5 percent band against any other ERM currency. Ideally, ERM members would like to know when pressure is building on their exchange rates, so that they could take corrective action before their exchange rates reach the 2.5 percent bands. The divergence indicator attempts to provide such an early warning signal.

Basically, the divergence indicator measures the amount of an exchange rate that actively has moved from its central rate, expressed as a percentage of the margin of exchange-rate movement allowed under the 2.5 percent bands. A “threshold of divergence” is established at 75 percent of the maximum possible movement.

When a currency crosses its “threshold of divergence,” the authorities of the country concerned should implement corrective policies.

On several occasions, however, the divergence indicator may fail to provide an early warning signal. In part, the widespread practice of intramarginal intervention distorts the signal indicator also suffers from inherent technical problems. The ERM members need to modify the divergence indicator and to develop new indicators that trigger consultation and policy advice among the participants.

The Functioning of the System

When a ERM currency diverges too far from the central cross rates, appropriate countries must introduce policies to reduce the pressure on the exchange rates. European policymakers generally can employ three complementary policies to deal with short-term pressures on their exchange rates: 1) intramarginal intervention, 2) fuller use of the exchange-rate bands and intervention at the level of the margins, and 3) adjustment of interest rates.

Although experience varies, most ERM countries adopt intramarginal intervention as the first line of defense. Central banks of relevant countries undertake intramarginal intervention when they do not coordinate their activities with other ERM members.

If market pressure persists, usually the central banks of the “weak” currencys allow their exchange rates to move closer to the lower boundary of the band and/or adjust their domestic interest rates. The rates of exchange fluctuations are determined by speculators by making speculation costly and less rewarding. If such policies cannot reverse the pressure on the exchange rate, or if the relevant countries cannot implement the appropriate policies or if their domestic policy constraints, then EMS members eventually will need to realign the central rates.

The Observations on the ERM

The ERM provides valuable insights into the functioning of exchange-rate arrangements, and illustrates the problems that such mechanisms are likely to encounter. The more the market believes the lesson that the ERM illustrates is that the exchange-rate stability afforded by any target-zone arrangement requires a coordination of economic-policy objectives. Nations should achieve convergence of those economic variables that directly affect exchange rates, such as fiscal deficits, current-account imbalances, and real economic growth differentials.

Among the ERM countries, the Fundamentals of monetary determinants of exchange rates are slow converging. Although monetary policies also have become similar, the participating countries do not agree that zero inflation should be the ultimate objective of the European Economic Community. Consequently, monetary authorities in the ERM countries often face a policy dilemma between exchange-rate stability and interest-rate stability, and face a conflict between domestic and external objectives.

The European experience shows that aggressive interest-rate policies are the most effective means of stabilizing exchange rates, particularly when countries coordinate their policies. The need for such coordinated policies has increased as ERM countries have lifted restrictions and operated the single currency. Intra-ERM countries have liberalized restrictions on capital flows related to commercial transactions and because of political policy constraints, EMS members eventually will need to realign the central rates.

The data shows that aggressive interest-rate policies are the major source of exchange-rate instability. Policymakers will find it hard to determine the need for and proper magnitude of an exchange-rate realignment. Unfortunately, we have no precise method for relating economic variables to exchange rates and, therefore, have no precise way of determining the “equilibrium” target exchange rates. At a minimum, participating countries should cooperate and develop methods of monitoring economic developments in order to identify at an early stage possible signs of tension in the ERM.

Although some exchange-rate adjustment is unavoidable when national economic experiences conflict, the ERM has no rules should countries adjust their central rates to offset differentials among their inflation rates. This strategy implicitly provided a quantification of country-specific realignments, and established a new indicator of exchange-rate realignments. Now that relative money growth rates and inflation within the ERM have become more similar, realignments might be smaller and less frequent than in the past.

On the other hand, it could be harder for the countries involved to agree on new target rates. For example, in January 1987, the Italian lira was not included. The Italian lira is not included.

2. Throughout this paper, ERM refers to countries participating in the European Exchange Rate Mechanism. They are: Belgium-Luxembourg, Denmark, France, the Federal Republic of Germany, Ireland, and the Netherlands. EMS refers to countries that are members of the European Monetary System.


6. This is calculated as follows: The Danish kroner/Belgian franc market rate on May 26th was 0.814765; the central cross rate was 0.849376. Subtracting the ratio: (0.814765/0.849376) from one yields 0.0187 or 1.87 percent. In a similar way, we can calculate the deviations of the other ERM currencies from the Belgian franc.

Table 1 Parity Grid  

<table>
<thead>
<tr>
<th>Currency</th>
<th>Germany</th>
<th>Denmark</th>
<th>France</th>
<th>Ireland</th>
</tr>
</thead>
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<tr>
<td>DM</td>
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<td></td>
<td>3.5810</td>
<td>3.4003</td>
<td>3.2266</td>
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<tr>
<td>Irish pound</td>
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<td>2.1991</td>
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</tr>
<tr>
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<tr>
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</tr>
<tr>
<td></td>
<td>1.1100</td>
<td>1.0825</td>
<td>1.0825</td>
<td></td>
</tr>
</tbody>
</table>

a. All exchange rates are expressed in terms of national currencies rather than in terms of ECU.

3. 7. See Roland Vaubel. "The Return to the New European Monetary System," in Externalities, Perspective, Carnegie Rochester Cooper-